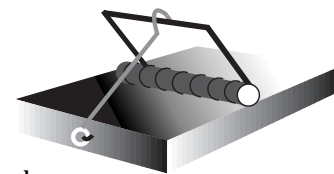


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|---|---|----|--|
| 2 | Calling all “Road Scholars” | 8 | Roadway safety projects prove effective |
| 3 | Iowa Road Scholar levels | 9 | Plan to attend these traffic safety events |
| 3 | Questions about the Road Scholar program | 10 | Highlights from Iowa’s supplement to the MUTCD |
| 4 | Meet your LTAP advisory board | 10 | Status of millenium edition of MUTCD in Iowa |
| 5 | LTAP 101 | 11 | E-tools for transportation |
| 6 | The strength of flowable mortar | 12 | Library news |
| 6 | Flowable mortar specifications | 13 | Conference calendar |
| 7 | Year 2000 data ready for your pavement management program | 14 | Iowa Maintenance Training Expo |

Acronyms in this issue

AASHTO	American Association of State Highway and Transportation Officials	ISU	Iowa State University
CTRE	Center for Transportation Research and Education	LTAP	Local Technical Assistance Program
FHWA	Federal Highway Administration	MUTCD	Manual on Uniform Traffic Control Devices
Iowa DOT	Iowa Department of Transportation		

Built a better mousetrap lately? Show it off at the Expo!



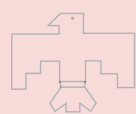
CALLING all inventors of better tools and handier equipment! A new feature of this year’s Iowa Maintenance Training Expo (September 5–6, 2001, Ames, Iowa) is the “Build a Better Mousetrap” competition and demonstration.

The purpose of the competition is to encourage Iowa’s public agency personnel to display and demonstrate the best tools, equipment modifications, and systems you have developed to make your jobs easier, safer, and less costly.

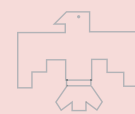
In addition to showcasing your innovations, competitors will see, first-hand, how other agencies are solving common problems.

Six winners will be selected by the Expo planning committee and recognized during the demonstrations. Winners will receive certificates at the Expo, and their “mousetraps” will be featured in future issues of *Technology News* as “tips from the field,” for which they’ll be paid \$100 each.

Expo registration brochures, which include the “Build a Better Mousetrap” entry form, are in the mail. The form is also available online, www.ctre.iastate.edu/bulletin/mousetrap.pdf. Or contact Sharon Prochnow, 515-294-3781, prochnow@iastate.edu.



Correction



In an article about Iowa’s recent Tribal Summit in the May–June issue of *Technology News* (pages 10–11), the listed criteria that make a site eligible for placement on the National Register were incorrect. The correct information follows: A site is eligible for the National Register only if it

- is associated with historically important person(s) or events,
- exhibits unique constructional or aesthetic values, or
- contains historically important information.

Additionally, an eligible property must have “integrity”; that is, it cannot have been drastically altered or disturbed. See precise language describing the criteria at www.cr.nps.gov/nr/listing.htm.

(Contrary to the information provided in the original article, sites like churches, cemeteries, statues, reconstructed buildings, and sites less than 50 years old are actually *exceptions* to the eligibility criteria; such sites are usually *not* placed on the Register. We apologize for the error and any confusion it might have caused.)

Preparation of this newsletter was financed through the Local Technical Assistance Program (LTAP). LTAP is a nationwide effort financed jointly in Iowa by Federal Highway Administration, Iowa Department of Transportation, Iowa Governor's Traffic Safety Bureau, Iowa Highway Research Board, and Iowa State University Extension. 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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Center for Transportation Research and Education
2901 S. Loop Drive, Suite 3100
Ames, Iowa 50010-8632
Telephone: 515-294-8103
Fax: 515-294-0467
www.ctre.iastate.edu/

Stephen J. Andrle
Director
andrle@iastate.edu

Duane Smith
Associate Director for Outreach
desmith@iastate.edu

Marcia Brink
Editor
mbrink@iastate.edu

Tom McDonald
Safety Circuit Rider
tmcdonal@iastate.edu

Sharon Prochnow
Program Coordinator
prochnow@iastate.edu

Mark Anderson-Wilk
Melanie Auen
Bridget Moore-Riannon
Contributing Writers

Any reference to a commercial organization or product in this newsletter is intended for informational purposes only and not as an endorsement.

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Calling all " Road Scholars "

Duane Smith, Associate Director for Outreach

OVER AND OVER at LTAP workshops, Iowa's transportation workers demonstrate their zeal for learning how to do their jobs better, more safely, and more efficiently. To formally recognize these workers for their commitment to continuing education, the Iowa LTAP center will soon begin a new "Road Scholar" Program.

The program will also provide a tool to help supervisors schedule ongoing staff training and better manage their training budgets.

Become a master

Participation in the Road Scholar Program is voluntary and flexible to meet individuals' training needs. The program consists of

- a curriculum of training workshops, plus
- a system for tracking individuals' workshop attendance (via number of "contact hours").

As participants accumulate contact hours in various training events, they will reach different levels of achievement: Road Scholar I, Road Scholar II, Senior Road Scholar, and Master Road Scholar (see sidebar, below).

When participants reach a new level, they will be formally recognized for their achievement.

Curriculum

The Road Scholar curriculum will cover six major categories, listed below (along with sample courses in each category):

- Engineering Basics
 - Basic Math*
 - Route Surveying
- Roadway Fundamentals
 - MoGO Training
 - Construction Inspection
- Safety
 - Flagger Training*
 - Work Zone Safety*
- Transportation and Traffic Engineering
 - Traffic Signal Design and Management
 - Access Management
- Winter Operations
 - Iowa Maintenance Training Expo *
- Management
 - ISRMSA Conference
 - Supervisory Fundamentals*

Iowa Road Scholar Levels	
Road Scholar Level	Cumulative Contact Hours
Road Scholar I	30 (approximately 6 workshops)
Road Scholar II	50 (approximately 10 workshops)
Senior Road Scholar *	70 (approximately 14 workshops)
Master Road Scholar	100 (approximately 20 workshops)

*Core courses must be completed to achieve this level.



Students learn the basics during a surveying class.

Participation in five core courses, noted with an asterisk (*) in the previous list, will be required to advance from Road Scholar II to Senior Road Scholar. Otherwise, participants can attend whichever workshops best meet their training needs.

In addition to LTAP's Road Scholar curriculum, credit will be given for participation in many other courses offered by CTRE and other organizations, agencies, and educational institutes.

For more information

We are very excited about the Road Scholar Program, which begins in January 2002 and is similar to programs offered at other LTAP centers. A brochure outlining the curriculum and other details of the Road Scholar program will be mailed in late fall 2001.

For more information, contact Duane Smith, CTRE's associate director for outreach, 515-294-8103, desmith@iastate.edu.



Participants achieve Road Scholar recognition by attending a variety of workshops.

LTAP Advisory Board

The people listed below help guide and direct the policies and activities of the Center for Transportation Research and Education's Local Technical Assistance Program (LTAP). The board meets at least annually. Contact any of the advisory committee members to ask questions about any aspect of LTAP.

Saleem Baig
Local Systems
Iowa Department of Transportation
Telephone: 515-239-1051

Gary Fox
Traffic and Transportation Director
City of Des Moines
Telephone: 515-283-4973

Kevin Gilchrist
Senior Transportation Planner
Des Moines Metropolitan Planning Organization
Telephone: 515-237-1316

John Goode
Monroe County Engineer
641-932-7123

Neil Guess
Howard R. Green Company
515-278-2913

Bret Hodne
Public Works Superintendent
City of West Des Moines
Telephone: 515-222-3536

Larry Jesse
Local Systems
Iowa Department of Transportation
Telephone: 515-239-1528

Susan Klekar
Iowa Division, Federal Highway Administration
Telephone: 515-233-7302

Wally Mook
Director of Public Works
City of Bettendorf
Telephone: 319-344-4128

Bob Sperry
Webster County Engineer
Telephone: 515-576-3281



Center for Transportation Research and Education

IOWA STATE UNIVERSITY

Road Scholar Program Q & A

Q. What if I attend a workshop before the program begins?

A. Anyone who attended LTAP workshops in 2000 and 2001 will automatically receive credit for those contact hours.

Q. What if credit for previous training doesn't show up on my transcript?

A. Just send LTAP a copy of your workshop certificate, and we'll credit your transcript.

Q. May I attend LTAP workshops even if I don't want to participate in the Road Scholar Program?

A. Of course! Anyone can attend our workshops, conferences, and special schools.

Q. What happens if I can't attend a Road Scholar workshop I'm registered for?

A. The usual cancellation policy applies. You'll need to attend the workshop in the future to earn credit.

Q. How will I know which training activities are included in the program?

A. A Road Scholar Program brochure is being prepared to explain these details. Watch for it in your mail this fall.

Q. How do I sign up?

A. You don't have to formally register to participate in the Road Scholar Program. Every time you attend an LTAP workshop, your record of contact hours will automatically be updated.

Meet your LTAP advisory board

HOW DO THE FOLKS at Iowa's LTAP know what kind of technical information and training will be helpful for hard-working transportation professionals, supervisors, and staff all across the state? How do new LTAP initiatives, like the Road Scholar Program (see pages 2-3), get started? Who makes sure Iowa's LTAP strives to meet the needs of city, county, and state transportation agencies?

Meet your LTAP advisory board. Board members represent the various groups LTAP serves and, twice a year, meet with Duane Smith, director of Iowa's LTAP, and other LTAP staff to help formulate the program's policies and activities.

A list of board members, with contact information, is on page 3. Feel free to contact anyone on the board with suggestions, requests for training topics, or other information that can help make LTAP better. If you haven't met these individuals, here's a little background information about each of them:

Saleem Baig, transportation services engineer in the Iowa DOT's Office of Local Systems, says the most beneficial aspect of LTAP is its service to Iowa cities and counties through workshops and technical assistance offered at an affordable cost. Saleem enjoys being a part of LTAP because of the program's reputation for providing quality service to local Iowa governments.

Gary Fox has long served as director of traffic and transportation in Des Moines. Before being invited to sit on the LTAP advisory board several years ago,

he served as an advisor for many CTRE-organized committees and participated in the organization and implementation of CTRE workshops.

Kevin Gilchrist, Des Moines Area Metropolitan Planning Organization (DMAMPO) senior transportation planner, knew of the LTAP program because of the services provided through the program, particularly CTRE's lending library. A member of the advisory board for several years, Kevin helps contribute an urban perspective on transportation issues.

Larry Jesse has known about LTAP since the mid-1980s, but it wasn't until he attended a meeting of LTAP coordinators in Kansas City in 1991 that he became interested in participating in the program. In 1997, after becoming the director of the Iowa DOT's Office of Local Systems, Larry also became a member of Iowa's LTAP advisory board. Larry says that, because the Office of Local Systems is the liaison between local governments and the Iowa DOT, it's natural that any program benefiting local agencies is of interest to Local Systems staff. He's dedicated to continuing to move the LTAP program in a direction that will most benefit local agencies.

Bob Sperry, Webster County engineer, appreciates the LTAP training program because it provides participants across the state with a unified set of principles, as well as opportunities to work with experts. Bob became involved with LTAP primarily as a liaison with the Iowa County Engineers Association (ICEA), and he helps LTAP focus on needs of ICEA members. He says that LTAP will be one of the communication instruments that can help Iowa's transportation agencies to utilize new and vital technologies.

Our newest members

John Goode, Monroe County engineer, says that what attracted him to the LTAP program is its potential as a vital link for agencies between new information and technology and the application of that information and technology. John says that LTAP has been a great resource for county engineers, and he hopes to offer suggestions to make LTAP even better.

Neil Guess originally served on LTAP's advisory board when he was the public works director and city engineer at Newton. Now an engineering

LTAP advisory board and LTAP staff at the June 2001 meeting in CTRE's offices, left to right: (back row) Duane Smith, Tom Parham (sitting in for Larry Jesse), Wally Mook, Susan Klekar, Neil Guess, Tom McDonald; (front row) John Goode, Saleem Baig, Kevin Gilchrist, Bret Hodne.



LTAP 101

consultant with Howard R. Green Company in Des Moines, he's been re-invited to serve on the board to represent the perspective of Iowa's consulting engineers.

Bret Hodne, West Des Moines public works superintendent, first became involved with LTAP when conducting statewide seminars on snow and ice management with Duane Smith, CTRE's associate director for outreach and the LTAP director. New to the board this year, Bret believes that training is the most critical aspect to turning an individual into a great employee, and that the educational opportunities offered by LTAP centers help managers achieve their staff training goals. Bret is looking forward to working with other LTAP board members to develop new training programs and launch the "Maintenance Managers Program."

Susan Klekar, Iowa Division FHWA assistant division administrator, has known about LTAP from earlier years when it was called the Rural Technical Assistance Program (RTAP). Susan enjoyed helping develop the national strategic plan for LTAP because the people are hard working and dedicated. Susan welcomes the opportunity to work on the LTAP advisory board because LTAP delivers information and technology to the local transportation communities. She looks forward to helping LTAP extend information on the best safety, savings, and mobility practices to even more local agencies.

Wally Mook was introduced to the LTAP program when he became the Bettendorf director of public works. Bettendorf's city engineer was Ray Holland, who kept Wally informed of the LTAP program activities. When Ray retired earlier this year, Wally agreed to serve as his replacement on the LTAP advisory board. Wally believes that LTAP has the opportunity to provide a valuable service to a multitude of users, particularly through the reference library and workshops. Wally looks forward to his time on the board because he can help direct a focus to local city issues. Initially, Wally thought that the LTAP's attention was strictly toward county issues, but he has been pleasantly surprised to discover that LTAP's concerns are broader.

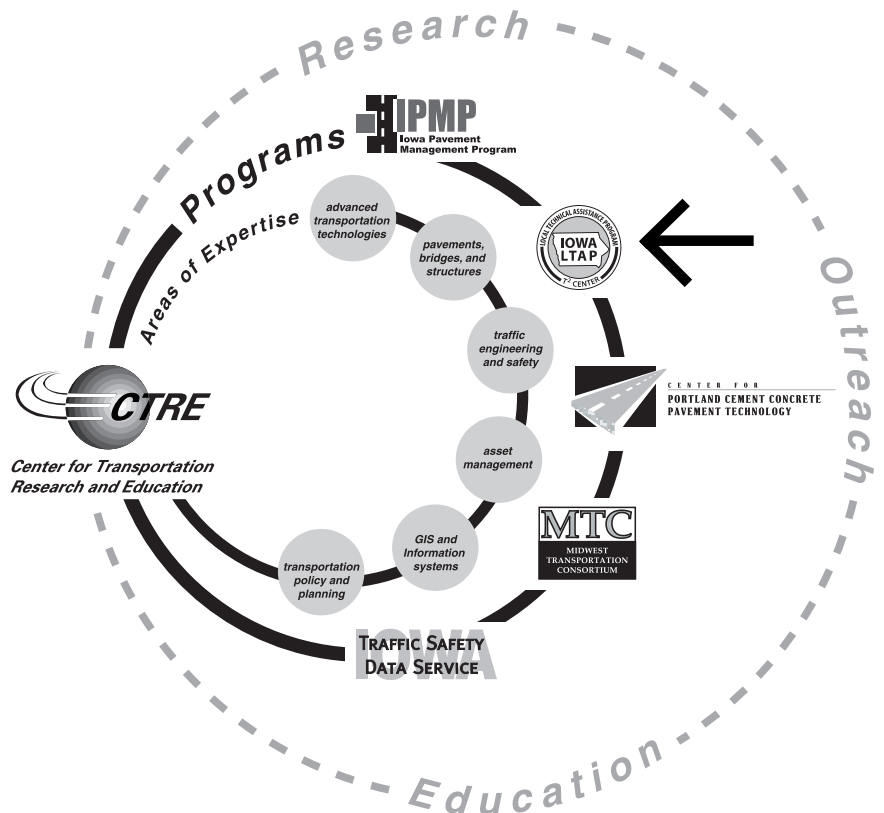
Wade Weiss, Greene County engineer, will soon join the advisory board as a representative of the Iowa Highway Research Board. •

EVEN PEOPLE who've been using LTAP services for years are sometimes confused about what LTAP is and about its connection to the Center for Transportation Research and Education (CTRE) at Iowa State University. You don't have to understand all the administrative ins and outs to take advantage of LTAP, but if you're curious, here's a summary:

The Federal Highway Administration sponsors a Local Technical Assistance Program (LTAP) in every state and Puerto Rico, and five regional Tribal Technical Assistance Programs (TTAPs). Iowa's LTAP helps city and county governments stay current on transportation issues by offering technical and management assistance through this newsletter, training workshops, the Safety Circuit Rider, a lending library, and an information/referral service.

Iowa's LTAP is housed in, and is one of several programs managed by, CTRE, which is a center at Iowa State University. The graphic below shows LTAP's relationship to CTRE. Many people who use LTAP services also benefit from other CTRE programs. Many local governments, for example, participate in Iowa's Pavement Management Program and get maps from the Iowa Traffic Safety Data Service. It's understandable, then, why some people say "CTRE" and mean "LTAP," and vice versa. (We don't care what you call us, as long as you call us!)

Iowa's LTAP is jointly financed by FHWA, Iowa DOT, Iowa Governor's Traffic Safety Bureau, Iowa Highway Research Board, Iowa State University Extension, and workshop fees. For information about LTAP, contact any of its advisory board members (see list on page 2), or Duane Smith, CTRE's associate director for outreach and the director of Iowa's LTAP, 515-294-8103, desmith@iastate.edu. •



The strength of flowable mortar

FLOWABLE FILLS are gaining popularity in projects where material fluidity and eventual excavation of fill are factors.

The mother of invention

Most states have developed or are developing specifications for flowable fills. The Iowa DOT, a leader in the use of flowable fill, most commonly refers to this material as flowable mortar.

Flowable mortar is an engineered material consisting of portland cement, fine aggregate, fly ash, and water. Flowable mortar is a favorable backfill because it's pliable enough to fill small or winding spaces.

The Iowa DOT developed a flowable mortar when it needed a fluid fill around box culverts placed beneath existing bridges left in place during construction. This procedure allows the road to remain in service as the culvert is built, and completely fills the void between the new culvert and the old bridge opening.

Since this initial use, the department has discovered other uses for flowable mortar as an alternative to earth or granular backfill (sand or crushed stone): in sewer trenches, utility trenches, and conduit trenches, and for road base, mud jacking, sub footing, floor slab base, and pipe bedding.

Common uses for flowable mortar in Iowa are placement under existing bridges, around or within box culverts or culvert pipes, and in open trenches.

Advantages

In addition to its fluidity, flowable mortar can be excavated relatively easily. This characteristic makes it a useful fill for utility trenches in residential areas, where utility lines are often moved or require regular maintenance. A lower strength material is being developed for urban use, so excavation will be easier. (The specifications for this material will be available through the Iowa DOT and the *Urban Standard Specifications for Public Improvements* manual.)

At the same time, flowable mortar is durable, and requires infrequent maintenance or replacement. Construction sites that use flowable mortar can be safer than those using granular fill, because generally workers can fill a trench with flowable mortar without having to enter the trench.

Finally, flowable mortar mixes provide a useful way to recycle fly ash byproducts from local power plants.

Disadvantages

Flowable mortar is generally not a good choice in cold, wet conditions.

In dry, warm weather, flowable mortar will harden enough to support traffic within approximately 24

Flowable mortar specifications

IOWA DOT specifications for flowable mortar may be appropriate for local projects. The specs, for both residential and non-residential construction, require the following:

- Type I cement (portland cement)
- natural sand fine aggregate, consisting of mineral aggregate particles or foundry sand from the castings of ferrous material
- fly ash meeting specific requirements and from a source approved by the engineer

After the project engineer approves material samples, the mortar is mixed using the following proportions:

- cement: 100 pounds
- fly ash: 300 pounds
- fine aggregate: 2,600 pounds

Approximately 70 gallons of water is added to these materials to make one cubic yard of flowable mortar.

For Iowa DOT specifications online, see www.dot.state.ia.us/specifications/index.htm. Flowable mortar is described in section 2506 of the standard specifications. •

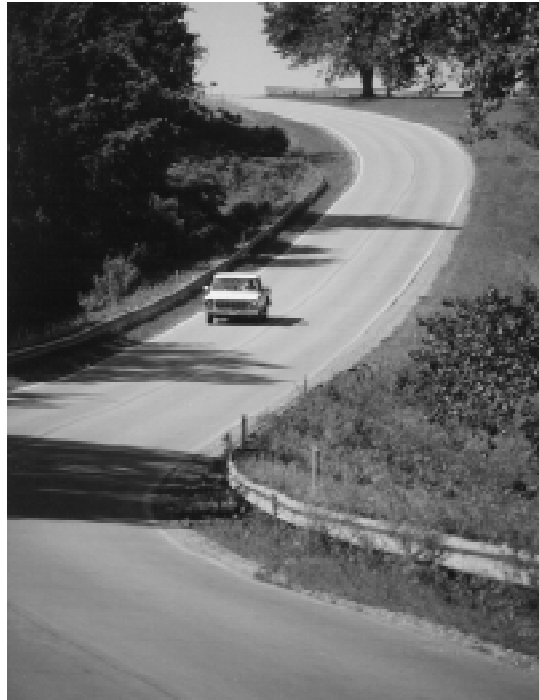
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Year 2000 data ready for your pavement management program

THE IOWA PAVEMENT MANAGEMENT PROGRAM (IPMP) year 2000 highway distress data are ready for delivery. Data will be sent on CD to all counties and cities above 5,000 in population for the following Regional Planning Affiliations (RPAs): 1, 2, 3, 4, 5, 6, 7, 12, 17, and 18. CDs will also be sent to the RPAs.

In addition, Omar Smadi and Zach Hans are available to conduct presentations and training on the IPMP data and GIS tools on an RPA basis.

For more information regarding the data and/or training, contact Omar Smadi, CTRE's pavement management specialist, or Zach Hans, CTRE's GIS specialist, 515-294-8103, smadi@iastate.edu, zhans@iastate.edu. •



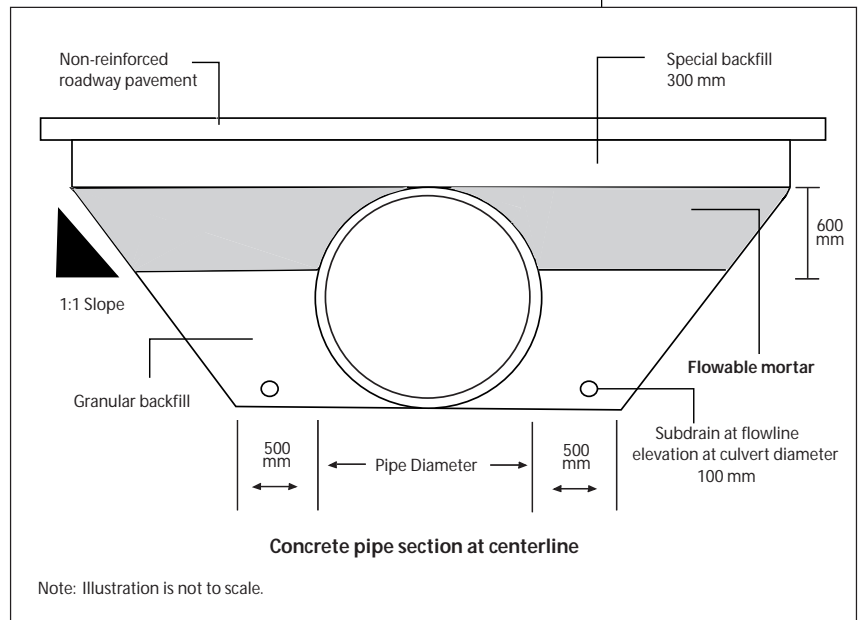
hours after placement. If it is placed during rainy conditions or cold weather, however, the rate of hydration will be affected, slowing the setting process. If flowable mortar is placed on frozen ground, the mortar will set unevenly or not at all.

If flowable mortar is placed where water is standing, its rate of hydration will be affected and the mortar will not set properly.

For more information

Contact David Heer, Iowa DOT earthwork field engineer, 515-239-1280, david.heer@dot.state.ia.us; or Todd Hanson, Iowa DOT PCC engineer, 515-239-1226, todd.hanson@dot.state.ia.us. •

Details of backfill over culvert where special backfill depth is 150 mm to 900 mm (created from Iowa DOT Roadway Typical Drawings, 4300 series)



Roadway safety projects prove effective

NEW RESEARCH findings show that past Iowa DOT traffic safety projects have been generally effective in reducing crashes. Perhaps more important, the results will help the Iowa DOT prioritize future roadway safety improvements.

A recent study evaluated crash reduction percentages and benefit/cost (B/C) ratios for the following common roadway safety improvements implemented to reduce crashes at various sites in Iowa:

- replacing pedestal mounted signals with mast arm mounted signals
- adding left-turn phasing to existing signal
- adding left-turn phasing and turn lane(s)
- installing new traffic signal
- adding turn lane(s)
- installing new traffic signal and adding turn lane(s)
- other geometric improvements

Sites had been chosen for safety improvements based on a formula that gives equal weight to number of crashes, crash rate (number of crashes per average daily traffic volume), and severity (loss value) of the crashes. (These data are recorded in a comprehensive database of over 17,000 crash locations.)

The study, conducted by Gary Thomas, former assistant professor of civil and construction engineering at ISU and traffic safety engineer at CTRE, for the Iowa DOT's Office of Traffic and Safety, analyzed approximately 100 traffic safety improvement projects



Replacing pedestal mounted signals (top photo) with mast arm mounted signals (bottom photo) contributed to a 36 percent crash reduction.



constructed in Iowa during the last 10 years. For each improvement type, Thomas calculated the mean crash reduction factor, mean B/C ratio, and 90 percent confidence intervals. (We can be 90 percent confident that the true mean lies within the 90 percent confidence interval. A mean should be taken with caution if the lower limit of the interval dips to a negative number.)

Replacing pedestal mounted signals

The study found that replacing pedestal mounted signals with mast arm mounted signals contributed to a 36 percent crash reduction. Therefore, "it may be concluded that the replacement of pedestal mounted traffic signals with mast arm mounted signals is likely to result in a decrease in total crashes." The benefits outweighed the costs by 11.2 to 1 for this type of improvement, giving it the highest B/C ratio of any improvement type.

Adding left-turn phasing

Two types of improvements that involved adding left-turn phasing were studied: adding left turn phasing to an existing signal and adding both left-turn phasing and turn lane(s). Both of these improvement types resulted in a reduction of crashes. However, because the sample size for these improvements was small, no statistically significant conclusions could be drawn about the B/C ratios. Thomas advises that further research is needed for these improvement types.

Installing new traffic signals and/or turn lanes

According to the research, the addition of a traffic signal, turn lane(s), or both does not necessarily cause an overall reduction of crashes. In fact, while some collision types decreased after these types of improvements, others increased. The B/C ratios for adding traffic signals and adding turn lanes were low, 0.8 and 0.7 (and the lower limits of their 90 percent confidence intervals were negative, -6.6 and -6.0, respectively).

Other geometric improvements

The final category included other improvements such as adding a median or relocating a driveway. For these types of improvements taken together, crashes were reduced by 32 percent. However, because the types of projects included in this category were varied, they "should probably not be lumped into one type of improvement category." It is not advised that the aggregate data be applied to particular cases.

Conclusions

Thomas notes that analyzing crash data is a complex task. "[M]aking improvements of a certain type (for example, adding a traffic signal) will oftentimes change the type of crashes rather than simply reduce the number of crashes."

Nevertheless, the new findings are expected to assist the Iowa DOT in identifying effective crash mitigation strategies at high crash locations.

For more information

For more information on this study and other Iowa DOT-sponsored traffic safety projects, contact Tom Welch, state transportation safety engineer, 515-239-1267, tom.welch@dot.state.ia.us. •

Plan to attend these traffic safety events

Annual Iowa Traffic and Safety Forum

September 6, 2001

University Park Holiday Inn

West Des Moines

The third annual Iowa Traffic and Safety Forum will be held September 6 in West Des Moines. The Iowa DOT's Office of Traffic and Safety, Highway Division, sponsors this event, which this year focuses on "context sensitive design." Other topics include

- updates on traffic and safety research projects
- a report from the traffic signal design standards committee
- a discussion of crash report processing from the Motor Vehicle Division, Office of Driver Services

Iowa's local traffic and safety engineering staffs and state agency safety partners are invited to attend. Anyone who promotes transportation safety can benefit from this event.

You're welcome to submit other projects or topics for presentation. Contact Tom Welch, Iowa DOT state traffic safety engineer, 515-239-1267, tom.welch@dot.state.ia.us. Watch your mail for program notices and requests for pre-registration; the forum is free.

Multidisciplinary Traffic Safety Teams Peer Exchange

October 23, 2001 (morning only)

Four Points Hotel and Suites

Des Moines

On October 23, immediately preceding the Iowa Traffic Control and Safety Association (ITCSA) Annual Conference, invited members of multidisciplinary traffic safety teams from across the state will share what works—and what doesn't—for their teams. Topics will include

- selecting initiatives
- locating funding sources and other resources
- strengthening membership and leadership
- collaborating with other community groups and
- handling meetings and other logistics

Anyone interested in learning about multidisciplinary teams is invited to observe these discussions at no cost. Register for the event on the ITCSA Annual Conference brochure, www.ctre.iastate.edu/itcsa/. (You don't need to be an ITCSA member or attend the ITCSA conference to observe the peer exchange.)

The event is sponsored by the Iowa Safety Management System Coordinating Committee, the Iowa Governor's Traffic Safety Bureau, and ITCSA. For more information, contact Tom McDonald, LTAP Safety Circuit Rider, 515-294-6384, tmcdonal@iastate.edu.

ITCSA Annual Conference

October 23–24, 2001

Four Points Hotel and Suites

Des Moines

Traffic engineers, law enforcement personnel, emergency responder staff, and driver educators are encouraged to investigate what the Iowa Traffic Control and Safety Association (ITCSA) offers at ITCSA's annual conference. Members and non-members alike are invited.

The conference will be held in Des Moines beginning at 1:00 p.m. on October 23 and will conclude after lunch on the following day. Presentation topics include

- coordinated traffic enforcement
- diverse views of automated enforcement of red-light running
- first urgent hour for emergency response
- digital photos of crash scenes
- a case study of school route safety
- the new "millennium" edition of the *Manual on Uniform Traffic Control Devices*

This year the conference will be preceded by a peer exchange for safety teams (see article below).

Registration information will be in the mail and online at www.ctre.iastate.edu/itcsa/ in mid-August. For more information, contact Tom McDonald, 515-294-6384, tmcdonal@iastate.edu.

What are multidisciplinary traffic safety teams?

They are community-based collaborations among professionals in traffic and transportation engineering, law enforcement, emergency response, private citizen groups, and/or many other parties interested in improving traffic safety. Teams may form to solve specific problems or to identify measures that should be taken to prevent safety hazards. Their multidisciplinary nature is an important element of their effectiveness; it allows teams to consider many pertinent viewpoints on traffic safety in order to identify helpful solutions to problems and difficult issues.

Highlights from Iowa's supplement to the MUTCD

Tom McDonald, Safety Circuit Rider

Editor's note: This article is part of a series introducing sections from a new resource: Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties. The manual was funded by the Iowa Highway Research Board (TR-441) and supplements the Manual on Uniform Traffic Control Devices (MUTCD). Copies were recently furnished to all Iowa counties and to cities with populations over 1,000. If you haven't received your copy or need additional copies in either paper or CD-ROM format, contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu, or Tom McDonald, Safety Circuit Rider, 515-294-6384, tmcdonal@iastate.edu.

This article addresses some additional topics covered in Section C, "Signs."

- The overuse of special warning signs like "CHILDREN AT PLAY," "SLOW—CHILDREN," and "DEAF CHILD," has long been a concern, especially in urban areas. We all certainly want to react to parents' requests as much as possible, but too many signs, particularly those that warn of conditions that do not occur consistently, can lead to drivers to ignore the message entirely. In the article "Children at Play Signs," the Iowa manual describes how agencies can discourage overuse of special warning signs and, when such signs are installed, how to ensure these signs remain in place for a limited time.
- Commercial developments such as shopping malls and even private residential housing subdivisions sometimes install signs and markings to control and guide traffic. Many times the traffic control devices and markings used in such private applications do not comply with standard practice as described in the MUTCD. It may not be commonly known that both Section

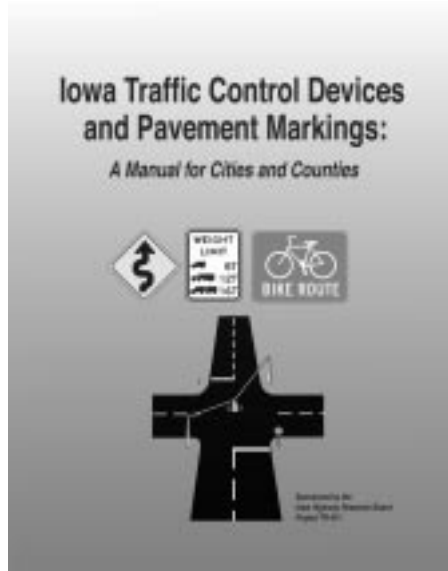
Status of millenium edition of MUTCD in Iowa

The Iowa DOT will be printing copies of the new MUTCD and anticipates shipping a **free** copy to every Iowa city and county late this fall, perhaps in November. Cities and counties will have to supply their own binders. Questions? Contact Tim Crouch, state traffic engineer, Iowa DOT, 515-239-1513, tim.crouch@dot.state.ia.us.

States have until January 17, 2003 to adopt the millenium edition of the *Manual On Uniform Traffic Control Devices* (MUTCD). In Iowa, the Iowa Administrative Rules will first need to be amended. This process is beginning, with state adoption of the millenium MUTCD anticipated in early 2002. •

1A of the MUTCD and specific sections of the Iowa Code require that *all* traffic control devices, even those installed in private developments, comply with current requirements. The Iowa manual addresses this issue in the article "Commercial Developments."

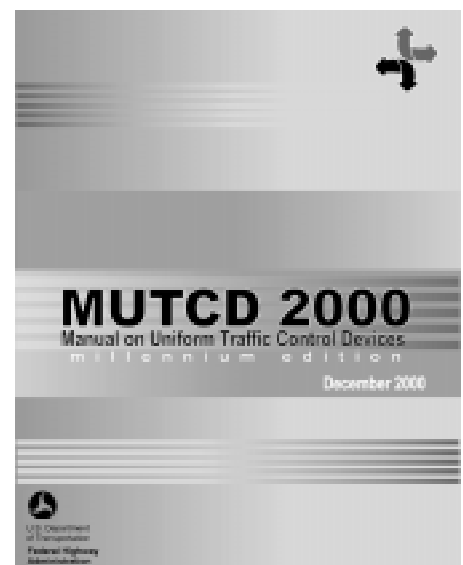
- The millennium edition of the MUTCD contains many new signs and markings. One of the changes involves crossing signs, W11-1 for bicycles and W11-2 for pedestrians. The new MUTCD has eliminated the use of W11-1A and W11-2A signs at the point of crossing. Instead, a W16-7P downward pointing arrow will supplement the standard crossing signs at those locations. This change is explained in the article "Crossings." •



See the conference calendar on page 13 for dates and locations of four MUTCD training workshops scheduled in Iowa during fall 2001. These workshops will be led by Safety Circuit Rider Tom McDonald.

Iowa's supplement to the millenium MUTCD (left) addresses issues of particular importance to Iowa's city and county road departments.

The Iowa DOT will mail copies of the official millenium edition of the MUTCD (right) to Iowa cities and counties this fall.



E-tools for transportation

Check out these resources on the Internet:

Software

PaveSpec 3.0 can help highway agencies develop performance-related specifications and predict performance and life-cycle costs of portland cement concrete pavements. The software can also simulate risks and consequences of achieving different quality levels for a project. Download PaveSpec 3.0 from the Turner-Fairbank Highway Research Center's web site: www.tfhr.gov/pavement/pccp/pavespec/pavespec.htm.

The American Iron and Steel Institute (AISI) has released **Short Span Steel Bridge Design 3.0**. Now available on CD, this software contains design plans and programs previously available in version 2.0 in a format that is easier for design engineers to use. A free 30-day trial version is available for download: www.steel.org/infrastructure.

Using the FHWA's **Pedestrian and Bicycle Crash Analysis Tool (PBCAT)**, you can develop and analyze a database of details regarding crashes between motor vehicles and pedestrians or bicyclists. Database reports will support the development of countermeasures to prevent such crashes. The software and user's manual (FHWA-RD-99-192) are available through the University of North Carolina Highway Safety Research Center's web site: www.walkinginfo.org/pbcacat.

Publications

The Zoning Ordinance is one of seven publications included in a land use series produced by Iowa State Extension to Communities and the ISU College of Design. This publication contains information about land use regulations, innovative zoning techniques, and legal issues and is available through the Iowa State Extension web site: www.extension.iastate.edu/Pages/pubs/Masterlist4.html#1800; click on publication 1868g.

The FHWA has released the revised **Transportation Conformity: A Basic Guide for State & Local Officials**. This new version can help state and local agencies to comply with the transportation conformity requirements in the Clean Air Act Amendments of 1990. The guide can be viewed on the FHWA web site: www.fhwa.dot.gov/environment/conformity/basic_gd.htm.

The **Work Zone Best Practices Guidebook** (FHWA-OP-00-010) provides practitioners with information on practices that can increase work zone safety. This FHWA publication includes insights from transportation experts from around the country. Fact sheets describing measures state highway agencies are taking to increase work zone safety are also available for download. www.ops.fhwa.dot.gov/wz/workzone.htm or www.ops.fhwa.dot.gov/wz/bestprac.htm.

STORMWATER, The Journal for Surface Water Quality Professionals can help local agencies that are impacted by NPDES II. To view online versions of articles, click on "Current issue." To subscribe to the hardcopy version of the journal, click on the "subscribe" link: www.stormh2o.com.

The Institute of Transportation Engineers (ITE) has produced a paper that focuses on establishing safe transportation networks called **Safety Conscious Planning—The Development of the Safer Transportation Planning Network Process**. The paper is available online: www.ite.org/pdf/SafetyConsciousPlanning.pdf.

Web sites and forums

AASHTO has a new web site. Find out about AASHTO news, services, products, and software. www.transportation.org.

The American Concrete Paving Association's expanded web site features the **Ultra-Thin Whitetopping Load-Carrying Capacity Calculator**. Go to www.pavement.com, and click on Technical Information.

Kansas State University (KSU) has been developing a **roundabout site** that includes research, pictures, and links to other roundabout sites. To visit or contribute, go to www.ksu.edu/roundabouts.

For information about addressing **rural and agricultural transportation issues**, visit the site that supports the U.S. Department of Agriculture and U.S. Department of Transportation in enhancing rural economic development, and rural life and mobility: www.ntl.bts.gov/ruraltransport/index.html.

Emanagers web page provides emergency managers an easy way to navigate through the Federal Emergency Management Agency web site. This new page includes links to pages that are of interest to emergency managers. www.fema.gov/emanagers. •

Online input

The FHWA is seeking information on how local governments are managing transportation operations issues and programs. To offer your input, see www.surveysolutions.com/prs/pti.htm.