

June 1992

## ISTEA alters highway funding

By Larry Mendenhall  
Editor, *Technology News*

The Intermodal Surface Transportation Efficiency Act (ISTEA) signed by President George Bush in December, 1991, changes significantly the way transportation legislation is handled.

Whereas past legislation dictated that federal money be spent on specific projects, the current act gives state and local governments more flexibility to develop their own transportation priorities.

The flexibility incorporated into the current act is just one of several policy goals established by the legislation. Other goals include:

- Establishing a National Highway System (NHS). The NHS will consist of approximately 155,000 miles of existing interstate routes and a portion of the primary system. The NHS will focus federal resources on roads critical to interstate travel, national defense, and roads that connect with other modes of transportation.

- Giving state and local governments more flexibility in determining transportation solutions, whether transit or highways, and the tools of enhanced planning and management systems to guide them in making the best choices.

dards, a range of bicycle and pedestrian projects, and highway beautification.

For the past 20 years, the former Federal-Aid Highway Program was directed at constructing and improving four federal-aid systems – interstate, primary, secondary, and urban. The new bill reduces those four to two – the NHS and the Interstate System (while a component of NHS, the interstate system retains a separate identity and its own funding) and a block grant program called the Surface Transportation Program (STP).

The NHS funding level is \$21 billion for the six-year life of the bill. Each state, however, may choose to transfer 50 percent of its NHS funds to its STP. In the STP, Iowa roads not on the NHS and city and county routes not classified as local or rural minor collectors are eligible for funding.



**Mark Ackleson of the Iowa Heritage Foundation presents his ideas on how transportation enhancement funds should be spent. Ackleson and other panel members participated in an informal IDOT meeting to discuss the new ISTEA legislation.**

- Making more funds available for researching new technologies, such as intelligent vehicle-highway systems (IVHS) and prototype magnetic levitation systems.
- Providing highway for activities that enhance the environment, such as wetland banking, mitigation of damage to wildlife habitat, historic sites, activities that contribute to meeting air quality stan-

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# ISTEA a challenge for Iowans

Some of the money must be spent in certain areas, according to the act. Ten percent of a state's STP funds are set aside for eliminating roadside hazards and improving rail-highway crossing safety. Another 10 percent must be used for "transportation enhancements." Transportation projects may include such things as building bicycle or pedestrian trails, landscaping, preserving abandoned rail corridors which may include conversion to bike or pedestrian paths, and archaeological planning and research. These are minimum percentages. States may spend up to 90 percent of their STP funds in either of these areas.

The remaining 80 percent will be split between different areas of the state according to population. Areas over 200,000 in population (there are three such areas in Iowa) will divide 62.5 percent of the remaining funds while the remainder may be used in any area of the state. Areas of 5,000 population or less are guaranteed 110 percent of 1991 Federal Aid to Secondary roads fund. These are the funds that state and local governments may use to establish their own priorities and projects.

"That gives the state and local agencies more freedom and responsibility to decide where they can best spend

that money," Roger Anderberg, Urban Systems Engineer at the Iowa DOT, said. "Formerly, federal regulations pretty much said where it was to be spent."

This is a significant departure from previous transportation acts. An increased amount of emphasis will be placed on Metropolitan Planning Organizations, local agencies, and local elected officials. Instead of planning a project for a specific jurisdiction, local planners will most likely have to consider regional and state-wide priorities.

"How this works out in the next six years will be very interesting," Anderberg said. "The money isn't limited to any one jurisdiction. For example, a city might have to help the state with programs like the proposed I-235 project in Des Moines."

Iowa will receive \$182.1 million in 1992. That's less than the \$202.8 million received in 1991. For the period between 1993 and 1997, Iowa's funds are projected to be \$235.4 million each year.

The important question is how the funds will be distributed. To gather insights and suggestions about that procedure, the DOT held an informal

public meeting in early June. Each part of the state was well-represented by people who represented counties, planning agencies historical organizations, and recreational groups. The DOT expects to finish a preliminary plan sometime during July. That plan will be discussed at another public meeting later this summer.

Deciding on which projects receive funding is an equally difficult question. Again, local organizations and agencies have greater responsibility for these decisions under the new bill than under previous bills. They will find themselves working more closely with the state DOT in determining what their area needs and how those needs fit in with the state-wide plan.

Because of the greater responsibility about to be thrust upon them, Anderberg believes it's important for all local agencies and organizations to become involved with the process.

"They all ought to know who their spokesperson is and if they have concerns, they should be in touch with them to let them know," Anderberg said. "When things get this flexible, the groups that are well organized and get their story told get their needs known. This act really gets down to the grass roots level."

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Program Manager — Tom Maze; Assistant Program Manager — Jan Graham; Safety Circuit Rider — Ed Bigelow; Communication Specialist — Larry Mendenhall; Program Coordinator — BarBara Holden; Account Clerk — Diane Love; Library Coordinator — John Moody; Secretary — Margaret Hammer;

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The opinions, findings, or recommendations expressed here are those of the Iowa Transportation Center and do not necessarily reflect the views of the Federal Highway Administration or the Iowa Department of Transportation.



# Traffic signs need good management

Sign management is a critical part of any local agency's maintenance program. But all too often, even street and road department personnel give signs little more than a passing glance. That can be a costly mistake as worn-out signs may lead an agency straight into a legal battle.

Keeping traffic signs in good condition is a common problem, according to Bruce Baldwin, Region VII Traffic Operations Engineer for the FHWA. In some jurisdictions, he said, 50 percent of the signs are either worn out, difficult to see, or are difficult to read.

The solution to these problems is a good sign management system (SMS), according to Baldwin. A SMS helps control sign inventories, organizes an effective approach to maintenance, and provides a performance evaluation. In other words, a good SMS helps an agency spot and replace a worn out sign before it becomes a liability.

Two important parts of sign management include periodic review of existing signs and setting aside funds each year for replacement. Baldwin

said a regular review of signs should include a night-time inspection.

"Signs that look okay during the day may be invisible at night," he said.

Baldwin and Jeff Paniati, also of the FHWA, spoke at a recent sign management workshop at Iowa State University. The workshop discussed the advantages of a SMS and how to use the FHWA's computerized SMS developed by Paniati.

Some of the benefits of a SMS include reduced accident risk, defense against tort liability suits, improved budgeting and planning, reduced maintenance, improved traffic flow, and an enhanced community image to visitors and convenience for residents. A computerized system, such as the one available from the FHWA, makes a SMS more efficient, easy to update, and is able to print out a work order. For more information about computerized SMS, see the "Microtechnology" article in the March 1991 issue of *Technology News*.

The FHWA's computerized SMS was designed to be user friendly, flexible,

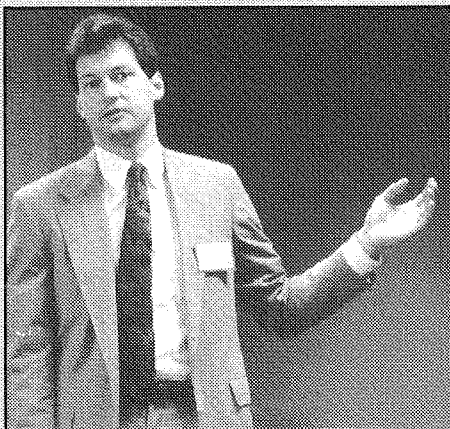
and easy to upgrade. Paniati said an upcoming version will have the capability to determine which signs are on the verge of needing replacement.

An SMS system is necessary because signs must accommodate a wide discrepancy of visual acuity.

"Peoples' ability to see signs varies," Baldwin said. "You have young drivers who may not be paying adequate attention; you have old drivers whose driving ability may be affected by age; and then you have drivers who may be under the influence of alcohol or drugs. And not just illegal drugs. Even over-the-counter drugs can affect driving ability."

A SMS that keeps signage in good order is particularly important for elderly drivers. Iowa agencies in particular need to keep elderly drivers in mind as Iowa is second only to Florida in its elderly population.

Some of the difficulties experienced by older drivers include: a smaller field of view; the need for more illumination; an increase sensitivity to glare; decreased dark adaptation, and poorer depth perception.



Jeff Paniati

## ITC makes SMS software available

The FHWA computer program for sign inventory and analysis (FHWA-SMS) is available from the Iowa Transportation Center. The current version is 3.3 but Paniati plans to upgrade the software this summer.

Any readers representing a local government agency in Iowa may request a copy of the FHWA-SMS program from Ed Bigelow (515/294-8103) at the following address.

Ed Bigelow, Safety Circuit Rider  
Iowa Transportation Center  
194 Town Engineering  
Ames, Iowa 50011

# County engineer BBS soon on-line

The services available from electronic bulletin board services may be the second best reason to buy a computer; it is definitely the best reason to invest in a modem. For often no more than the price of a phone call, electronic bulletin board services (BBS) offer the computer user a variety of software and information. That alone makes a modem a worthwhile investment.

Because operating a BBS is not very difficult or expensive, there are many BBSs in operation. Often, a BBS offers information and software for a specific topic. Other services – like

CompuServe – provide access to a large and varied number of services.

These services might include getting the latest stock quotes, downloading a weather map, or finding help to solve a computer-related

problem. This last service is particularly valuable. Posing a question on-line often brings quick answers from very knowledgeable users; sometimes even the author of the software! Some BBSs are free, others charge a certain amount for the time spent “on-line”, while others charge a membership fee and for the time spent downloading files.

On-line services thrive on participation. Each member is encouraged to

## Microtechnology

By Larry Mendenhall  
Editor, *Technology News*

share his or her particular insights, skills, or solutions to a problem. Many BBS services offer the ability for real-time communicating. That means that at the same time someone types a comment it appears on the monitors of other computer users

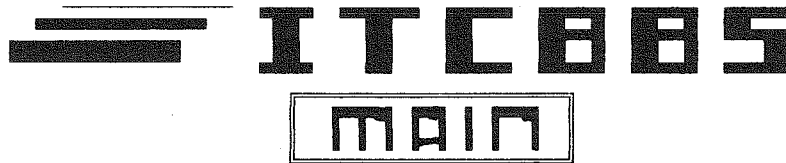
a BBS devoted to county engineering. The committee selected the Iowa Transportation Center to operate the service. Ali Kamyab, an ITC research associate, will be the system operator, or the “sysop.” A sysop is a person who maintains the BBS by backing up files and monitoring the system. The BBS is expected to be on-line later this summer.

The BBS is unusual in that it is a joint effort of the ISACE, the state DOT, and the Iowa Transportation Center. It will contain a variety of information

such as: news bulletins, passive electronic mail, AutoCad files, spreadsheet templates, database source information, an equipment specifications library, a calendar of events, legislative information, problems and solutions, in-

ter-county want ads for equipment, sample document files containing IDOT forms, and regulatory information.

As the service grows, the Computer Committee expects that county engineers will want to share their plans and solutions to particular problems with others. There will be a special “forum” where these answers or requests for help will be posted.



- ITC Technology News is available for downloading.
- ICEA CC members can also join ICEACC conference for more options.
- You are in Public conference with 26 minutes remaining time.

- [ M ..LEAVE MESSAGE ]
- [ F ....UP/DOWNLOAD ]
- [ B ..BULLETIN NEWS ]
- [ Q ..QUESTIONNAIRE ]
- [ J JOIN CONFERENCE ]

- [ N ITC NEWSLETTER ]
- [ W WELCOME SCREEN ]
- [ C COMMENT TO SYSOP ]
- [ ? .....HELP ]
- [ G GOODBYE & LOGOFF ]

»»» COMMAND...? [ ]

**This screen will soon be greeting county engineers and their staff the first time they sign on to the county engineer's bulletin board service. Work is underway to make the BBS user friendly and a source of information for county engineers.**

logged on to the same service. This capability plays a large part in promoting interesting and freewheeling discussions and is another exciting aspect of being on-line.

Iowa county engineers and their staffs will soon be able to enjoy many of the benefits of a bulletin board service. The Iowa State Association of County Engineers Computer Program and Information Coordinating Committee is working to bring on-line

If the BBS proves popular, the Computer Committee will expand its features. For example, instead of passive electronic mail, where a computer user posts a message to be read later, the system could be upgraded to a real-time communication capability.

The BBS is initially set up as a three-year pilot study. The committee will evaluate the service after that period and determine whether the service's benefits warrant keeping it active. During the pilot phase, county staff members will be able to access the BBS free of charge through a toll-free number to help establish a client following. If continued after the study period, there is a possibility of a user's fee.

Initially, only members of the computer committee will have access to the BBS. Later, when all the files are added, access will be expanded to include county engineers and their staffs. City engineers and consultants may get access later.

To access the County Engineer BBS, county offices will need a computer, a modem, and a communication software package. Once the modem is properly installed, the BBS is only a phone call away. The County Engineer BBS software is capable of automatically configuring itself to work with most modem settings.

Modems are relatively simple devices and easy to install. Modems come in either internal or external models. External models connect via a cable to the computer and to the telephone line. In most cases, a modem and a phone can share a single line, but can't use the line both at the same time.



**Tony Ayala of the Des Moines Metropolitan Transit Authority races through an obstacle during competition at the Iowa Transit Rodeo held in June. Ayala was second to Mark Behrens of CyRide in Ames in the Urban Bus Division. Arthur Clark, Great River Bend Services of Davenport, won the Van Division and Jeremiah Ball, University of Iowa CamBus, won the Mini-Bus Division. All division winners advance to national competition.**

Modem is short for modulator-demodulator. When information is sent through a modem, it modulates or changes the computer's digital information into sounds that can travel over the phone wires. The modem receiving the information reverses the process, changing sounds back into digital data, or demodulating.

Any modem purchased should be Hayes-compatible. Hayes-compatible modems conform to a set of standards that make communicating between modems slightly easier. Another thing to consider when buying a modem is the baud rate. The baud rate is the speed at which a modem sends and receives informa-

tion. Early modems had a baud rate of only 300 bytes per second. Now it is common to find modems with baud rates of 9600 and some even have fax capabilities incorporated into their design. Most modems also include the communication software needed to configure the modem and communicate on-line.

The advantages provided by on-line services make a modem a good purchase for even the general computer user. For Iowa county engineers who may need a particular type of culvert design or a specific piece of information as soon as possible, the new BBS will make a modem an indispensable tool.

## Tips From The Field

### Portable sign conforms to MUTCD

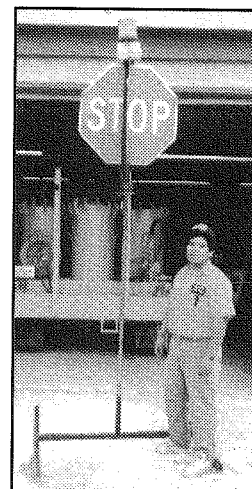
The City of West Des Moines has an easy-to-assemble stop sign that it uses to help control traffic when signals are temporarily out of order.

The portable sign's advantage is that it takes one person about a minute to assemble it, making it ideal for emergency situations. It comes in three sections that easily slide together.

Rick Renataries, a traffic signal technician for West Des Moines, said one advantage is that the sign – at seven-feet tall – conforms to MUTCD regulations. About the only disadvantage, according to Renataries, is that high winds may knock the sign down, making it necessary to use sandbags to keep it from blowing over.

The stop signs used by the City of West Des Moines are signs that are beginning to fade or may have already endured somewhat rough treatment. A sheet metal business cuts the signs which are then bolted onto an angle iron.

"That was about the only way to get the signs facing in all four directions,"



**Rick Renataries, a traffic signal technician for West Des Moines, shows how his department's portable stop sign is assembled (left photo). The sign can be put together (right photo) in minutes.**

Renataries said. "The only other way would have been to build a box and put a sign on each side. That would increase the size of the entire sign."

A flashing amber light on top of the sign alerts motorists that a repair operation is underway. The Traffic and Transportation Department formerly used two flashing lights attached to a cross beam underneath the sign.

However, the flashing lights would usually break when the sign fell over. The department's current signs have just a single flashing light placed on the top of the sign.

For more information on how to build a similar sign, contact Gary Christiansen, Department of Traffic and Transportation, City of West Des Moines, at 515/223-3261.

### Technology News paying \$100 for tips

*Technology News* is looking for a few good tips and is willing to pay good money for them.

One of the *Technology News*' most popular features is "Tips From the Field." These tips have been copied nation-wide by other technology transfer centers and other publications. Chuck Fisher of Spencer and

Willard Wray from Clive compiled the majority of these tips. Both Fisher and Wray are now devoting their attention to other projects and only a few remaining tips from their collection have yet to be published.

To keep this popular and valuable feature going, *Technology News* is offering \$100 to anyone who submits

a good tip. A good "Tips From the Field" tip should be something easy to do or easy for anyone to make. It should not focus on a commercially available product nor appear to be an endorsement of any specific product. *Technology News* is looking for innovative, original ideas. All tips sub-

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## For More Information

**The videotapes and publications listed in this column are available on a loan basis by contacting John H. Moody, Iowa State University, Iowa Transportation Center, 194 Town Engineering, Ames, Iowa 50011 or by calling 515/294-9481 Monday, Wednesday, or Friday mornings.**

**Countermeasures for Sign Vandalism** This 152-page manual describes countermeasures to reduce highway sign vandalism and the costs associated with repairing or replacing vandalized signs. The manual is intended to be used by state and local government personnel involved in maintaining signs. May be kept, supply limited – **Request #201**

**Highway Pavement Distress Identification Manual for Highway Condition and Quality of Highway Construction Survey – March 1979** This 196-page manual provides standardized identification of distress types associated with four types of conventional highway pavements. Each distress type is described along with its primary mechanism. Levels of severity are defined, measurement criteria are provided and photo-

graphs showing each type and severity are provided. May be kept, supply limited – **Request # 98**

**Stop, Yield and No Control Intersections** Observations and measurements made at 140 low-volume intersections in different regions of the country were made to determine their effect on driver behavior, accident experience, and travel time. The results should be of interest to traffic engineers involved in controlling traffic by signing. May be kept, supply limited – **Request #99**

**Maintenance of Small Traffic Signs** This 38-page booklet is designed to help maintain traffic signs. It defines three major types of signs and explains the significance of each type in maintaining well-regulated traffic flow on rural or urban roads. **Request #715**

**Vegetation Control for Safety** This 38-page handbook helps shows how roadside vegetation can be safely maintained to ensure safe motoring. It contains numerous photographs and tables that illustrate the procedures. **Request #806**

**The Cone Wheel** This a promotional videotape by ADDCO of St. Paul, Minnesota, showing a device attached to a pick-up truck that can remove and place traffic cones without exposing people to traffic. **Running time: 4:30; Request #256V**

**Pulse of Progress** This videotape describes the history and reconstruction of the Schuylkill Expressway in Philadelphia which used many TSM strategies that were utilized during this major highway reconstruction project. Several of these strategies could be applied to other projects. **Running time: 21:00; Request #254V**

**Intelligent Vehicle Highway Systems (IVHS)** This videotape from the Minnesota DOT displays a system used by in the Minneapolis-St. Paul area to help relieve freeway congestion. **Running time: 9:00; Request #255V**

**Remote Driven Vehicle** This videotape shows a remote-controlled truck developed in Minnesota that removes the driver from the slow-moving vehicles used in highway maintenance operations. **Running time: 4:30; Request #268V**

### Publication order form

To obtain the materials listed from the ITC, return this form to the Iowa Transportation Center, Iowa State University, Extension to Communities, 194 Town Engineering, Ames, IA, 50011.

	Title	Index No.	No. of Copies
Name _____	_____	_____	_____
Address _____	_____	_____	_____
City/state/zip _____	_____	_____	_____
Phone (____) _____	_____	_____	_____

Please send a complete listing of all publications from your office.

Please send a complete listing of all audio visual materials available.

## Tips wanted

continued from page 6

mitted will be reviewed by *Technology News'* editorial board and their decision on which tips are published is final. Only those tips actually published will merit the \$100.

A tip's chance of being published improves if a photograph or technical drawing is submitted with it. Photographs made with a 35mm camera are preferred. They may be black and white or color. Drawings should have well-made, dark lines and be submitted on an 11" x 14" piece of white paper. Both drawing and photographs will be scanned electronically so good, clear images are important.

Mail your tips to:

Tips

Iowa State University  
Iowa Transportation Center  
194 Town Engineering  
Ames, Iowa 50011-3233  
515/294-9480

Material submitted to the ITC will be returned.

## Conference Calendar

### Passenger Assistance and Sensitivity Skills June 26 - 27

**Marshalltown, Iowa** This workshop is designed to teach passenger assistance techniques, disability awareness, and sensitivity skills to transit-related staff who want to teach those skills to others. To register, call Diane Love 515/294-5642.

### ITE District IV Annual Conference July 8 - 10 Chicago, Illinois

Contact Nancy Seeger 708/491-1000

### TRB Symposium on Highway/Roadside Safety Management Systems, July 14-17 Albuquerque, New Mexico

Contact TRB 202/334-2934

### Iowa Chapter of APWA Fall Meeting August 13-14, Sioux City, Iowa

Contact Larry Stevens 515/673-7472

### APWA International Congress, August 29 - September 3 Boston,

Massachusetts Contact APWA 312/667-2200

### Traffic Engineering for Small Communities September 22 - Ankeny; September 29 - Cedar Rapids; October 1 - Council Bluffs

This is a course designed to provide fundamental concepts of traffic engineering for community and county staff members. Contact BarBara Holden 515/294-3781

### Iowa Chapter of APWA Snow Rodeo September 29-30 Ames, Iowa

Contact Jim Cable 515/294-2862

### And justice for all

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