TECHNOLOGY NEWS

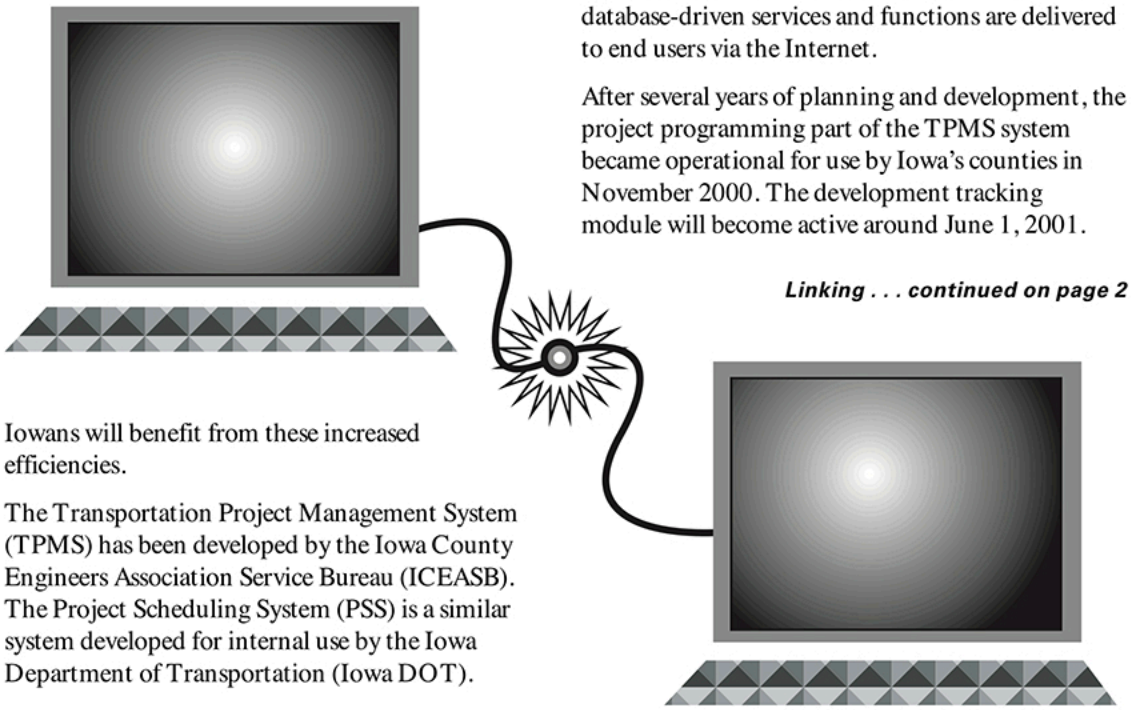
Iowa's Local Technical Assistance Program (LTAP): providing transportation technology transfer for Iowa's cities and counties

March–April 2001

Counties to benefit from anticipated linking of electronic systems

THIS SUMMER, Iowa's county transportation agencies will begin benefiting from a planned linking of local and state government project development tracking systems. Linking the two systems will streamline and standardize record keeping of project development processes. It will enable automatic data synchronization among Iowa's partners in project planning and development—counties, cities, regional and metropolitan planning agencies, consultants, permit agencies, and the Iowa DOT—allowing them to work together more effectively.

Counties will save time and improve accuracy, all with less paperwork. Ultimately, of course, all Iowans will benefit from these increased efficiencies.



The Transportation Project Management System (TPMS) has been developed by the Iowa County Engineers Association Service Bureau (ICEASB). The Project Scheduling System (PSS) is a similar system developed for internal use by the Iowa Department of Transportation (Iowa DOT).

The ICEASB and the Iowa DOT developed their systems separately to suit the specific needs of their organizations, but the two applications have much in common. Both the TPMS and the PSS serve as databases for storing project development status and information. So, the two organizations have communicated regularly with the intention of one day creating a link between the two systems.

The ICEASB system

The TPMS serves as an on-line forum via which everyone involved in programming and development of local government transportation projects can stay abreast of the status of each job and work together more efficiently. The TPMS server's database-driven services and functions are delivered to end users via the Internet.

After several years of planning and development, the project programming part of the TPMS system became operational for use by Iowa's counties in November 2000. The development tracking module will become active around June 1, 2001.

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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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Cities, planning agencies, and others will be invited to take advantage of the system for federal-aid project planning starting this summer.

The Iowa DOT system
Over the last three years, the Iowa DOT has created a database-founded management system for project development tracking to replace the old mainframe application created about 25 years ago. The PSS is an interactive tool for monitoring and managing development of the Iowa DOT's own highway improvement projects. This new system is one of the few in the nation to be designed in house.

The linking
It is anticipated that the systems will exchange data in two directions. Initially, TPMS will upload local government project status information to the PSS system, in advance of each scheduled Iowa DOT bid letting. This will enable Iowa DOT staff to more accurately know what local projects are scheduled to be let through their contracting process and help them monitor whether or not such projects are on time. This function could begin as early as late July 2001.

Later coordination will focus on sending information on Iowa DOT project review actions back to TPMS so that local project sponsors can be more rapidly informed about when they may proceed with the next stage of development.

Linking the two systems will reduce communication delays and improve accuracy. Mike Kennerly, Iowa DOT project scheduling engineer, says the integration will benefit both organizations because "we can keep each other informed without a lot of duplication of effort."

The TPMS will track the programming of around 5,500 projects from around the state. Of these, 1,100 typically will be in development for Iowa DOT lettings, with perhaps another 500 being made ready for local lettings. The PSS will typically track about 2,000 active Iowa DOT projects as well any local projects passed to it by TPMS.

For more information contact Steve DeVries, ICEASB executive director, 515-244-0779, steve@iceasb.org, or Mike Kennerly, Iowa DOT Highway Division-Project Scheduling, 515-239-1446, mike.kennerly@dot.state.ia.us.

Thanks to Steve DeVries for his help with this article. •

Make the most of materials

CLEAR VISION, a publication of the Iowa Department of Transportation's Office of Materials, is packed with materials-related information that can benefit Iowa's local transportation agencies.

A few topics covered in a recent issue included

- development and field testing of electronic monitors for portland cement concrete paver vibrators
- evaluation of devices that test asphalt permeability
- improved mix designs for concrete barriers
- differences between high quality and low quality crinoidal limestone aggregates
- foamed asphalt
- new supplemental specifications for hot-mix asphalt

Clear Vision is mailed to Iowa DOT garages and county engineers. City engineers and public works administrators could also benefit from this useful publication. To obtain a free subscription, contact Chris Anderson, Highway Division/Office of Materials, Iowa Department of Transportation, 515-239-1819. •

Web sites

www.ctre.iastate.edu/roadwork2001/
Find current information on Iowa Department of Transportation road construction, including detour information, expected duration of work, and tips for motorists.

www.highwaysafety.org/
The Insurance Institute for Highway Safety provides online copies of its newsletter *Status Report*, which covers topics such as teenage drivers, roundabout benefits, and crashworthiness improvements.

wzsafety.tamu.edu/
Check out the National Work Zone Safety Clearinghouse for the latest information on work zone safety standards and practices, equipment, laws and legislation, and crash data information. •

New tool to assist in trail planning and development

MORE THAN 1,000 miles of trails, of various types, have been built in Iowa in the last 10 years. This increase in trail building reflects the enormous popularity of trails for both recreation and transportation.

The Iowa Department of Transportation's (Iowa DOT) new information package called *Iowa Trails 2000* assists trail planners in creating an interconnected, multimodal, easily accessible statewide trails system. Some of the resources this document provides are

- a framework for the implementation of statewide trails
- guidance for subsequent trails system planning by a variety of agencies and jurisdictions
- plans for implementation of mode-specific or regional trails
- guidelines for all trail modes, to encourage consistency in quality and design of trails statewide

Iowa Trails 2000 includes an overview of recommended maintenance activities, estimated cost of those activities, and potential funding sources. It also includes information on the inventory of existing and proposed trails, transportation infrastructure, and natural resources. The two major design issues of topography and safety are also addressed.

The *Iowa Trails 2000* document proposes 4,908 miles of trails be constructed. Currently, only 517 miles of existing trails meet the *Iowa Trails 2000* standards.

To obtain the *Iowa Trails 2000* package contact Nancy Burns, Iowa DOT trail and bikeway coordinator, 515-239-1621, nancy.burns@dot.state.ia.us, or visit the Iowa DOT website at www.dot.state.ia.us/. •

Photo courtesy of the Iowa DOT.

Maintain, construct, and communicate

YOUR department's plans for this year's roadway maintenance and construction are probably in place, but what about your plans to keep the public informed about these activities?

For a quick refresher on good public relations, request a free copy of *Get the Word Out: Public Relations Tips for Transportation Agencies* (P 1356) from the Local Technical Assistance Program library. A few of the suggestions you'll find in this 20-page booklet include

- how to develop story ideas
- how to work with the media effectively
- how to write news releases that get results

To request a copy, contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu. This publication is also available online at www.ctre.iastate.edu/pubs/special_ltap/. •

Action Guide series

ROADWAY Safety is part of NACE's Action Guide Series. First published in 1965, the series was variously revised, expanded, and reprinted in 1972, 1986, 1992, and 1995. In 1998–1999, the *Safety Improvements Action Guide* was updated, resulting in the new 2000 version, *Roadway Safety*.

Roadway Safety is part of Action Guide Volume III, which also addresses road surface management: traffic, bridges, drainage, aerial photography, soils, and pollution issues.

Volume I of the action guides addresses administrative issues for county engineers: organization, personnel, finances, tort liability, and maintenance management.

Volume II addresses planning and programming, as well as land development, rural public transportation, and solid waste management.

All three volumes are available through Iowa's LTAP library; see the related article.

The NACE Action Guides do not constitute a standard, specification, or regulation but are intended only as guidelines. •

NACE's safety guidelines have been updated

by Duane Smith, Associate Director for Outreach

IN 1998 AND 1999 Tom McDonald, Iowa's Safety Circuit Rider, and I were honored to be part of a National Association of County Engineers (NACE) committee to update NACE's *Safety Improvements Action Guide.* The committee consisted of county engineers and representatives of Local Technical Assistance Programs (LTAP) and the Federal Highway Administration. Milt Johnson, P.E., a retired county engineer from Minnesota and former executive director of NACE, managed the update. Many of you know Milt from his involvement with the Iowa LTAP center.

Especially helpful for rural counties

The revised guide, *Roadway Safety*, published in 2000, has been prepared to assist county engineers, assistant engineers, and road superintendents with roadway safety–related responsibilities. Most of the information is directed to rural counties, where the engineer often has a limited engineering staff and where safety problems are different from those found in urban situations.

Special features

The brief guide is intended to help counties identify various road hazards and then develop safety improvements. It includes suggestions on ways to evaluate the seriousness of hazards and develop priority lists for addressing those hazards.

In general the guide discusses

- agency management, operations, and training
- roadway geometrics and roadside features
- traffic control devices
- work zone safety

Two safety audit checklists in the guide will help staff evaluate signs along a route and visibility and sight distance at intersections.

Suggested work zone signing, according to road type and speed limit, and channelization device spacing are presented in easy-to-read tables.

Of particular interest is the graph in chapter six that compares highway fatalities to fatalities in work zones. Approximately two percent of highway fatalities occur in work zones.

The guide includes many helpful photos that illustrate roadside hazards as well as correct placement of traffic control devices.

Roadway Safety will complement *Iowa's Traffic Control Devices and Pavement Markings: A Guide for Cities and Counties*, which will be distributed this spring (Iowa Highway Research Board TR-441).

For more information

Roadway Safety is available for loan from the Iowa LTAP library; contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu.

NACE members may purchase *Roadway Safety* from NACE for $7.00 ($10.00 for non-members), plus shipping.

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440 First Street, N.W.
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Telephone: 202-393-5041
FAX: 202-393-2630
E-mail: nace@naco.org

An order form is also available on NACE's website: http://www.naco.org/affils/nace/index/htm. •

Complying with GASB 34: Help is on the way

THE IOWA County Engineer Association Service Bureau (ICEASB) is in the final stages of developing a system to help Iowa counties comply with the Governmental Accounting Standards Board's Statement 34 (GASB 34) infrastructure reporting requirements.

Prior to Statement 34, counties generally accounted only for cash flow. Under GASB 34, counties' accounting records will also need to reflect the value of infrastructure assets. The new ICEASB software is intended to provide counties with a uniform way to assign value to their county's infrastructure assets such as roads, buildings, and bridges.

How the software works

The new software package will be an Internet-based system that uses the depreciation approach for valuing assets. The depreciation approach uses an established method to apportion an asset's cost over its useful life, until the asset reaches salvage value. It would start out with straight-line depreciation, but will permit the addition of other methods as requested. The proposed system will handle prospective and retrospective reporting in the same manner and is flexible enough to accept almost any form of composite asset valuation.

To use the new accounting system, county engineers will access it from the ICEASB web site, which will store and manage the data for them. County auditors will access the infrastructure data from their new affiliate web site being developed by the Iowa State Association of Counties.

According to Steve DeVries, executive director of the ICEASB, "This proposed system would provide users with a simple method of entering infrastructure element data and specifying the depreciation schedule. It would also provide an easy-to-use interface for organizing and managing the data for easy access, updates, and reporting."

When it will be available

The ICEASB presented the latest software prototype to the County Finance Board (CFB) infrastructure subcommittee in March. Technical adjustments requested by the CFB have been made, and the board will probably review it again in May.

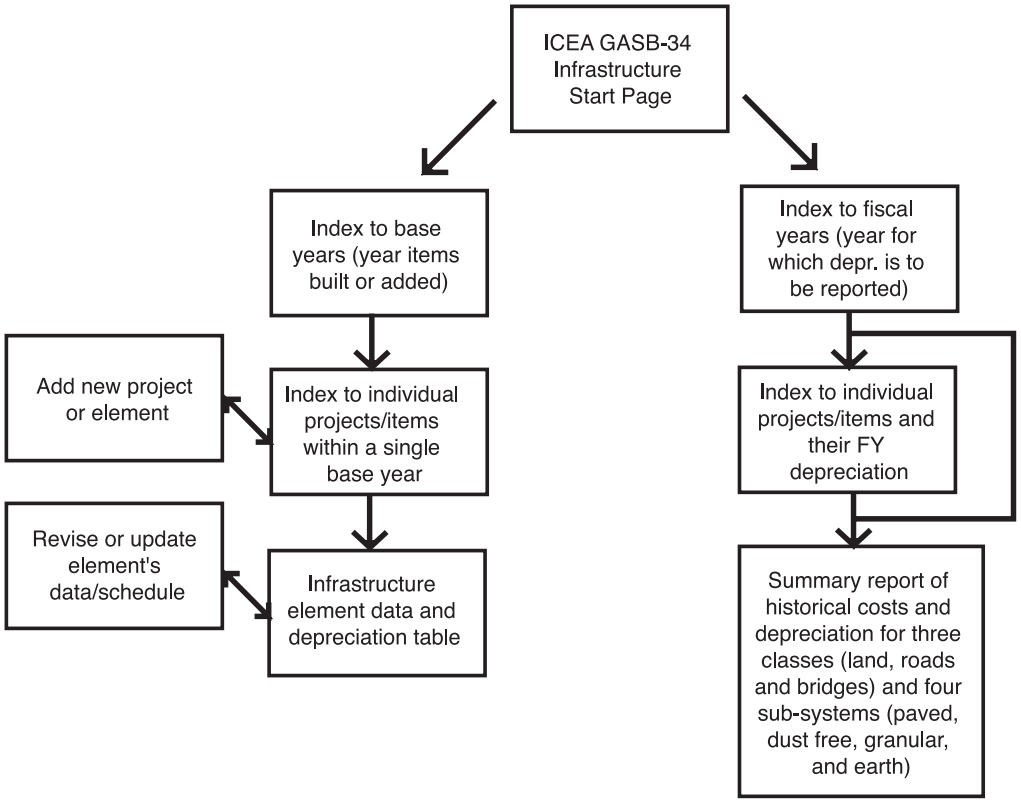
The ICEASB could implement the software by the end of the summer, but implementation depends on acceptance and approval by county engineers, county auditors, and State Department of Management officials.

For more information

For more information about electronic support for Iowa counties contact Steve DeVries, ICEASB executive director, 515-244-0799, steve@iceasb.org.

For background information about GASB 34, see the January–February 2000 issue of *Technology News*, www.ctre.iastate.edu/gasb34/index.htm. •

PROPOSED ICEA GASB-34 infrastructure reporting and depreciation tracking system. A preliminary concept presented by the ICEA Service Bureau.



Iowa's crushed rock roads

THOUGH most rural Iowans believe they or their neighbors live near gravel roads, only 35 percent actually do.

The surfaces of most of Iowa's granular surface roads are crushed limestone or dolomite, not gravel. Though some counties in Iowa use locally available gravel mixes, most of Iowa's roads are surfaced with crushed rock from local quarries.

Using higher quality crushed rock results in less drainage damage, thereby requiring less frequent road maintenance.

Choosing suitable crushed rock is vital to ensuring a durable and economical unpaved road. When choosing crushed rock, consider quality and size.

Quality and size

Crushed rock is quality graded based on how it measures up to standards for durability. Tests consist of subjecting the crushed particles to impact, grinding them with steel spheres, and subjecting the material to alternately freezing and thawing conditions. These tests determine how well the crushed rock resists change in gradation from traffic and weather conditions.

As described in Iowa Department of Transportation (Iowa DOT) specifications, Class A crushed rock provides the highest quality, but Class B and even Class D can also be used for surfacing.

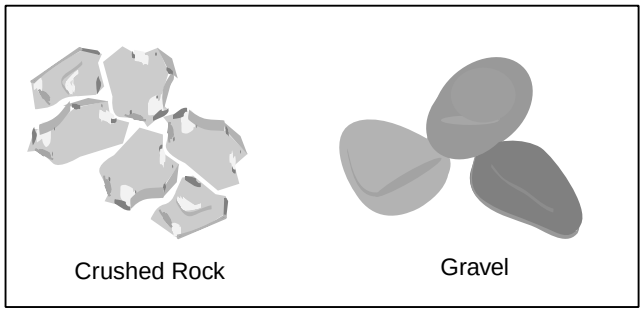
Iowa DOT specifications recommend 3/4-inch top size for crushed rock used for surfacing Iowa's roads; however, variation in gradation is allowed. Many counties prefer to use a smaller top size, such as 5/8 inch, because finer gradations have been found to develop thicker crusts and require less grading. The cost of finer gradation material may be higher than coarser mixes, although the tradeoff is better performance and less maintenance.

With any gradation, controlling the amount of fine particles is important to reduce dust and maintenance.

An ounce of prevention

Using durable and correctly sized crushed rock can help local governments save on road maintenance costs. Using higher quality crushed rock results in less drainage damage, thereby requiring less frequent road maintenance. Specifying quality crushed rock that best meets the local needs and providing timely maintenance will result in acceptable transportation for the many Iowa citizens who live near and travel on crushed rock roads.

For Iowa DOT specifications online go to www.dot.state.ia.us/specifications/index.htm. •



MoGO training 2001

MOTOR GRADER operators, are you ready to tackle the potholes, ruts, and washboards left from this year's hard winter? If you think your skills could use a little fine-tuning, then you'll want to attend one of this year's Motor Grader Operator (MoGO) workshops.

Interested parties must sign up by May 15, 2001.

The Center for Transportation Research and Education (CTRE) is beginning to schedule this year's MoGO workshops. Interested parties must sign up by May 15, 2001. These workshops are helpful to both beginning motor grader operators and experienced operators who would like some review.

About the MoGO workshop, Kenny Jagerson, a Boone County medium equipment operator, says, "For a newcomer, like myself, it was very informative. It gave me a good overview of the work and techniques involved in motor grading."

A safety and liability checklist for local transportation agencies

IF YOU CAN answer "yes" to the following questions, your roads will be safer for users, and your agency will be in a good position to defend itself against tort liability.

Training
Do all employees receive proper training for the work they do and the equipment they use?

Are employees trained to use reasonable care in performing their duties?

Are employees trained to report hazardous conditions and how to act on them?

Signing and marking
Is an up-to-date copy of the *Manual of Uniform Traffic Control Devices* (MUTCD) available for staff reference?

Are employees familiar with the MUTCD, and are traffic signs and markings adequate and properly installed?

Do we have up-to-date inventory of traffic signs, signals, and markings to assist in compliance with MUTCD requirements?

Do we have a policy for periodically inspecting signs, signals, and markings, and a system for reporting and correcting problems?

Are curves and other road hazards posted with proper warning signs and advisory speeds based on the MUTCD recommendations?

Are all bridges properly posted for weight restrictions and clearances?

Are all roadway railroad crossings properly signed and marked?

Do we properly sign and delineate work zones in accordance with Part 6 of the MUTCD?

Roads, culverts, and bridges
Do we have an up-to-date inventory of roads, culverts, and bridges, and a plan to address deficiencies?

Are all roads and streets properly classified and signed? Were proper procedures followed for declaring them "minimum or limited maintenance"?

Do we have information on file about our road and street rights-of-way?

Do we keep good records on highway activities, including road conditions, crashes, and maintenance work?

Have we adopted minimum standards for design, construction, operations, and maintenance? Are programs in place to implement these standards?

Administrative issues
Have we adopted procedures for receiving complaints, responding to them, and recording all actions?

Is our equipment in good repair, and are employees instructed to report faulty equipment immediately?

Do we have a policy for snow and ice control? Is staff familiar with that policy?

Thanks to the Vermont Local Roads News, whose liability checklist served as the basis for this article. •

Day one is classroom instruction that helps operators learn more about how best to operate their equipment. During this instruction, videotape and slide shows are presented. No written work or tests are required. Day two is an optional field day. Instructors divide participants into groups and travel to local sites. At these sites, the motor grader operators can discuss specific problems they encounter while grading.

Scheduling for MoGO training workshops is based on interest. The number of operators interested determines when and where the workshops are held.

If you are interested in signing up for the 2001 MoGO training, contact Sharon Prochnow at CTRE, 515-294-8103, prochnow@iastate.edu. •