Town of Holland — A case study of managing local roads

LAST APRIL Don Becker was elected Chair of the Holland Town Board, one of three newcomers to the five-member board. Alleged “waste” and “inefficiency” in managing the town’s roads were hot topics at pre- and post-election public meetings.

“I was new to the Board, so my objective was to determine whether we were managing the budget properly to optimize the taxpayers’ investment in the roads,” says Becker. He asked the TIC’s Don Walker and Steve Pudloski for help. They agreed, even though the Center doesn’t have the resources to offer this service generally.

“We tell people to use preventive maintenance, correct drainage problems, rate their roads regularly, plan ahead, work with other governments (like counties), and take advantage of the TIC’s resources,” says Pudloski. As a case study, reviewing the Town of Holland roads program was an opportunity to compare classroom roadway management recommendations to a real world situation.

The TIC team visited the town, did a field review of roads, then talked with Becker, other board members, and Highway Superintendent Roger TeStroete.

“It’s pretty much a textbook case of how to do it right,” Pudloski agrees. “They are doing everything we recommend, and keeping the people they are serving informed and involved.”

The town, located along Lake Michigan in the southeastern corner of Sheboygan County, had a 2005 budget of about $360,000 [see profile below]. With one full-time employee and several part-timers for routine maintenance, they contract for most services, often with the County Highway Department. The budget goes toward plowing and ice control, pavement improvements, bridge repairs, and projects that they call “betterments.”

Pavements are in exceptionally good condition.

LAND USE Most roads abut farms in rolling hills. The remainder serve residential homes on the lake, and the edges of two small villages.

ROADS There are 54.8 miles of road. All but a half-mile are paved with overlays and hot mix. Pavements are 18-20 feet wide with narrow grass shoulders, mostly built in the 1920s and 1930s. Ditches and culverts drain to Lake Michigan via several rivers.

CONDITION Pavements are in exceptionally good condition (see graph). Over 70% are rated Excellent: 9-10, or Very good: 7-8 according to their 2003 PASER ratings. [See related story on page 6]

BUDGET The yearly roads budget has recently been about $350,000 allocated approximately as follows:

- Snow and ice .................. $55,000
- Equipment maintenance .... $11,000
- Routine maintenance (crack filling, brush cutting) . $53,000
- Wages & insurance ........... $70,000

Project total .................. $161,000
- Betterment projects ........ $46,000
- Bridge projects .............. $30,000
- Pavement projects (resurfacing, seal coat & crack seal) ........... $85,000

Ordinary, low tech betterment projects improve roadsides and save maintenance costs.

“What we were genuinely impressed with the overall road program,” says Walker. “They have unusually good pavements. Over seventy percent are in excellent or very good condition.” [Also see “WISLR tools” story page 6.]
“I HEARD at a couple of meetings that the new MUTCD says we can’t use yellow paint to mark curbs for No Parking zones,” says Bruce Slagoski, City of Beloit Terrace Operations Supervisor. After reviewing the Manual he still wasn’t clear on the topic, so he asked the TIC for help.

We contacted our signing and marking expert, Tom Heydel, Traffic Operations and Design Engineer, WisDOT SE Region. He is also the instructor for the TIC Highway Safety Workshops, (February 28 – March 5 this year. See page 12). Here is his response:

According to Section 3B.21 of the MUTCD on curb marking: where curbs are marked they shall conform to the general principles of markings—that they should be white or yellow depending on the direction of travel they separate (Section 3A.04).

“In other words,” says Heydel, “if a median curb is painted it would be yellow since it separates opposing traffic, but an island curb at an intersection separating a right turn lane, where traffic on both sides is going the same direction, can either be painted white (since it may be next to a white channelizing line) or not painted at all. The island curb would not be painted yellow.”

Regarding no parking curb colors Section 3B.21 says:

Local highway agencies may prescribe special colors for curb markings to supplement standard signs for parking regulations. Remember, the signs are important because curb markings are frequently obliterated by snow and ice accumulation.

“The MUTCD does not specifically prohibit the use of yellow curb to designate no parking zones,” Heydel says. “Since No Parking curb marking is not installed with the intent of separating traffic flow, it is my interpretation that it can be painted yellow on roadways that are under your jurisdiction, even though it is on the right and may be next to a white edgeline.”

TIC to emphasize on-site work zone safety training

NEXT YEAR THE TIC will encourage local municipalities to sponsor on-site Work Zone Safety Training and will offer fewer regional workshops [see Calendar page 12].

“We have seen that the training is more effective when offered on-site,” says Steve Pudloski who coordinates the programs for the Center. “It’s economical, so more people can attend. The instructors can customize their presentation to the community. And when staff from all the departments that set up work zones participate they also talk to each other.”

In the spring of 2004 Wausau Insurance, which insures hundreds of Wisconsin municipalities, sponsored three on-site TIC programs as part of their loss prevention training for customers.

Traffic control safety programs often focus more on highway setups than city or village streets, notes Timothy Hoffmann of Wausau Insurance Loss Prevention who arranged for the programs. Training for low speed roads and city streets is also needed.
To arrange a date for your local on-site Work Zone Safety Training program contact Pudloski Pudloski@engr.wisc.edu, 608/262-8707, or see the TIC Web page.

“There’s a relatively low frequency of injury, but horrendous severity. It’s a person and a car. A person is always going to lose.”

At the 2004 on-site programs, municipalities brought in crews from parks, forestry, public works, and local law enforcement, too. If a community wants officers to provide enforcement, Hoffmann says, the officers need to be aware of both the work zone rules and the state statute as well as local ordinances that can be used authorize citations.

“It’s important that they work together,” Hoffmann says. “I saw that come together very well at a number of municipalities during the workshops.” Although employee safety is the first concern, municipalities also have to consider risk management and keeping costs down.

Since a properly laid out work zone is safer, incidents and insurance claims will likely be fewer. If there is a crash, the insurer is better able to recover damages and Worker’s Compensation costs from the negligent driver, and an injured employee has a stronger case in filing a civil suit.

Many local employees have time to attend safety training in winter and early spring, and the TIC workshop fits well within the standard work day. “Some communities bring us in for their Spring safety days,” Pudloski notes. “We could offer a shorter program, but spending the day talking with their co-workers about how to do it, using a familiar local street, that really helps them get it.”

“Offi- officers need to know work zone rules and ordinances to provide enforcement.

“There have been injuries or deaths to private contractors as well as municipal employees in low-speed traffic settings,” Hoffmann says. “There’s a relatively low frequency of injury, but horrendous severity. It’s a person and a car.”

2nd Place
City of Racine
Phil Bauer & Don Orosz

3rd Place
Manitowoc
Paul LaCroix & Kerry Krajnik (last year’s first place finishers)
Betterments are a variety of ordinary, low-tech activities designed to preserve the roads in good condition. This includes widening and strengthening shoulders, improving drainage, cutting back severe side slopes, and removing trees. The town generally does not change the road profile except in rare cases where drainage or vision is a serious problem.

One important way they get the most out of their roads budget is by planning ahead. They work under a rolling three-year plan. That gives them plenty of time to coordinate with utilities, consult with landowners, and request services and permits from the county. Resurfacing projects also have a three year cycle: Year 1 – Betterment; Year 2 – Pavement repair and first lift (asphalt leveling course); Year 3 – Top lift (asphalt overlay).

Betterments

“We noticed that the snow plowing budget has been going down,” says Walker. “That’s directly because of the betterment program.” TeStroete had recommended targeting roads that regularly needed extra service, like a second pass with the plow and salt truck.

“We concentrated on roads that would cut down on maintenance costs. You’d be surprised. You can recover your costs very quickly if you can eliminate those annual expenses,” says TeStroete.

Betterment includes removing trees that are too close to the road. Taking out trees clears a hazard from the roadside and helps extend pavement life by getting rid of shade that keeps ice on the road.

Cutting down high roadside banks that are snow catchers and improving shoulders is another betterment action. Shoulders are widened for safety, flattened for easier maintenance, and strengthened to extend pavement life. Rebuilding helps hold the road in place. When there is no shoulder, the edges start to break down.

In the hilly terrain they save money on shoulder projects by doing “cut and fill”: cutting back high banks at the top and pushing the extra material down to fill in lower spots. “We are actually doing two improvements at once,” says TeStroete.

Ditches are reshaped to improve drainage and create flatter, safer foreslopes. Culverts are extended to eliminate drop-offs; and concrete headwalls that project above the roadway are eliminated, removing more crash hazards. Utilities are relocated to the outside edge of the right of way.

With hazards gone and roadsides improved, the town roads are safer for all drivers, easier to mow in summer, and faster to plow in winter.

Working with adjacent landowners

The spring before a betterment project, all affected property owners are invited to a meeting.
Board members, construction people and TeStroete explain the project, show before and after photos of past projects, and describe the impacts on property owners. Useful pamphlets explain issues like right-of-way and road hazards to landowners. [See Resources page 10].

The meeting covers drainage problems, driveways, field entrances, and vision corners. Where possible the town offers to move field entrances to safer locations, like the top of a hill. They propose to improve drainage by installing or expanding driveway culverts and changing the slopes. The changes will keep both the road and the driveway dry and strong.

Landowner benefits are important. “Certain things we can do will make it better for them, and it doesn’t make the project cost more,” says TeStroete. For example, adjacent landowners usually appreciate having a flatter, wider lawn area next to the road where they can use a riding mower instead of a hand one, he says. Also, if owners want to keep a particular tree, the town tries to respect that wish.

**Improving drainage**

Dry roads last longer, as everybody agrees, but when drainage blocks are on private land, the problem is harder to resolve. At the same time, rule changes and DNR regulations have made it difficult for owners to dredge or maintain a waterway that runs through their property. One or two town betterment projects have tackled that challenge.

“They’ve worked with private property owners, the County Land Conservation department, and DNR to assist with maintaining drainage-ways through properties,” says Sheboygan County Highway Commissioner Roger Laning. “It’s unusual. So many times the government entity is reactive. It’s refreshing to see a township be proactive.”

One problem spot was on Foster Road, in the eastern part of the township. A drainage ditch on private land was silted in, causing water to pond on the road and to build up ice in winter. Environmental regulations made it difficult and expensive for the owner to clear the ditch, because he was required to haul away the fines rather than leave them along side the ditch. When the town cleared the ditch they were able to use the material to build up a nearby shoulder.

“They put together a plan; they’ve stuck to it; and it has paid dividends.”

continues on page 6
“It was refreshing to learn that this is pretty well done. The past board and Roger deserve a pat on the back. And now we can go forward.”

Improving drainage preserves roads. Having three-year plans helps the town successfully apply for county bridge aids.

The farmer was real receptive because it improved his ability to farm his field,” says TeStroete. “We had to go partly on his field to do it, but once we cleaned the ditch properly and put in new pipe, the water could get away.

Planning ahead

“With their betterment program, which has been ongoing for nine years, they plan ahead several years,” notes the TIC’s Don Walker. “This allows time for coordination with utilities, securing permits, and working with landowners.” They replace culverts a year or so before improving the surface. This gives the soil time to settle through one or more frost cycles. Crack sealing, surface repairs, and a first lift of asphalt all are done a year ahead.

Over the years town board members have actively contributed ideas and selected projects for the long-range plans, with suggestions from TeStroete. Knowing what is coming up means they can act quickly to apply for county bridge improvement aids. This cooperative fund is available to pay half of a township’s costs to improve large culverts and bridges.

“Past boards have been very aggressive about trying to maximize that money,” says TeStroete. “The town chair or road committee chairman has to sign paperwork to apply, then you receive the money in the next budget year, when the work is done.”

Plenty of lead time also lets town officials use county resource staff effectively. The County Surveyor provides hydraulic analysis for all larger culvert and bridge projects, for example, and the county Ag agents and SCS staff help with drainage and erosion control projects. “They have a good relationship with the county and take every advantage of their resources and assistance,” notes Walker.

County Highway Commissioner Roger Laning sums it up: “They have forward-looking professionals who are aware of various programs out there like the schools that the TIC puts on,” he says. “They’ve established a balance of the various roadway maintenance operations and don’t focus on one over another. They put together a plan, and by God they’ve stuck to it, and it has paid dividends. They have been able to show that the plan has worked.”

Town Chairman Don Becker is relieved. “I was expecting to hear that there might have been some problems requiring a lot of work and maybe taxpayers’ money to fix,” he says. “It was refreshing to learn that this is pretty well done. The past board members and Roger deserve a pat on the back. And now we can go forward.”

As they work on next year’s budget, the evidence is solid. They have a high quality road system. There is no need for big increases to fix unexpected problems. And they are on track to stabilize or even reduce future pay-outs for pavement improvements.

New WISLR tools improve pavement planning

THE WISCONSIN SYSTEM for Local Roads (WISLR) unveiled new pavement analysis tools in November. The on-line tools help you look at your community’s pavement needs today, develop a five-year improvement and maintenance plan, and evaluate how different budget decisions and project selections will affect future road conditions and budgets.

“It’s very flexible and easy to use,” says TIC staffer Steve Pudloski. “It is better than the old PASERWARE because it is tied directly to the WISLR database. Road managers can update their road inventory data and modify pavement sections at the same time as they do pavement analysis.” Pudloski had been responsible for teaching PASERWARE, the TIC’s pavement analysis software, and consulting with local roadway managers on how to use it. More than 600 communities were using the program when it was discontinued last spring.

Four WISLR enhancements are especially notable.

• WISLR uses budget dollar amounts instead of average road system ratings to describe current pavement condition, changes over time, and the backlog of needs not met.
• It offers a project list that usually optimizes your budget by giving priority to preventive maintenance.
• It uses real deterioration data from Wisconsin roadways to predict pavement life.
• It creates a series of maps that show current pavement conditions, the projects selected for each year of the 5-year plan, and the type of projects selected, such as sealcoats, resurfacing, etc.
Needs in dollars: Town of Holland case study

What if elected officials cut the maintenance budget this year? How much will it cost in 2010? WISLR's Needs Analysis charts (see above) can give answers in dollars—a measure that is easier to understand.

Last year, for example, some Town of Holland residents suggested that the Town Board was spending too much on roads [see related story, page 1]. Were they right or wrong? Pudloski applied the WISLR Needs Tools to Holland's real budget information and 2003 condition data to show the effects of budget cutting.

“They start out with an exceptionally good system,” says Pudloski. “Cutting the pavement maintenance budget back to $50,000 from $87,000 causes the backlog of need to grow, but doesn’t have a big effect in five years. Keep it up for ten years, though, and I don’t think the system will be as good.”

The table below shows the 5-year costs and impacts of the two budgets. Spending 47% less each year nearly doubles the backlog of need, but the total projected cost difference is minimal: just $27,391.

“Cutting the budget now means that they will be living with that $500,000 backlog for a long time,” says Pudloski. “However, if they keep spending at the higher level for five years, then they can start cutting back their maintenance budget in the next five years.”

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New WISLR tools
continued from page 7

“In a few years they will be paying big bucks for rebuilding. It costs four or five times as much to reconstruct a road as to resurface it and ten times as much as crack sealing and seal coating.”

Getting started.
Getting help.
For those who need help getting started with WISLR tools and understanding what to do with the reports, the TIC will hold workshops in May. You can learn to use the WISLR tools in time to develop your 2007 budgets. Watch for dates and locations in the Spring 2006 Crossroads.

“We always said that preventive maintenance would extend pavement life, and now WISLR has hard data to prove it.”

Notice that under the smaller budget pavement condition deteriorates slightly compared to 2003 and more compared to the $87,000 scenario. The percent of roads that will need no maintenance drops from 21% to 19%. The percent that will need resurfacing (rated 3-4) goes from 10% to 7%, instead of to 0%. As the town continues to put most of its budget into protecting their best roads, more pavements will slip into the lowest category.

“If in a few years they will be paying big bucks for rebuilding,” says Pudloski. “It costs four or five times as much to reconstruct a road as to resurface it and ten times as much as crack sealing and seal coating.”

Using dollar amounts to project road system changes makes it easier for everyone to see and appreciate how today’s decision will affect the budget a few years down the road. The WISLR tools use 2003 costs from asphalt contractor bids. The projections use the same prices for each future year. Contrasts are more direct, but inflation is not included.

Budget-stretching plans
WISLR’s needs analysis tools will automatically give you a very cost-effective five-year project plan. It uses a relatively simple priority system that emphasizes prevention to protect your roadway assets. Roads rated as a “7–Needs routine crack filling” get highest priority, followed by “6–Could sealcoat,” and so on down the pavement ratings.

The plan also moves projects on major roads ahead of similar ones on minor roads, followed by local, and low use ones. The system uses the state functional classifications for this part of the analysis, but you can, and probably should, change a road’s priority by assigning local importance categories.

“The system is very flexible,” says Pudloski. “You can easily change the unit costs for each type of project to fit local experience. You can run alternative scenarios with different budgets and different project selections. You can even change the cost estimate for a specific road project. The interface is very easy to use. Anyone who has ever used PASERWARE will certainly have no trouble with it.”

Output can be maps that are color coded by project and year, or by kind of project. You can also put the selected project list into a spreadsheet on your own computer.

Realistic pavement life
Some of the best news to come out of the WISLR database is that Wisconsin pavements have long lives. They are lasting in better condition for many more years than the PASERWARE pavement deterioration model had predicted. Properly designed, constructed and maintained hot mix asphalt roads are likely to last about 35 years before they need resurfacing and 50 years or more before needing to be rebuilt. Wisconsin communities are reaping rewards from sealcoating, chip sealing, and crack filling newer roads, and resurfacing, when appropriate, in the middle to later stages of a pavement’s life.

“We always said that preventive maintenance would extend pavement life, and now WISLR has hard data to prove it,” says Pudloski. “Using Wisconsin’s experience makes WISLR’s pavement improvement plans and budget projections very realistic.”

For everyone who struggled to get pavement rating data into the WISLR database in 2001 and 2003, here’s your reward: simple, flexible tools that analyze your road system needs, report them in dollars, show the consequences of budget changes, and recommend projects that maximize your maintenance budget. Spreadsheet and map outputs can easily be converted into working documents for next year’s projects.

As a bonus, if you enter your 2005 ratings online, you can work with current conditions right away. There’s no delay for loading time, and reports are ready immediately.

Submit 2005 pavement ratings by December 15
Since many folks wait until the last week or two to submit their pavement ratings, here are some reminders.

There are three ways to submit ratings:
• online, directly in WISLR, using the WEB-WISLR Pavement Rating Entry Screen (WisDOT preferred method)
• the “On/At Pavement Rating Spreadsheet—electronic version”
• the “On/At Pavement Rating Spreadsheet—paper copy”

“Users who want to submit on spreadsheets can download them from the WEB-WISLR Pavement Rating Entry Screen. They should save to a file (electronic) or print out a copy. They can also call me,” says Crystal Van Wolderen, WISLR Pavement Rating Coordinator.

Getting on WEB-WISLR for the first time is easy, but it takes a couple steps. Brochures telling how to gain access were sent with the WISLR pavement packet in May.

If you don’t have the May pavement packet and have not been on WEB-WISLR before, follow the WISLR link below, or get information from the TIC Web site. It has links to two brochures in pdf form which include descriptions of how to get first-time access:
http://tic.engr.wisc.edu/links.html#WISLR

To request pavement rating spreadsheets, contact Crystal Van Woelderen at 608/266-7135 or by e-mail: downloadinfo@dot.state.wi.us

To gain first-time access to WEB-WISLR, follow the instructions under the heading “How to access and get started using WISLR” at the following Web address:

New solution for sinking surfaces over softest soils

**SAGGING BRIDGE** approaches and stretches of “corduroy” roads can be a major headache, and not just for drivers. When it is time to rebuild or expand a problem roadway over compressible soils, there’s a new option. Instead of the traditional cut and fill, you could build on “plastic”—actually construction-grade geofoam blocks.

The blocks are made of expanded polystyrene (EPS), the same material used for rigid insulation. They come in a variety of sizes, most typically 40” x 48” x 96”, and look like giant Legos. The blocks are strong but weigh less than 2% of the same volume of rock or soil. Since a standard block weighs about 100 pounds, two workers can lift and place it by hand. Being uniform size, they are quick to fit together. A hot wire or a chainsaw will easily make culvert cuts or shape an end if the manufacturer does not supply custom shapes. EPS geofoam, which is the same material as a foam coffee cup, is completely inert and environmentally safe. The polystyrene includes no ozone-damaging fluorocarbons or hydro-fluorocarbons.

“It has been used for more than 30 years under roads and airport runways. Even so, many civil engineers, road builders, and communities are just starting to hear about it,” says Doug Wehrwein of Plymouth Foam, Inc. in Plymouth, Wisconsin.

The earliest project was in 1972 under a road in Norway. Since then it has been used as ultralight weight fill for roadways, for floor leveling within a building, to support airport taxiways, and even to support an entire building on substandard soils. In Salt Lake City, Utah, 110,000 cubic meters of geofoam was used in the reconstruction of I-15 before the 2002 Winter Olympics. The project won a prestigious national engineering award.

One of Wisconsin’s first highway geofoam projects was the reconstruction and raising of bridge approaches on CTH DR near Delafield in Waukesha County. The project, which crossed a narrow strip of calciferous lake marls between two lakes, was further restricted by large transmission lines and towers and other utilities crowding the constricted right-of-way. Geofoam reduced the weight burden on the underlying soil by more than 7.5 million pounds, saving the considerable time and cost of digging out the soil and replacing it with stone. Finished in May 2003, the approaches have experienced some settling.

“I’d say we have had mixed results,” says Gary Evans, Manager of Highway Engineering for Waukesha County. “There’s been some settlement, but we don’t know if it was in the marls at the lake bottom due to the extremely dry summer.”

A similar situation faced builders of the last stretch of Boston’s “Big Dig” in late 2005. Foam blocks were placed under parts of eight

“...it has been used for more than 30 years under roads and airport runways. Even so, many civil engineers, road builders, and communities are just starting to hear about it...”
New solution for sinking surfaces over soft soils
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off-ramps in the South Bay interchange. Geofoam construction was much faster than the alternative: sinking concrete pilings through soft soils into the bedrock. It saved money too, costing more than a soil embankment but less than the concrete.

Geofoam is the leading contender for a May 2006 project on State Highway 67 in Walworth County. “The proposed road widening will be in a marsh over sphagnum soils that will keep compressing,” says Jessica Lewis, Senior Project Engineer, with Crispell-Snyder in Lake Geneva. “The estimated settlement in that area could be as much as 19 inches,” she says. The cost estimate for building with geofoam is $280,000, compared to $370,000 for excavating the poor soils. Excavation would also require relaying a water main and a force main and would be limited by right-of-way acquisition.

Problems? Limitations?
Using geofoam is sometimes the only solution and has relatively few drawbacks, says Doug Wehrwein. “The biggest issue is the lack of familiarity. People just don’t believe it’s possible to build roads on foam blocks.” Some concerns include:

Geofoam’s cost will fluctuate by right-of-way acquisition. Petroleum products like diesel fuel will act as a solvent and eat away the blocks. To guard against a possible fuel spill on the overlying roadway, construction crews install a petroleum barrier, commonly 6 mil plastic sheeting.

Flame retardants are added during manufacture, protecting the blocks should they somehow be uncovered and exposed to fire.

Stockpiled blocks at a construction site could be blown away by sudden high winds. It happened recently in Michigan during a thunderstorm. On road projects,
though, the blocks go down very quickly and are usually covered by fill as soon as they are laid.

As with any project, good engineering design and quality construction are essential. For example, a high water table won’t make the blocks float and pop out of the ground if they are covered with the proper amount of overburden or are mechanically anchored. On steeper slopes, the blocks should be pinned together with gripper plates or rebar.

On sites with deep layers of squishy or slippery soils, geofoam is a useful construction tool. Just ignore the jokes about being too old to play with blocks.

### Fuels and Vehicle Technologies for Improved Energy Efficiency


### Tire Retread Information Bureau


### State of Wisconsin VendorNet

Procurement contracts including contracts eligible for Municipal Cooperative Purchasing are listed at: [http://vendornet.state.wi.us/vendornet/procman/prob2b.asp](http://vendornet.state.wi.us/vendornet/procman/prob2b.asp)

Includes contracts for tires and fuel. The site also has links to other cooperative purchasing programs in Wisconsin.

### Videotapes/Multimedia

  - Explains how retroreflectivity improves signs and pavement marking. A range of driving scenarios shows the need for reflective features. Useful for the public, law enforcement officers, and elected officials.

  - An interactive CD for staff who use liquid chemicals for anti-icing. Computer-based, hands-on learning on understanding weather forecasting, using forecasts, and applying anti-icing chemicals. The seven lessons could be completed in one long session or over several days depending on schedule.

  - Interactive 2-CD set provides information on the Endangered Species act as it applies to highway construction. Includes case studies and video of projects.

  - Presents winter road driving techniques using a test track to demonstrate automobile handling. Also covers preparation, tires, steering, braking, and trajectory.

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  - Presents winter road driving techniques using a test track to demonstrate automobile handling. Also covers preparation, tires, steering, braking, and trajectory.

### Contact Information

For more information on using geofoam contact:

Plymouth Geofoam at 800/669 1176, or [www.plymouthfoam.com](http://www.plymouthfoam.com).

Jessica Lewis, Crispell-Snyder, Inc. at 262/348-5600; email LewisJ@crispell-snyder.com.

Gary Evans, Waukesha County Highway Engineering, 262/548-7746; email gevans@waukeshacounty.gov.
### FEEDBACK

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### Wisconsin Transportation Information Center

University of Wisconsin–Madison
432 N. Lake Street Room 805
Madison, WI 53706

### CROSSROADS

Wisconsin Transportation Information Center
University of Wisconsin–Madison
432 N. Lake Street Room 805
Madison, WI 53706

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### CALENDAR

#### TIC Workshops

Details, locations and registration forms are sent to the CROSSROADS mailing list before each workshop. Get additional workshop information and register by calling 800-462-0876 or going online at [http://tic.engr.wisc.edu/enroll.html](http://tic.engr.wisc.edu/enroll.html)

**Work Zone Safety & Flagger Training**

For road supervisors and maintenance personnel who plan or set up work zones. Covers traffic control devices, parts of a work zone, and a variety of set-ups, including mobile and flagging operations. Participants set up work zones using the Wisconsin Pocket Guide to Workzone Safety & Flagger’s Handbook. [Also see page 2 and On-site Workshops below]. Fee: $45

- **Feb 27** Tomah
- **Feb 28** Eau Claire
- **Mar 1** Cable
- **Mar 2** Rhinelander
- **Mar 3** DePere
- **Mar 6** Milwaukee (Brookfield)
- **Mar 7** Barneveld

**Road Maintenance & Rehabilitation**

An updated workshop on maintenance and rehabilitation of city streets, town roads and county highways. Emphasizes major repair, rehabilitation and reconstruction. Includes the latest techniques with examples of Wisconsin projects. Fee: $45

- **Mar 27** Tomah
- **Mar 28** Eau Claire
- **Mar 29** Hayward
- **Mar 30** Rhinelander
- **Mar 31** DePere
- **Apr 3** Barneveld
- **Apr 4** Wausau

**Highway Safety**

Reviews basics of signing and marking, highlights good sign installation and maintenance practices. Learn to identify roadside safety hazards and use crash information to improve the safety of local roads. Fee: $45

- **Jan 10** Eau Claire
- **Jan 11** Barneveld
- **Jan 12** Milwaukee (Brookfield)
- **Jan 13** DePere

**Local Transportation Issues – Driving the Road Permitting Process**

WisLine Teleconference, Jan. 12, 1:00-2:50 pm. A panel of experts reviews permits needed for local road projects and how to get them. To register click the Teleconference link on TIC Workshops Web page or contact your local Extension office.

**On-site Workshops**

Save time/travel costs by scheduling instruction at your location at a time convenient for you. Ask instructors to tailor content to your specific needs. Train more staff for the same or less cost— including from other municipal departments, nearby communities, or businesses you contract with. Some onsite workshops:

- **Basic Surveying for Local Highway Departments**
- **Basic Work Zone Traffic Control**
- **Flagger Training**

Contact TIC early to ensure getting the program you need on the date you want. Details on TIC Web page.

**Other opportunities**

**Pesticide Applicator Training (PAT)**

is offering live training and testing for Right-of-Way pesticide applicators from 8 am to 2 pm on:

- **Feb 22** Waukesha, Carroll College
- **Feb 23** Wausau, Marathon Co. Ext. Office

Register by [February 8](http://epd.engr.wisc.edu)

Go to [http://ipcm.wisc.edu/PAT/](http://ipcm.wisc.edu/PAT/) for course details, pre-registration forms, information on videos and CD-ROMS for self-study, and order forms for training manuals. You can also register with your County Extension office; call Rose Scott (608/262-7588), or e-mail PAT-program@facstaff.wisc.edu Advance registration is required; walk-ins cannot be accommodated.

**UW–Madison seminars**

Local gov’t officials can request a scholarship for the following Engineering Professional Development courses—details at [http://epd.engr.wisc.edu](http://epd.engr.wisc.edu) or 800-462-0876. Courses are in Madison unless otherwise noted.

**JANUARY 2006**

- 9-10 Improving Public Works
- 11-12 Construction Inspection Skills
- 25-27 Foundation Engineering

**APRIL 2006**

- 3-4 Municipal Engineering Fundamentals for Non-Engineers
- 5-6 Preparing an Effective Municipal Capital Improvements Plan
- 24-26 Effective Roadway Lighting
- 24-26 Channels and Culverts, Designing Storm Water Open Conveyance Systems

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