TECHNOLOGY NEWS

Iowa's Local Technical Assistance Program (LTAP): providing transportation technology transfer for Iowa's cities and counties

January–February 2001

It's here! (well, almost) MUTCD: Millennium Edition

Tom McDonald, Safety Circuit Rider

THE MILLENNIUM edition of the *Manual on Uniform Traffic Control Devices* (MUTCD) has finally been published on the Internet, but actual implementation is still some time off. The new manual will be published in a three-ring binder format and will offer many new features, including presentation in both English and metric units. Many revisions, some quite substantial, have been made that will affect local signing and pavement markings. Following are some highlights.

Revisions to the MUTCD

The millennium edition of the MUTCD contains changes to Part 2, Signs, such as revised explanations for stop and yield sign applications and for curve and turn sign usage. The manual includes new warning signs, as well as changes in pedestrian and school signing.

Part 3, Markings, presents use of a new blue color, changes in center line and edge line marking requirements, and new markings for such applications as speed humps and advance yield locations.

Part 6, Temporary Traffic Control, also includes some revisions in guiding principles, locations, new regulatory and warning signs as well as other devices, temporary markings, and duration of use. Two new typical applications have been added, and almost all others have been revised to some extent.

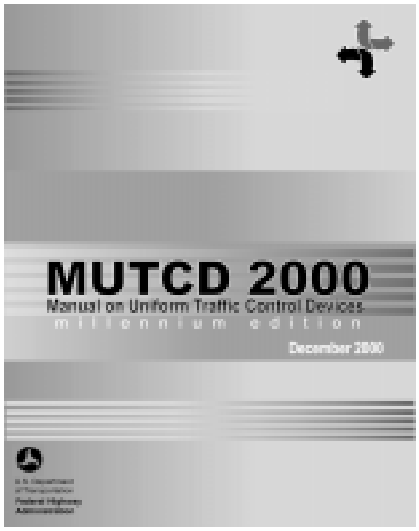
MUTCD additions and omissions

Two new sections have been added to the millennium edition of the MUTCD. Part 5, Traffic Control Devices for Low-Volume Roads, should be of high interest here in Iowa, but Part 10, Traffic Controls for Highway-Light Rail Transit Grade Crossings, probably won't have much application here for a few years, at least.

Minimum retroreflectivity standards for both signs and markings are still under consideration and are not included in the new edition.

Effective date

Although the new MUTCD will be adopted in the near future, the FHWA will allow a phase-in period of two years for state and local agencies,



MUTCD...continued on page 2

Attend the Millennium MUTCD videoconference, March 20. See page 2.

Preparation of this newsletter was financed through the Local Technical Assistance Program (LTAP). LTAP is a nationwide effort financed jointly in Iowa by the Federal Highway Administration and the Iowa Department of Transportation. The mission of Iowa's LTAP: To foster a safe, efficient, environmentally sound transportation system by improving skills and knowledge of local transportation providers through training, technical assistance, and technology transfer, thus improving the quality of life for Iowans.

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MUTCD videoconference: learn from national experts

THE MILLENNIUM MUTCD Videoconference will be held in Ames on March 20 from 10:00 a.m.–12:30 p.m. in Room 179 of Iowa State University's Scheman Building. The live satellite broadcast, hosted by the American Traffic Safety Services Association, will focus on recent changes and updates to the *Manual on Uniform Traffic Control Devices* (MUTCD).

The changes and updates will be presented in the nationwide broadcast by the Federal Highway Administration (FHWA) representatives who drafted the new MUTCD. Panel members will also hold a live question-and-answer session via toll-free phone lines that will be in place at the videoconference sites.

The broadcast is being brought to the Ames videoconference site through the sponsorship of the Iowa Department of Transportation, the Center for Transportation Research and Education, and Iowa's Local Technical Assistance Program's Safety Circuit Rider.

Because the FHWA is underwriting the costs associated with the videoconference, attendance fees will not be charged. However, registration is required. For more information contact Sharon Prochnow, 515-294-8103, prochnow@iastate.edu.•

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and some applications may have phase-in periods of three to 10 years.

For more information

A recent session at the annual meeting of the Transportation Research Board (TRB) in Washington, D.C., addressed the status of the new MUTCD and offered some insight on what to expect in the future for this important document. Copies of the TRB presentations can be found on the web at http://transops.tamu.edu/. Or you can contact Tom McDonald, 515-294-6384, tmcdonal@iastate.edu. •

Other MUTCD training opportunities

TRAINING workshops on the MUTCD changes will be offered through the Iowa Department of Transportation and Iowa's Local Technical Assistance Program. Workshops are expected to begin late this summer.. Eight-hour and four-hour training workshops will be offered, in addition to 90-minute executive sessions. The varied formats will give transportation personnel the opportunity to attend the training best suited to their needs.

Locations of the training workshops have not yet been decided. Any local transportation agencies, schools, enforcement professionals, or others with an interest in traffic control devices and pavement markings can get more information on scheduling millennium MUTCD workshops by contacting Tom McDonald at the Center for Transortation Research and Education, 515-294-6384, tmcdonal@iastate.edu.•

MUTCD distribution

THE MILLENNIUM edition of the MUTCD is accessible on the web at http://mutcd.fhwa.dot.gov, but the document is still not final so downloading the 1,000 pages might not be advisable at this time. In addition, it is expected that several pages of errata will be published after final adoption in the near future.

For actual distribution, the Federal Highway Administration expects to furnish two hard copies of the manual to their regional offices and one copy to each state department of transportation. All other distribution will be over the Internet or through organizations such as the American Traffic Safety Services Association, which will publish the full manual. Cost of hard copies is expected to be approximately $100 each. A copy of the manual will also be available for loan through CTRE's LTAP library. •

An Iowa guide to traffic control devices and pavement markings

THE MUTCD is the ultimate authority for using and placing traffic control devices and pavement markings. Even in its new, more convenient format, however, Iowa's cities and counties may find the millennium edition of the MUTCD bulky, cumbersome, and full of information they don't need. Under sponsorship of the Iowa Highway Research Board (TR-441), CTRE is therefore developing a streamlined guide specifically for Iowa's local governments.

Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties, due for publication late this spring, will comply with the millennium edition of the MUTCD. •

Determining capacity of Iowa's precast concrete deck bridges

This article is third in a series exploring low-cost bridge replacement alternatives.

SEVERAL HUNDRED precast concrete deck bridges, which were built in the mid 1950s, are still in service on Iowa's secondary roads, and many of these are experiencing significant deterioration. Typically that deterioration is in the form of longitudinal cracking at the level of the reinforcement, says Terry Wipf, Iowa State University professor of civil and construction engineering. When deterioration like that is discovered, a load limit needs to be posted on the bridge.

Because of the loss of bond strength due to this deterioration, engineers can't accurately estimate the capacity of a deteriorated precast concrete deck bridge. There aren't any methods for determining the effect of the reduced bond strength on the flexural strength of the bridge. However Wipf , Wayne Klaiber, an ISU professor of civil engineering, and Ann Sardo, an assistant professor of civil engineering, are conducting research that may provide some answers for this particular type of bridge.

Wipf, Klaiber, and Sardo are currently evaluating the strength of deteriorated precast concrete deck bridges through field and laboratory testing. The ultimate purpose of their research is to determine the capacity of deteriorated bridges in order to a) provide data and/or criteria for rating such bridges and b) investigate methods for strengthening these bridges in order to extend their service lives.

The field testing portion of the project was completed last summer; four different bridges were tested. Diagnostic load testing was completed to determine the bridges' capacities.

After the field testing, several of the precast units from a bridge in Cedar County near Bennett, Iowa, were transported to ISU for laboratory testing. Some of the elements were tested to failure to determine their flexural strength. Four of the precast elements were reassembled and service load tested to learn more about the load distribution in this type of bridge. Currently a post-tensioning strengthening system is being tested on the laboratory bridge.

Once this research project (Iowa Highway Research Board project TR-440) is complete at the end of this year, *Technology News* will publish the results. •

Iowa Department of Transportation

CTRE
Center for Transportation Research and Education

IOWA STATE UNIVERSITY

Dry sand on winter roads provides little benefit

Any benefits are temporary unless steps are taken to make the abrasives adhere to the snow or ice surface.

FRICTION or traction gains from sanding winter roads are minimal. This is one of the preliminary conclusions of research conducted by Wilfrid A. Nixon, professor and research engineer at the Iowa Institute of Hydraulic Research, University of Iowa. Nixon developed his conclusions and recommendations for the use of abrasives in winter maintenance by analyzing several studies.

What we've known for 50 years

For decades, winter road maintenance in the United States consisted mainly of plowing and spreading sand or other abrasive materials intended to increase friction between vehicles and the snow- or ice-covered pavement. However, as early as the 1950s, studies conducted in Germany indicated that sand was swept from snow-covered highway surfaces after only 10 to 12 vehicle passes.

A more recent study in Ontario showed that at low temperatures (below 5º F or –15º C) the friction gains due to application of abrasives were substantially reduced by the passage of relatively light traffic consisting of five to 10 vehicles and three to five logging trucks.

The Ontario study also showed that high abrasive application rates had to be used to obtain appreciable gains in friction. The table below shows the results of one series of tests performed on hard packed snow under cold conditions (below 5º F or –15º C). The stopping distance is that required for a passenger vehicle with an initial speed of 25 mph (40 kph).

Although traffic did not reduce the effectiveness of abrasives so dramatically at warmer temperatures, a major finding of Nixon's study is that, even at warmer temperatures, abrasives have little friction enhancing value on a road with any substantive level of traffic. Any benefits are temporary unless steps are taken to make the abrasives adhere to the snow or ice surface.

Recommendations

In developing recommendations for abrasive use, Nixon has considered five different road types (see sidebar) and two different types of abrasive application—dry abrasives (deicing chemicals may have been added in small quantities to the stockpile to avoid caking) and abrasives that have been pre-wet with liquid deicers at the spreader or tailgate.

Applying recommendations to current practice in Iowa

A detailed survey conducted by Wilfrid Nixon and Norman Foster in 1996 examined use of abrasives and other winter maintenance practices for all 99 Iowa counties and the 30 largest municipalities in Iowa. The amount of sand used in a typical winter for these agencies ranged from zero to 26,000 tons. The average number of paved miles of road for each agency was 219, versus 635 miles of unpaved road.

The average application rate (over the whole winter) per lane mile of unpaved road is 9,050 pounds or 2,550 kilograms per lane kilometer (kg/lkm). Assuming an application rate of 1,240 to 1,775 pounds per lane mile (350 to 500 kg/lkm), this suggests about five to 10 applications of abrasives each winter over the whole network. Of the 88 agencies responding to the survey, fewer than 10 indicated that they were using pre-wetting of sand in the truck, but most agencies pre-wet sand stockpiles to avoid caking.

On paved roads, a number of agencies use salt/sand mixes except in very cold conditions or when

	Untreated Roadway (hard-packed snow cover)	Treated Roadway (freshly applied abrasive—1,065 lbs. per lane mile or 300 kg per lane)	Treated Roadway (following light traffic)
Friction Factor	.18	.40	.23
Stopping Distance	115 ft. (35 m)	52 ft. (15.7 m)	97 ft. (29.5 m)

drifting is a possibility. In these situations, the salt will act as a deicer and eventually remove or diminish the snow-pack or ice cover. Nixon says it would be better to apply such mixtures pre-wet at the spinner because they will stay on the road after application and the pre-wet with brine effectively "jump starts" the melting process.

On low speed paved roads with either high or low volumes, pre-wet materials will stay on the surface longer than dry materials.
Photo courtesy of Wilfrid Nixon.

Contact information
Nixon's report was sponsored by the Iowa Highway Research Board (TR-434). For more information, contact Wilfrid Nixon, 319-335-5225, wilfrid-nixon@uiowa.edu. •

Because speeds on high volume paved roads will typically be in excess of 43 mph (70 kph), pre-wetting abrasives will ensure that they stay on the road for a much longer period than dry abrasives will.

Abrasives on five road types

IN HIS STUDY, Wilfrid Nixon considered five road types.

Abrasives on high volume paved roads
Because speeds on these roads will typically be in excess of 43 mph (70 kph), pre-wetting abrasives will ensure that they stay on the road for a much longer period than dry abrasives will. Pre-wet abrasives can also melt into the snow-pack surface to provide a more lasting increase in road surface friction.

Low volume paved roads
Although the reduction in the friction enhancement of abrasives will occur more slowly than on a high volume road, pre-wet abrasives will stay on the pavement longer.

Low speed paved roads (high or low volume)
In many urban areas there may be significant lengths of roads with high traffic volumes but relatively low vehicle speeds of less than 31 mph (50 kph). Again, pre-wet materials will remain on the road surface longer than dry materials.

Unpaved roads
Deicing chemicals are not used on gravel roads as they may cause the pavement base to thaw and become unstable. The only option is to apply dry abrasives.

Urban intersections
Since these are not high-speed traffic areas, dry abrasives could be used, but pre-wet abrasives will remain in place longer. •

Modern roundabouts can serve a city's current and future needs

MODERN roundabout intersections are starting to be considered as solutions to traffic problems at existing intersections. Roundabouts can also be effective in new designs such as the street network at the Airport Business Park. The Airport Business Park roundabout is located at the intersection of S.W. 28th Street, Rittenhouse Street, and Gannett Avenue in Des Moines.

"This was a brand new street system," says Mike Ring, principal traffic engineer for the City of Des Moines. "The area was undeveloped, and a roundabout seemed to fit the street network. It was something new that the city and the developer wanted to try." The roundabout was constructed and put into service south of Des Moines International Airport about a year ago.

The modern roundabout at the Airport Business Park south of Des Moines International Airport features colorful artwork and landscaping in the center island.

Roundabouts control traffic

A modern roundabout is a circular intersection designed to control traffic by routing it in only one direction—counter-clockwise—around a central island. Traffic entering the roundabout yields to traffic already in the circle. Roundabout traffic keeps moving without experiencing the delays and backups often associated with busy signalized intersections.

[Driver] decision making is easier because there's only one decision to make—is there a large enough space to enter the roundabout?

Ring says that, so far, the business park roundabout has experienced very low traffic volumes because the park is not yet developed. However, says Ring, "Traffic projections are very high, and the roundabout design was used because it would fit both present and future needs."

Gary Fox, traffic engineer for the City of Des Moines, agrees, saying that the city and the developer chose to design and construct the roundabout rather than install four-way stop signs that would need to be replaced by traffic signals once traffic volumes reached their projected levels.

Ring says that the business park roundabout was built larger than many roundabouts because quite a bit of truck traffic was projected for the intersection. The size of the inscribed circle, or outside diameter, is about 170 feet, and the diameter of the center island is close to 100 feet. The island has been landscaped, and colorful artwork has been placed in the middle of it.

Cost

Cost wasn't really a significant factor in the decision to build this particular roundabout because it was brand new construction, says Ring. He adds that retrofitting an existing intersection to a roundabout design would be a much more expensive project. He says the cost of this improvement was borne by the developer.

Ring says that if they had built a four-way stop sign intersection that later had to be upgraded to a signalized intersection, the city would be looking at "a cost of $100,000 to $125,000 just for the traffic signals. The pavement modifications would cost more than that."

Driver benefits of roundabouts

One of the main benefits of a roundabout compared to other methods of traffic control, says Ring, is the low speed (10–15 mph) at which traffic enters it. "There's less chance for injury-type accidents because people aren't driving 30 to 40 mph through green lights. Also, there's no chance of running red lights and causing crashes."

Lower speed is also listed by the Maryland Department of Transportation's State Highway Administration as one of the reasons that roundabouts have fewer accidents than other intersections. The 1992 video "Modern Roundabouts" identifies fewer conflict points and easier decision making as additional factors that make roundabouts safer.

The video explains that a driver entering a roundabout has to yield to only one traffic movement—the traffic already in the circle, to his or her –left. At a stop sign, a driver who crosses a road has to deal with two conflicting movements,

and a driver making a left turn has to deal with three conflicting movements. Decision making is easier because there's only one decision to make—is there a large enough space to enter the roundabout?

Some advice

Ring says that a consulting firm was hired for the business park roundabout project. He says that using a consulting firm is a good idea for cities planning to build their first roundabout because there are some unique design elements that city engineers might not be aware of.

For more information

For more information about Des Moines' experience with roundabouts, contact Gary Fox or Mike Ring at 515-283-4973.

Additional information about roundabouts, including the video mentioned in the article, is available for loan from the LTAP library at the Center for Transportation Research and Education. Contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu. •

Signing and divider islands encourage appropriate turning movements around a roundabout.

Web sites

www.ops.fhwa.dot.gov/wz/workzone.htm
The Federal Highway Administration's *Best Practices Guidebook* can be accessed at this site. The guidebook briefly describes best practices, specifies locations where they will be most effective, and gives contact information for each practice.

www.pavement.com/UTW/UTWCalc.asp
This site provides a calculator that helps users decide whether or not ultra-thin whitetopping (UTW) pavement is an option for their roadway rehabilitation projects.

www.naco.org/affils/nace/
The National Association of County Engineers offers a new online listserv that makes it possible for users to share information with county engineers across the country. To take advantage of this service, just click the registration button and complete the brief form.

www.iceasb.org/
The Iowa County Engineers Association Service Bureau web site provides a roster of county engineers, news about county road departments, online surveys, and contact information for suppliers and contractors.

www.roadcommerce.com/
This American Traffic Safety Services Association web site can help users find a wide variety of roadway safety products and services. Searches by product, service, or supplier name are possible. Links to the vendors' web sites are also provided.

www.ctre.iastate.edu/
The Center for Transportation Research and Education's web site provides links to the Local Technical Assistance Program (LTAP), the Iowa Traffic Safety Data Service, and the Center for Portland Cement Conrete Pavement Technology. Transportation-related publications and research reports, schedules for safety training workshops, and access to the LTAP lending library are also available.

Why experts are talking about foamed asphalt 40 years after its debut

EVIDENCE of a renewed interest in foamed asphalt was seen at a fall 2000 workshop in Ames where a demonstration of the technology was attended by more than 100 paving professionals from Iowa and other states.

A close-up view of foamed asphalt application.

Foamed asphalt, a technology developed in 1957, is used in the rehabilitation of pavements. The technology is receiving attention now, 40 years after it was originally developed, largely because new paving equipment has been designed for its application.

Before the reintroduction of foamed asphalt, the primary technology used for pavement rehabilitation was emulsion. Mike Heitzman, bituminous materials engineer, Iowa Department of Transportation (Iowa DOT), Ames, explains that asphalt alone is difficult to distribute thinly across a mixture unless it's heated. Either emulsion or foamed asphalt must be used to help the mixing process.

The foamed asphalt demonstration north of Ames allowed paving professionals from Iowa and other states to observe the new technology. Photos courtesy of the Iowa Department of Transportation.

Possible benefits and challenges

Heitzman says that one potential benefit of foamed asphalt is that less curing time may be required with a pavement rehabilitation application known as cold-in-place recycling because a foamed asphalt mixture requires less water than an emulsion mixture does. The potential of opening roads sooner is one major benefit the Iowa DOT is looking for in new technologies, Heitzman says.

According to Heitzman, county transportation agencies could see some advantages to using foamed asphalt. "They have a lot of rural pavement that can be appropriately rehabilitated with either cold-in-place recycling or full-depth reclamation," says Heitzman. "They could probably gain quite a bit by using foamed asphalt for cold-in-place recycling if there are curing advantages; a road wouldn't have to be closed as long."

When planning a cold-in-place project, Heitzman says that counties might want to consider the time factor before deciding which technology to use. If getting traffic back on the route is critical, foamed asphalt could be the best choice. If the road can stay closed for a week, cost probably controls the choice of which technology—emulsion or foamed asphalt—to use.

According to Heitzman, foamed asphalt should be a little cheaper than emulsion, but actual figures on cost effectiveness won't be available for some time. "Foamed asphalt technology expands the asphalt so that it covers more material than before," says Heitzman. "Asphalt that has increased in volume 20 times blends better with soils and aggregates."

The jury's still out

As for full-depth reclamation projects, Heitzman says it's uncertain at this point whether there will be an advantage in using one technology over the other. He says that the Iowa DOT will want to further investigate foamed asphalt for use in the state before making recommendations.

Heitzman says the Iowa DOT plans to watch the performance of the two foamed asphalt rehabilitation projects they currently have down in the state. One of them is the workshop demonstration area just north of Ames that used a full-depth reclamation application. The other project area, U.S. Highway 61 in eastern Iowa, was completed in 1999, using cold-in-place recycling. Heitzman says there was an improvement in curing time, but it's too early to tell how the surface is holding up.

Although there is quite a bit of difference in the way foamed asphalt and emulsion interact with the materials they're applied to, Heitzman says that testing has not yet been done to analyze those

differences. Heitzman says his philosophy is: "You try something and see if it works, and later you can go back and see why it worked."

One disadvantage he cited in using foamed asphalt is that it is essential to have hot asphalt cement supplied to the project because temperature is critical to the foaming. Also, he says that the availability of foamed asphalt equipment is still in question, but there's not much equipment in the state for emulsion, either.

For more information about using foamed asphalt, contact Mike Heitzman, 515-239-1003.•

Iowa traffic and safety info online

TWO PROJECTS related to traffic and safety in Iowa have recently been completed. The valuable information and products resulting from the projects are available from the Center for Transportation Research and Education (CTRE) web site.

The Traffic and Safety Informational Series contains answers to questions that are commonly asked by the public and city council members regarding traffic and safety. The goal of the project was to develop and provide clear and consistent material that can be modified by local transportation officials to fit the needs of their jurisdiction and then distributed to the public as appropriate. The series was funded by the Iowa Traffic Safety Fund and is available at www.ctre.iastate.edu/pubs/tsinfo/.

A recent study of red light running in Iowa examined the scope and impact of the problem and evaluated countermeasures, including automated enforcement. The project was sponsored by the Iowa Department of Transportation (Iowa DOT) Office of Traffic and Safety. The findings are available at www.ctre.iastate.edu/database/00000196.html.

Both projects were a joint effort of the Iowa DOT and CTRE.•

What is foamed asphalt?

FOAMED asphalt technology is a process that expands the surface area of the material to make it go farther. In the process, a small amount of water is added to hot asphalt cement to create a foaming action that makes asphalt mixable.

Heitzman explained the process by comparing the asphalt to egg whites. Raw egg whites don't mix very well with dry ingredients, but when the egg whites are beaten, they have greater volume and mix more easily with other ingredients. Asphalt works in much the same way.

Foamed asphalt technology didn't gain much acceptance after it was developed in the 1950s, mainly because there was no equipment available that could efficiently and economically apply the technology. In recent years, new equipment has been manufactured that makes foamed asphalt application easier and more practical to use.•

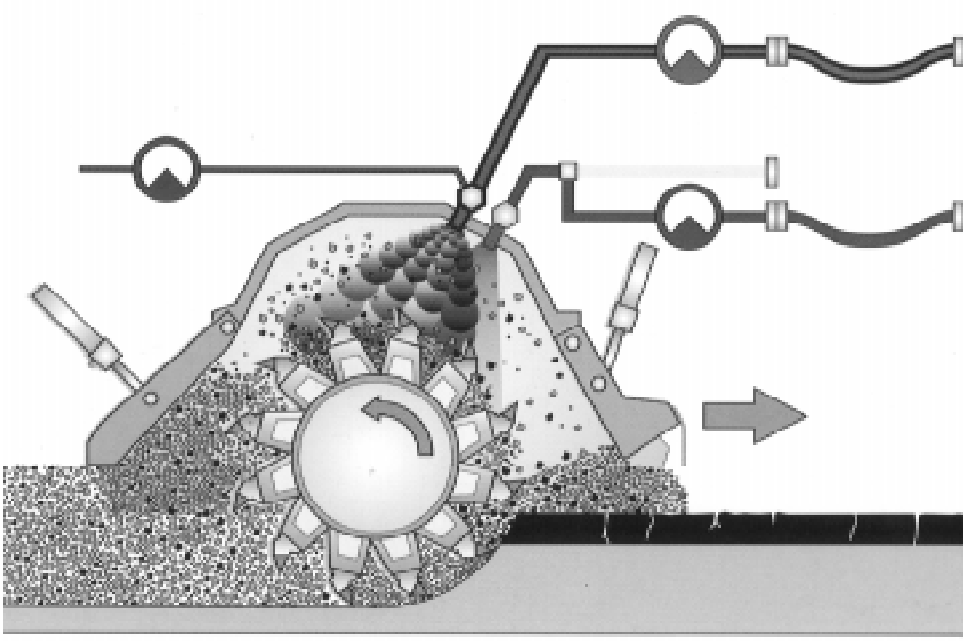

Illustration courtesy of Wirtgen GmbH.

Iowa's Pavement Management Program: an update

Omar Smadi, Pavement Management Specialist

This is another in a series of periodic articles updating Iowa's local government agencies on the progress of the state's pavement management program. Iowa's pavement management program (IPMP) covers all of Iowa's non-National Highway System (non-NHS) federal aid eligible roads under state, county, and city jurisdictions. The IPMP is managed by the Center for Transportation Research and Education (CTRE) under contract to the Iowa Department of Transportation (Iowa DOT). IPMP policies are set by the IPMP task force, a group of city, county, RPA, MPO, and Iowa DOT officials.

VISIDATA provides the ideal "vehicle" for driving your network without leaving your office.

IOWA'S PAVEMENT management program (IPMP), under development since 1994, has been in the implementation stage since 1999. The project's major tasks (GIS database, distress data collection, pavement management software, and distress data delivery) have been completed. Pilot training workshops on the GIS tools and dTIMS pavement management software began in 2000. More training workshops are scheduled for 2001.

The following sections will provide an overview of current work and also future plans for the IPMP.

Distress data collection (federal aid and non-federal aid)

By the end of 2001, three full cycles of distress data collection will be completed. All of the18 regional planning associations (RPAs) and eight metropolitan planning organizations (MPOs) are currently participating in the data collection effort. The Iowa DOT Office of Program Management is requesting commitments from all the RPAs and MPOs for the next cycle of data collection (2002–2003).

Throughout the last two years, local governmental agencies participating in the IPMP distress data collection program were given the option of adding the rest of their paved miles (non federal aid eligible) to the distress data collection effort for an extra cost. The IPMP was able to negotiate with the vendor to give cities and counties collecting the extra miles the same advantages as working with the entire state system. Twenty-nine city and county agencies have had distress data collected so far. Several agencies (15 so far) have indicated their interest in getting data collection services for this year.

To enroll in this program, please complete the form on page 11 and mail or fax it to CTRE. The cost for data collection is $40 per mile for rural routes and $55 per mile for urban routes. There will be an additional cost (based on the number of miles added) for CTRE to set up the system, manage the data collection, and deliver the data.

Video logging

Working with the data collection vendor, Roadware Corporation, CTRE is making video-logging capabilities available to local transportation agencies. Roadware can provide video logs of the right of way for the roads where distress data are being collected. Through their VISIDATA software, Roadware integrates video and data into a single desktop application. VISIDATA provides the ideal "vehicle" for driving your network without leaving your office.

Currently CTRE has an agreement with Roadware Corporation to provide this service to local transportation agencies participating in the IPMP at a cost of $7.50 per mile. In addition, a copy of the VISIDATA software must be purchased for $500. This will provide transportation agencies with continuous coverage (160 images per mile) of their highway network integrated with the condition data that Roadware already collects. If you are interested, please fill out the form on page 11.

dTIMS pavement management software

dTIMS was selected by the IPMP task force to help local and regional agencies work with the pavement condition information to develop maintenance and rehabilitation programs and assist in long range

Take action with the Iowa Pavement Management Program

- Enroll in distress data collection.
- Order the video logging software and service.
- Order dTIMS pavement management software.

Fill out the form on page11 and mail or fax it to Omar Smadi.

planning and needs determination. Forty agencies (cities, counties, MPOs, and RPAs) have purchased dTIMS so far. To purchase dTIMS, local agencies pay a one-time fee of $500 and an additional $650 per year for maintenance and update. CTRE still has a number of copies of dTIMS available. If you are interested, please fill out the form on this page.

Section tool

The GIS-based section tool was developed for local agencies to define and convey pavement management section locations and limits. Presently, the roadways requiring section descriptions are designated on hard copy maps and provided to local agencies. Local agencies then provide literal descriptions of section locations and limits. Section extents are interpreted by CTRE staff and translated to geographic coordinate pairs that define section limits. Inconsistencies among road names and incomplete section designations result in data integration challenges. The section tool will resolve many of these challenges.

Currently, the section tool is going through alpha and beta testing. Several large agencies participating in the data collection this year will be using the section tool to define their pavement management sections. Also, the vendor, Roadware, will be utilizing the section tool to locate sections for data collection purposes. Everyone who is currently enrolled in IPMP will receive the section tool, which will be available in early April.

Training

Several training workshops covering the pavement management software and the IPMP GIS tools were conducted in 2000. CTRE is planning a very aggressive training program for 2001. dTIMS training and GIS tools, including the newly developed section tool, will be started in late March. New this year, a general pavement management training workshop will be planned for decision-makers and upper management. A dTIMS users group will also be started where dTIMS users can meet and discuss their experiences and insights with each other. More information about training opportunities will be sent through the Iowa Department of Transportation weekly mailing. Information will also be available online at www.ctre.iastate.edu/.•

IPMP
Iowa Pavement Management Program

Iowa Pavement Management Program

Agency Name: _____

Contact Person: _____

Address: _____

_____

Phone Number: _____

Fax Number: _____

E-mail Address: _____

Distress data collection
We want to enroll in the distress data collection program. For non federal aid eligible paved miles, we have about _____ total miles to add to the network, with about _____ % in rural area and about _____ % in urban areas.

Video logging
We would like to purchase the VISIDATA software. We need _____ miles logged on video.

dTIMS pavement management software
We would like to purchase _____ copy(ies) of this software.

Please complete and mail or fax this form to

Omar Smadi
Center for Transportation Research and Education
ISU Research Park
2901 S. Loop Drive, Suite 3100
Ames, Iowa 50010

Phone:(515) 294-7110
Fax: (515) 294-0467
smadi@iastate.edu