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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		

Joint maintenance facility is Iowa's first

THE CEDAR Valley Transportation Center (CVTC) is the first three-entitiy joint maintenance facility in Iowa. The facility is shared by Floyd County, Charles City, and the Iowa DOT.

How it began

Floyd County and Iowa DOT officials began discussing a joint maintenance facility in 1995. The initial idea was to build a shared salt storage facility. Through discussion of the benefits of facility sharing, the idea was expanded to a joint facility for vehicle and highway maintenance and storage.

Charles City's existing facilities, located in a flood plain, suffered flooding in 1993 and 1999, so Charles City was invited to join the venture.

Land was purchased for the location of the facility in 1998, and construction plans began.

A cooperative effort

To manage this joint project, a "joint powers board" was created. The board was established under section 28E of the Iowa Code to conduct all business of the CVTC. Board members are

- former Floyd County Engineer Lyle Laartz
- current Floyd County Engineer Dusten Rolando
- Charles City Director of Public Works/City Engineer Dan Barrett
- Iowa DOT Area Maintenance Manager Mark Black

Dan Barrett discusses the Joint Powers Board: "What is exciting about this process is we are an independent board. We are a legal entity that has been formed to act as a governing body for this facility."

Because this project is the first of its kind in Iowa, the board is still developing many procedures for managing costs related to the joint facility. Each entity still issues its own employees' paychecks, but a budget is being developed that will address the cost of shared expenses. The board is developing a billing, trade, or barter process to manage the costs of working on each other's systems.

JOINT . . . on page 2

This new maintenance facility is a joint project of Floyd County, Charles City, and the Iowa DOT.



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JOINT . . . from page 1

The main building of the new facility is approximately 50,000 square feet and houses about 40 employees representing all three entities. The facility includes 42 vehicle bays: 15 for the Iowa DOT, 15 for Floyd county, 11 for Charles City, and one unassigned.

Construction plans have begun for additional buildings, including

- a fueling station with canopy, six pumps, and tracking system
- a salt, brine, and sand storage building that will store a winter's supply of materials
- a cold storage building

Cost and convenience

This project resulted in approximately \$753,000 in savings compared to construction costs for building three separate facilities. The division of the main building construction costs is based on each entity's space needs; the storage building construction costs are based on each entity's consumption needs.

Many of the inventories will be handled by the Iowa DOT, and each entity will be charged costs based on consumption. Currently, Charles City is paying up front for all common costs such as utilities, contracted services, and building operations. The other two entities are reimbursing Charles City for their portion of the costs, based on percentage of space used.

Each entity is equipping its own offices. Some other items will be shared, including

- road maintenance engineering professionals
- repair, bulk fuel, and chemical inventories
- large quantity volume discounts
- road maintenance equipment, trucks, and vehicles
- information, research, training, and expertise
- computers, weather systems, communications, and technology

Keys to success

Dan Barrett says that, for the board, "The biggest challenge was to have the courage to be independent of all three bureaucracies and try to take the best

"One of the best things we did was to set up committees of front line employees."

**Dan Barrett
Charles City Engineer**

options available during construction and setting up the operational policies.

"One of the best things we did was to set up committees of front line employees. We have a construction committee and a policy committee to advise us on issues. The facility has an operational policy mostly developed by employees. Their buy-in makes the facility operate more as a single facility and not three separate operations out of the same building."

Will Zitterich, Iowa DOT assistant maintenance office director, says, "The most important element in forging a partnership is to think of your partner's position and find a way to make your partner a success in this relationship. If each partner finds it an advantage to be part of the partnership it will succeed."

Floyd County's Lyle Laartz, who was a part of the joint project from its inception, recently retired. Dusten Rolando, Floyd County's new engineer, says that though he wasn't able to be a part of all the planning and construction for the joint maintenance facility, he is looking forward to the exchange of ideas and information between the partners.

No formal guidelines for assessing the project's success have been established, but board members say they see no limits to cost savings and manpower and equipment sharing. In addition, the shared facility allows them to provide better service to the public.

For more information

Contact Dusten Rolando, Floyd County engineer, 641-257-6151, engr@fiai.net; Dan Barrett, Charles City engineer, 641-257-6309, dbarret@city.charles-city.k12.ia.us; Mark Black, Iowa DOT area maintenance manager, 641-423-8516, mark.black@dot.state.ia.us.

To obtain a copy of a case study for this project contact Mark Edelman, Iowa State University professor of economics, 515-294-6144, medelman@iastate.edu. •

Sharing resources among Iowa's agencies

IF YOU ARE INTERESTED in creating shared transportation projects, the *Transportation Sharing Project Manual* may be a helpful resource. Developed by the Iowa DOT, the Iowa Department of Economic Development (Iowa DED), and the Institute of Public Affairs at the University of Iowa, this manual offers guidelines and information on forming joint transportation projects.

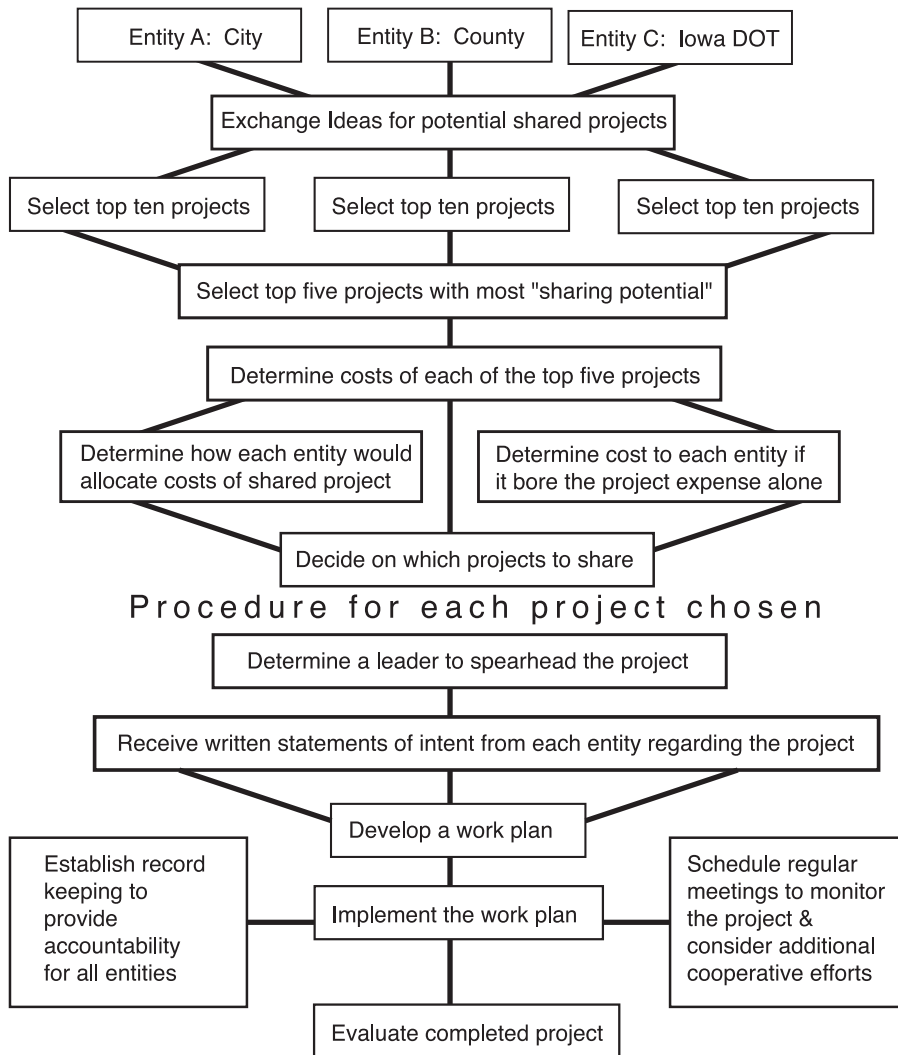
In 1995, Governor Branstad designated a Blue Ribbon Task Force to make recommendations for maximizing Iowa's resources for road construction and maintenance. The Task Force appointed a Sharing Subcommittee to study transportation sharing projects already in place and under develop-

ment. The *Transportation Sharing Project Manual* is a result of that subcommittee's activities.

Included in this manual is information about

- existing transportation sharing pilot projects
- initiating transportation sharing projects
- project selection criteria
- project implementation
- legal problems and possible solutions
- resources and sample documents

To obtain a copy of this manual, or other project sharing publications, contact the Iowa DOT, 515-239-1111; Community and Rural Development Division at the Iowa DED, 515-242-4922; or the Institute of Public Affairs, 319-335-4520. •



Possible flowchart for selecting, implementing, and evaluating shared projects

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 comment, make suggestions, or ask questions about any aspect of LTAP.

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Center for Transportation Research and Education

IOWA STATE UNIVERSITY

Controlling dust on unpaved roads

ONE TON—that's how much dust is kicked up in a year by every vehicle traveling daily on a particular mile of unpaved road. How do you plan to control traffic-generated (fugitive) dust on your county's roads in the coming summer months?

Challenges

Fugitive dust is a nuisance to drivers, nearby residents, and county agencies that maintain these roads. Fugitive dust results in

- increased expenses for aggregate and road maintenance
- decreased visibility for drivers
- hazardous (rough) road surface
- complaints from nearby residents

The Iowa Administrative Code (Rule 23.3(2)(3)(1)) requires public highway authorities to take "corrective action" when fugitive dust is a problem.

Where it comes from

Fugitive dust consists of subgrade soil that has worked its way up through the aggregate and/or fine particles (fines) in the aggregate mix. Fines act as a cement or stabilizer for the mix and help prevent potholes, washboards, and washouts. Because fines are necessary in the mix as a cement or stabilizer, a certain amount of dust is inevitable.

The solutions: geosynthetics and dust suppressants

To prevent soft subgrade soil from becoming fugitive dust, a geosynthetic material can be placed six

to eight inches below the surface aggregate. The cost for this material is high, but the cost for installation is fairly low. Unfortunately, this material may degrade with exposure to ultraviolet rays.

Dust suppressants used today are either inorganic or organic. See the table at right for a quick overview.

Inorganic suppressants, such as calcium chloride, absorb water from the air and reduce the rate of evaporation from the aggregate.

Organic dust suppressants bind materials so the fines do not separate from the large aggregate particles and become airborne. The most common binder used in Iowa is lignin, or tree sap.

The applied costs of organic and inorganic suppressants are generally very similar.

A concern with any dust suppressant is whether it poses potential environmental problems during the leaching process following rainfall.

Materials are always being tested to discover the most effective, safest, and cheapest way to control fugitive dust (see sidebar below).

For more information

Contact Royce Fichtner, Marshall County engineer, 641-754-6343, rfichtner@co.marshall.ia.us; Tim Trumbull, Iowa Waste Reduction Center environmental specialist, 319-273-8905, tim.trumbull@uni.edu. For more information about dust suppressants, contact Jim Hogan, CTRE library coordinator, 515-294-9481, hoganj@iastate.edu. •

At least two Iowa agencies have had problems with nails remaining in ground-up shingles [used as a dust suppressant], which have punctured travelers' tires.

What's new in dust control?

NEW MATERIALS are always being tested for use as dust suppressants. Often the materials result from recycling efforts and from attempts to take advantage of natural materials that may be safer for the environment.

Do you smell French fries?

Last year, the Iowa Waste Reduction Center (IWRC) at the University of Northern Iowa (UNI) conducted a study that was overseen by the Department of Natural Resources (DNR). The preliminary report discusses applying used vegetable oil as a dust suppressant.

Used vegetable oil was found to be as effective a dust suppressant as the soy oil tested, but the used vegetable oil proved to be more cost effective during initial application. The food service venues using vegetable oil must usually pay for its disposal, so currently there is no cost for collecting the used vegetable oil from the venues.

Unfortunately, early in the study the vegetable oil contributed to the formation of ruts, which may result in higher road maintenance costs later on. Also, the fried food smell lingered through the summer months.

Old roads and roofs

Recycled asphalt from roads or roofing material can also be used as a dust suppressant. Using millings from asphalt roads as a dust

Material	Application	Approximate Cost per Road Foot* (one application)	Advantages	Disadvantages
Calcium chloride (CaCl ₂)	flakes mixed with water	\$0.29	absorbs water from air; reduces rate of evaporation; can be repaired by blading	corrosive to most metals; may cause slick road conditions during winter weather conditions
Lignin derivatives (lignosulfates)	liquid	\$0.26	binds fines to large aggregate particles	corrosive to some metals; blading reduces effectiveness
Used fryer oil (vegetable oil)	liquid	\$0.25	recycles used materials; noncorrosive	cannot be repaired by blading; may stick to undercarriages of vehicles; may contribute to rutting
Soy oil	liquid	\$0.40	noncorrosive	cannot be repaired by blading; may stick to undercarriages of vehicles
Asphalt shingles (ground up)	mixed with water	\$0.12	recycles used materials	may result in tire damage if all nails are not removed
Asphalt millings (recycled asphalt materials)	solid	\$1.10	recycles used materials; can be repaired by blading	may contribute to rutting
Bentonite	mixed with water	\$0.31	effective for up to 2–3 years	effectiveness depends on type of aggregate

***Cost of materials will vary based on supplier, percentage of product concentration used for solution, delivery charges, etc. More than one application may be needed, depending on amount of traffic and rainfall.**

An overview of organic and inorganic dust suppressants

suppressant may help county agencies save on disposal or storage costs for the used material. However, millings can contribute to the formation of road ruts, resulting in higher maintenance costs.

If asphalt shingles are cleaned properly, they can be ground up and mixed with water to form an effective dust suppressant. At least two Iowa agencies, however, have had problems with nails remaining in the ground-up shingles, which have punctured travelers' tires.

In our own backyard

A natural clay material, bentonite, has some advantages over other inorganic dust suppressants. Bentonite can be used for long-term treatment (two to three years), is effective, and in the long term can be less expensive than chemical road treatments.

Bentonite does not pose any threat of metal corrosion or environmental damage.

The choice to use bentonite depends on the type of aggregate being used. Bentonite's negative charge allows the material to adhere to limestone aggregate, but these same electrochemical properties prevent bentonite from adhering to other negatively charged (igneous rock) aggregate.

For more information

For information about the IWRC study, contact Tim Trumbull, Iowa Waste Reduction Center environmental specialist, 319-273-8905, tim.trumbull@uni.edu. For general information about dust suppressants, contact Jim Hogan, CTRE library coordinator, 515-294-9481, hoganj@iastate.edu. •

Planning for funding needs: improving the HWYNEEDS software

The “gravel road system is so dynamic it just doesn’t make sense to include it in the data collection process.”

Omar Smadi,
Pavement Management
Specialist

EFFECTIVE long-term planning for transportation projects requires consistent funding levels—something Iowa’s counties have not been able to count on.

A recent research project sponsored by the Iowa Highway Research Board (TR-433) is helping to change that, beginning with gravel road needs in the 2002 quadrennial need study. Preventing the volatile funding fluctuations from one need study to the next was the main objective of Omar Smadi’s research on the HWYNEEDS computer program.

Smadi, pavement management specialist at the Center for Transportation Research and Education, has developed “a better planning tool” for counties’ future needs. He investigated HWYNEEDS’s parameters and their impact on the determination of needs.

HWYNEEDS, developed by the FHWA, was adopted by the Iowa DOT in the early 1980s as the main programming tool for the needs study. It forecasts the condition of highways, automates the determination of financial needs, and provides a tool for determining the road use tax fund (RUTF) allocations to counties.

The allocations are based partly on the total area of a county (30 percent), and partly on highway needs (70 percent). The condition data used to calculate needs have been the main culprit in the funding swings.

The Iowa DOT conducts visual surveys of the state’s county road network every year, but only one-tenth of the network can be surveyed in any given year. Consequently pavement data on some parts of the network are

Removing gravel roads from the visual survey can reduce the survey cycle of paved roads from 10 years to four years.

up to 10 years old during a need study. These old condition data can dramatically skew the funding allocations.

Changes for gravel roads

For the 2002 need study, Smadi says that the Iowa DOT will try to minimize the impact of condition data by treating gravel roads differently in HWYNEEDS. Gravel roads account for approximately 47 percent of the total needs. In his research, Smadi developed a formula based on past needs studies from 1990, 1994, and 1998, which predicts gravel road needs based on the number of miles and the vehicle miles traveled.

By using this formula, approximately 60 percent of the total funding will be stable. Also, by removing gravel roads from the visual survey, the Iowa DOT can reduce its survey cycle of paved roads from 10 years to four years.

The “gravel road system is so dynamic it just doesn’t make sense to include it in the data collection process,” Smadi says.

Automated data collection

In an earlier research project, Smadi, Tom Maze, and Jon Resler investigated the use of automated distress data (data that were collected using automated equipment) with HWYNEEDS. These data are objective, consistent, and more current because they are on a two-year collection cycle rather than a 10-year cycle.

Distress data have been electronically collected on approximately 75 percent of Iowa’s paved roads, but the entire roadway system will not be covered in time for the 2002 needs study. Iowa counties are assessing funding mechanisms and data collection procedures for the use of automated distress data during the 2006 needs study.

The county engineers’ executive board has approved the formula-based approach for assessing gravel roads needs, and it has also approved a recommendation to automatically collect data on the entire county road paved system. “It’s a more fair approach,” Smadi says.

For more information

Contact Omar Smadi at CTRE for more information about this research project or about the Iowa Pavement Management Program, 515-294-7110, smadi@iastate.edu. •



Bidding thresholds may increase

NEW IOWA LEGISLATION will have a moderate impact on city and county transportation agencies and how they let bids for road projects. The legislation (House File 324) takes effect July 1.

The new legislation will have an impact in two basic ways: bidding thresholds and city/county accounting procedures.

Bidding thresholds

Bidding thresholds will become adjustable under the new legislation. Currently, agencies can complete road projects either in house (if their project cost estimates fall under the bidding threshold) or by requesting proposals. If agencies' estimates are over the threshold amount, the projects must go through a formal bid letting process.

The legislation provides for the formation of a committee consisting of three representatives from local public sector agencies, three representatives of private sector contractor organizations, and one Iowa DOT representative. The committee, which will meet at least every two years, will compare bid thresholds to the construction price index.

The committee will make recommendations about increasing or decreasing the bid thresholds, although they will never go beneath the minimums established in the legislation:

- \$50,000 for counties
- \$50,000 for cities with population of 50,000 or more (new minimum)
- \$25,000 for cities under 50,000 population

Any changes in the bidding thresholds will take effect on January 1 following the advisory committee's meeting.

The increase to the \$50,000 threshold for cities with 50,000 or more population will affect nine Iowa cities including Ames, Cedar Rapids, Council Bluffs, Davenport, Des Moines, Dubuque, Iowa City, Sioux City, and Waterloo.

City/county accounting procedures

In some cases cities have been using less exact accounting procedures than counties for estimating the costs of road projects. For example, city estimates have sometimes failed to include costs of things like leasing or renting equipment. Consequently, as a result of lower project estimates, cities

have been able to do more of their road projects in house.

Under House File 324, an advisory committee will be established to assist cities and counties with developing true cost accounting. This method will help cities and counties more accurately estimate the costs of their future projects.

For more information

If you have questions about complying with House File 324, contact your agency's legal department •

The new legislation will have an impact [on] bidding thresholds and city/county accounting procedures.

How-to for concrete and asphalt pavement repair

FOUR MANUALS are available to help your shop improve the following maintenance activities:

- sealing and filling cracks in asphalt surfaced pavements
- repairing potholes in asphalt pavements
- repairing joint seals and partial-depth spalls in concrete surfaced pavements

Originally published as a set of reports through the Strategic Highway Research Program, this how-to information has been updated and repackaged as a series of practical manuals:

Materials and Procedures for Rapid Repair of Partial-Depth Spalls in Concrete Pavements, December 1999 (FHWA-RD-99-152).

Materials and Procedures for Repair of Potholes in Asphalt-Surfaced Pavements, December 1999 (FHWA-RD-99-168).

Materials and Procedures for Repair of Joint Seals in Portland Cement Concrete Pavement Joints, December 1999 (FHWA-RD-99-146).

Materials and Procedures for Sealing and Filling Cracks in Asphalt-Surfaced Pavements, December 1999 (FHWA-RD-99-147).

How to access

The manuals are available in portable document format (.pdf) on the web, www.tfsrc.gov/pavement/ltp/tp/reports.htm (currently items 33-36 on the page). You can also borrow copies from CTRE's library; contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu (see descriptions on page 16). Or purchase your own from the National Technical Information Service, 703-605-6000.

GASB 34: Look before you leap

Editor's note: *The goal of this article is to present objective information. CTRE is heavily involved in developing and supporting the implementation of pavement and bridge management systems, both important elements of the modified approach to managing assets.*

AT FIRST GLANCE, local agencies might assume the most straightforward approach to complying with GASB 34 (see background information below) is to use the depreciation method for reporting capital assets. After all, as described in earlier articles in *Technology News*, using the depreciation method does not require a system for managing assets, as does the modified approach. And most public agency financial officers are already very knowledgeable about depreciation.

Before adopting the depreciation method, however, agencies should understand that depreciating the value of capital assets like roads and bridges may be a much more complex process than it seems.

An example of depreciation's complexity

One area where depreciation gets complicated is the necessity for capitalizing preservation expenses. Preservation expenses are generally considered to be those outlays that extend the useful life of an asset beyond its original estimated useful life but do not increase the capacity or efficiency of the asset¹. Using the depreciation method, any asset preservation expenses must be added to the value of the assets (in other words, capitalized).

Highway agencies using the depreciation method will generally divide highways into segments representing construction projects. On each segment, preservation activities will have to be expensed and depreciation computed. Depreciation and preservation will be totaled across all segments to arrive at a valuation for the Comprehensive Annual Financial Report.

If at some time part of a segment is rebuilt and the remainder is preserved, tracking costs and value for that segment will require dividing the original segment into two or more segments and keeping track of each. The figure at right illustrates one possible scenario.

As this one simple example shows, the challenge of expensing preservation activities changes depreciation from a fairly straightforward formula to a complex, time-consuming, and, possibly, error-prone activity.

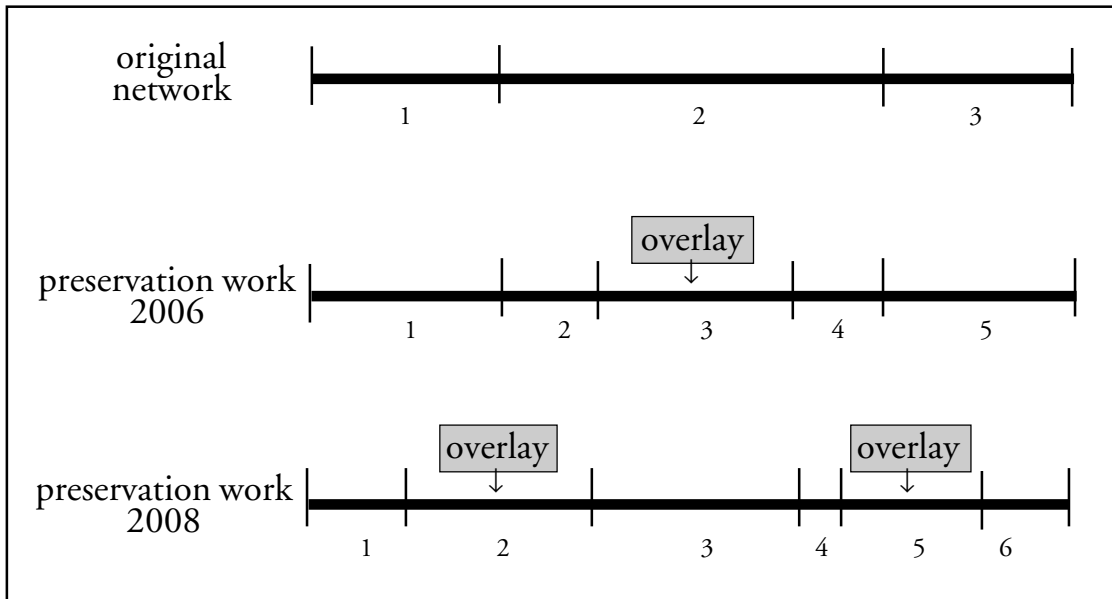
Ultimately, establishing a record keeping system to use with depreciation formulae or software may require nearly the same level of effort as that required for using the modified approach.

GASB 34: Background

GOVERNMENT Accounting Standards Board Statement 34 (GASB 34), issued in June 1999, outlines the broadest changes in government accounting practices since Generally Accepted Accounting Practices (GAAP) were developed in the 1930s.* Primarily, GASB 34 requires government agencies using Consolidated Annual Financial Reports to report the value of their capital assets.

GASB 34 identifies two acceptable methods for reporting capital assets: the depreciation approach and the modified approach. See earlier GASB 34-related articles from *Technology News* (www.ctre.iastate.edu/gasb34/), which outline who is affected by GASB 34, a schedule for compliance, and, very generally, characteristics of the depreciation and modified approaches.

* Statement made by Jay Fountain, Jr., CPA, Assistant Director of Research, GASB, at the "GASB Statement 34 Compliance Peer Exchange: What, Why, and How," organized by the American Association of State Highway and Transportation Officials, Nashville, Tennessee, April 27, 2001.



The depreciation method will require a fairly complex recordkeeping system that will allow agencies to, for example, capitalize preservation expenses appropriately for different segments of roadway.

The modified approach

GASB 34 allowed the modified approach because it was argued that public agencies' goal is not to depreciate the value of roads and bridges but to maintain roads and bridges at or above a certain condition level. Over several years an asset may be substantially renewed (preserved), but it is still fundamentally the same asset, performing the same function.

As discussed in earlier articles in *Technology News* (see www.ctre.iastate.edu/gasb34/), the modified approach requires that agencies (1) use a system for monitoring and managing the performance of infrastructure assets (e.g., pavement or bridge management systems) and (2) maintain assets at or above a minimum condition level, set by the agency itself. The GASB requirements for bridge or pavement systems that satisfy the modified approach are really quite modest. For example, to manage a street or highway network, any multiyear, network-level pavement management system will do.

Important decisions

GASB 34 is quite flexible. Agencies can decide to use one reporting method and later switch to the other. Agencies can use the modified method on one network of assets and the depreciation method on others. For example, the Texas Department of Transportation is using the modified method on its highways and the depreciation method on its bridges.

The benefit of selecting the modified approach is that it represents a more sound approach to managing long-lived infrastructure assets—that is, to implementing management systems that help agencies make better decisions about maintaining and preserving their roads and bridges.

In fact, because the modified approach supports better management practices, the American Public Works Association (APWA) Board of Directors recently passed a policy statement urging local and state governments to adopt the modified approach to meet GASB 34 requirements where feasible.²

It's up to each agency to decide which approach to apply. The level of effort required to implement either of them will likely be similar. •

¹ Definition taken from http://www.Window.State.TX.US/comptrol/san/gasb/local/gasb34_localintro.html. Preservation costs should be capitalized under the depreciation approach and expensed under the modified approach.

² GASB-34 Policy Statement Passed by Board of Directors, posted December 8, 2000, at <http://www.apwa.net/HotTopics/index.asp?PrinterFriendly=Yes&topic=73>

This article was prepared by Tom Maze, vice president of Howard R. Green Company, and Omar Smadi, CTRE's pavement management specialist. A more detailed version of this article appears on CTRE's web site, www.ctre.iastate.edu/.

It's up to each agency to decide which approach to apply. The level of effort required to implement either of them will likely be similar.

Editor's note: This article was revised on July 27, 2001, as follows: Criteria for determining if a site is eligible to be placed on the National Register were corrected.

Iowa Tribal Summit on Historic Preservation and Transportation: What does it mean for local governments?

by Duane Smith, Associate Director of Outreach

THE IOWA DIVISION of FHWA and the Iowa DOT recently hosted a historic, first-in-the-nation summit with representatives from Indian tribes having current or historical interests in Iowa. The topic: Section 106 reviews for road improvements. The goal: Develop common ground for agency-tribal communications about historic preservation and transportation.

Why would you be interested? Local agencies' responsibility to comply with Section 106 of the National Historic Preservation Act (NHPA) should affect the way you approach some road projects.

NHPA? Section 106?

Through NHPA, enacted in 1966, congress established a comprehensive program to preserve the country's historical and cultural foundations. Section 106 of NHPA requires federal agencies to consider the effects of their actions (including road construction and other road-related activities) on historic properties and to provide Indian tribal communities with an opportunity to comment on federal projects, including highway projects, before the projects are implemented.

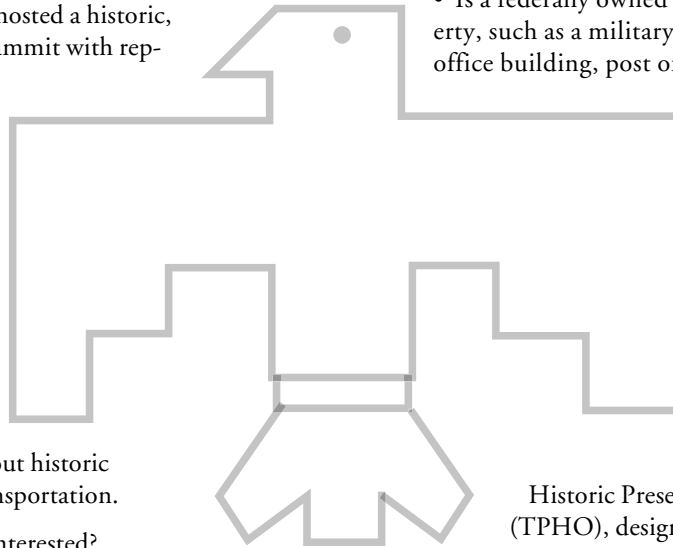
The regulations implementing Section 106 (36CFR 800) were revised in January 2001 to provide greater flexibility and, generally, to clarify its requirements.

How does this affect local governments?

If the federal government is involved in your local road project, you need to comply with NHPA's Section 106. To determine if there is federal involvement, ask these questions:

- Is the project receiving federal funds, grants, or loans?

- Does the project require a federal permit, license, or other approval?
- Is a federally owned or controlled property, such as a military base, park, forest, office building, post office, or courthouse, involved?



If the answer to any of these questions is yes, you must initiate a Section 106 review with the State Historic Preservation Officer (SHPO). If tribal lands are involved, a Tribal

Historic Preservation Officer (TPHO), designated by each federally recognized Indian tribe, will also participate in the review process.

The purpose of Section 106 is not to stop projects. It is to ensure that agencies fully consider historical preservation issues and the views of the public (including Indian tribes) during project planning.

What is a Section 106 review?

To successfully complete an NHPA Section 106 review, agencies must

- determine if Section 106 applies to a given project and, if so, initiate the review,
- gather information to decide if any properties in the project area are listed on or eligible for the National Register of Historic Places,
- determine how historic properties might be affected by the project,
- explore alternatives to avoid or reduce harm to historical properties, and
- reach an agreement with tribal and state officials about measures to deal with or mitigate any "adverse effects."

Criteria. A site is eligible for the National Register only if it

- is associated with historically important person(s) or events,

Orville Little Owl, representing the Mandan/Hunkpapakota tribe, opened each day of the tribal summit.

Photo courtesy of J. Cory Heintz, photographer, Iowa DOT.



- 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 the precise language describing the criteria at www.cr.nps.gov/nr/listing.htm.)

Criteria relevant to Indian tribes include sites of historic or religious significance.

Adverse effects. Adverse effect occurs if a project may alter the characteristics that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property.

Adverse effects can be direct or indirect. They may include reasonably foreseeable impacts that may occur later in time, or cumulative impacts.

Typical examples of adverse effects are

- physical destruction or damage,
- alteration inconsistent with the Secretary of the Interior’s Standards for the Treatment of Historic Properties,
- relocation of the property,
- change in the character of the property’s use or setting,
- introduction of incompatible visual, atmospheric, or audible elements,
- neglect and deterioration, and/or
- transfer, lease, or sale out of federal control without adequate preservation restrictions.

Memorandum of agreement (MOA). When it’s determined that historic properties will be harmed, Section 106 review usually ends with a legally binding MOA between the agency and interested parties (e.g., Indian tribes). The MOA establishes how the agency will address identified adverse effects.

What was accomplished at the summit?

Through the summit, agencies and tribes have begun developing a relationship based on trust and communication.

The tribal summit initiated a process for identifying effective communication strategies (consultation) between state/federal agencies and Indian tribes with interests in Iowa lands. An important first step is being planned:

Tribal representatives will be invited to visit a state project corridor at various stages in the project planning process. At each stage, agency and tribal representatives will review the historical, archeological, and related information that’s been collected about the corridor. Through this process, tribal representatives will gain a better understanding of the project planning process. Both tribes and agencies will then work together to identify those critical points in the project planning process where tribes will be consulted.

The Iowa Division of the FHWA will include those critical consultation points in a draft general agreement. The agreement will guide how the FHWA and Iowa DOT will conduct Section 106–related business with Indian tribes. Working closely with each of the tribes interested in Iowa lands, the FHWA will finetune individual working agreements with each tribe.

Agency representatives at the summit learned the critical value of personal, face-to-face communications with Indian tribal representatives. The FHWA and Iowa DOT may therefore periodically conduct additional summits. City and county agencies will be encouraged to participate and take advantage of these valuable opportunities for developing personal working relationships with tribal leaders.

For more information

Much of the information for this article came from “Protecting Historic Properties, A Citizen’s Guide to Section 106 Review” prepared by the Advisory Council on Historic Preservation, Washington D.C.

Summit proceedings will soon be published summarizing the event’s activities and results. You’ll be able to access the proceedings from the Iowa DOT and CTRE web sites (www.dot.state.ia.us/, or www.ctre.iastate.edu/). Hard copies will be available for loan through CTRE’s library; see contact information below.

In fall 2001, the Local Systems Office of the Iowa DOT will distribute a new project development information packet to guide local public agencies as they develop federal aid projects. The packets will include information about Section 106 reviews.

For a copy of the informational video, “Through the Generations: Identifying and Protecting Traditional Cultural Places,” developed by the U.S. Department of the Interior and others, contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu. •

If the federal government is involved in your local road project, you need to comply with NHPA’s Section 106.

For more information

FOR INFORMATION about the Iowa Tribal Summit and/or the implications of Section 106 for Iowa’s local agencies, contact any of the following:

Saleem Baig, Transportation Services Engineer, Office of Local Systems, Iowa DOT, 515-239-1051, saleem.baig@dot.state.ia.us

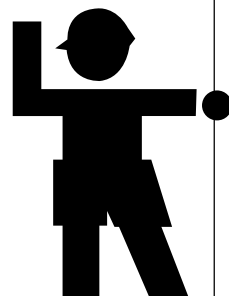
Doug Jones, Archaeologist, State Historic Preservation Office, 515-281-8744, doug.jones@dca.state.ia.us

Gerald Kennedy, Environment and Realty Manager, Iowa Division, FHWA, 515-233-7317, gerald.kennedy@fhwa.dot.gov

Mark Kerper, Corridor Development Engineer, Iowa DOT, 515-239-1591, mark.kerper@dot.state.ia.us

Jim Rost, Environmental Services Director, Iowa DOT, 515-239-1798, james.rost@dot.state.ia.us

safety shorts



Complying with the millenium MUTCD

by Tom McDonald, Safety Circuit Rider

CHANGES and new features in the millenium edition of the MUTCD won't become official in Iowa until the state adopts the new edition. The Iowa DOT anticipates that Iowa's Administrative Code will be so modified later this year. However, even that action won't require local agencies to comply immediately with many of the more substantial and potentially costly requirements.

In recognition of local budgetary constraints, the FHWA has provided 3- to 15-year phase-in compliance periods for 22 new MUTCD standards. For example, agencies won't have to comply with a

change in reduced speed ahead signing (Section 2B.16) for seven years—January 17, 2008. And agencies will have 15 years from January 9, 1997, to comply with minimum letter size requirements for street name signs (Section 2D.38).

Please note that, regardless of the date Iowa adopts the millenium edition of the MUTCD, most compliance periods began with the effective date of the new MUTCD: January 17, 2001.

A calendar of compliance phase-in periods is shown on page 13 and on the FHWA's web page, <http://mutcd.fhwa.dot.gov>. Future issues of *Technology News* will contain periodic reminders of these compliance dates. •

New Iowa guide supplements the MUTCD

by Tom McDonald, Safety Circuit Rider

CHECK YOUR MAILBOX for your hot-off-the-press copy of a valuable new resource for your shop: *Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties*.

Funded by the Iowa Highway Research Board Project (TR-441), this manual was developed with the invaluable assistance of a hard-working advisory committee of city, county, and Iowa DOT staff, as well as vendors and other safety professionals.

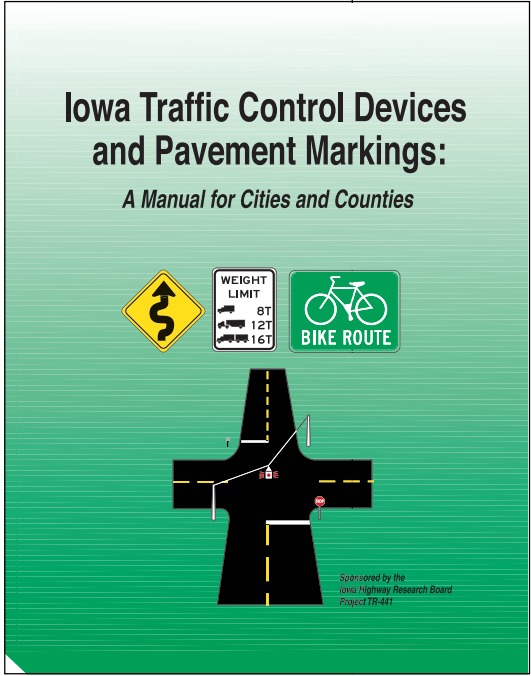
Iowa's manual supplements the *Manual on Uniform Traffic Control Devices* (MUTCD), which includes requirements and recommendations for signs, devices, and markings used on public roads. In addition to providing the Iowa angle on these topics, Iowa's manual also provides advice on specific issues of local interest. It also contains hundreds of detailed, color illustrations.

Beginning with this issue of *Technology News*, I'll introduce sections

from Iowa's new manual. The following topics are thoroughly covered in the section on "Signs":

- purpose and basic requirements of signs as defined in the MUTCD, including elements to consider in the design and installation of signs and a description of sign types
- providing adequate visibility, including recommendations for sign dimensions, lettering size, and sign orientation (These factors are especially important at night, particularly for older drivers.)
- a list of common colors and a detailed description of the many types of sheetings for signs, with features (including substrate or backing type), cost, performance, and popular vendors
- the benefit of insisting on appropriate warranties from vendors for new sign materials
- advantages of recycling deficient and/or vandalized signs and devices

The Iowa Highway Research Board is providing free copies of the manual to Iowa's counties and cities. In addition, the manual is available for loan (P1524) or in portable document format (.pdf) digital files on CD-ROM through CTRE's library; contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu. Digital files will also be available on the web, www.ctre.iastate.edu/. •



Phase-in compliance schedule for millenium MUTCD

FOLLOWING is a list of compliance dates for the millenium edition of the MUTCD. Consult the Federal Register (accessible from FHWA's web page, <http://mutcd.fhwa.dot.gov>) for detailed information regarding specific sections.

January 3, 2003

Section 3B.01—Yellow Centerline and Left Edge Line Pavement Markings and Warrants
Section 3B.07—Warrants for Use of Edge Lines

January 17, 2004

Section 2B.04—STOP Sign
Compliance period of 3 years

January 17, 2005

Section 4E.06—Accessible Pedestrian Signals
Compliance period of 4 years
Section 4E.08—Accessible Pedestrian Signal Detectors
Compliance period of 4 years

January 17, 2006

Section 9B.04—Bicycle Lane Signs
Compliance period of 5 years
Section 10—Automatic gates, flashing-light signals, and blank-out signs
Compliance period of 5 years
Section 10C.11—Highway-Rail Advance Warning Signs: Removal of existing W10-6 series signs
Compliance period of 5 years

January 17, 2007

Section 2B.49—High Occupancy Vehicle Lanes
Compliance period of 6 years
Section 2B.50—High Occupancy Vehicle Sign Applications and Placement
Compliance period of 6 years
Section 9—Deletion of preferential lane symbol (diamond) for bicycles and pavement markings
Compliance period of 6 years

January 17, 2008

Section 2B.16—Reduced Speed Ahead Sign
Compliance period of 7 years
Section 2B.32—ONE WAY Sign
Compliance period of 7 years
Section 2C.02—Application of Warning Signs
Compliance period of 7 years
Section 2E.29—Interchange Exit Numbering
Compliance period of 7 years
Section 2E.31—Advance Guide signs
Compliance period of 7 years

January 17, 2011

Section 2C.24—Shoulder Signs
Compliance period of 10 years
Section 2C.37—Crossing Signs
Compliance period of 10 years
Section 2F.05—Size of Lettering
Compliance period of 10 years
Section 8B.02—Highway-Rail Grade Crossing (Crossbuck) Sign
Compliance period of 10 years

January 9, 2012

Section 9B.15—Bicycle Crossing Warning Signs
Compliance period of 7 years
Section 2D.38—Letter Size of Street Name Signs
Compliance period of 15 years from Jan. 9, 1997

Eliminate construction accidents in work zones

The majority of highway construction worker deaths in the work zone are caused by incidents not related to traffic.

HIGHWAY construction workers' risk of death on the job is seven times greater than the average worker's, making highway construction one of the most dangerous occupations in the country, according to the Laborer's Health and Safety Fund of North America.

Although a majority of the total deaths (motorists, pedestrians, and highway construction workers) in work zones are due to traffic moving through the work zone, the majority of *highway construction worker* deaths in the work zone are caused by incidents *not* related to traffic.

Nationally, of the 133 highway workers killed in 1996, 65 percent were related to construction accidents, not to passing traffic.

Construction accidents

Construction accidents in work zones consist of "all nontraffic accidents involving construction activity," according to a 1999 *Transportation Research Record* paper by James Bryden and Laurel Andrew. Construction accidents may also include vehicular accidents involving construction equipment in the work area, like a truck that tips while unloading.

Work zone construction accidents may be caused by

- falls from ladders, trucks, structures, or equipment
- contact with electricity, like overhead wires
- tools or small equipment such as hammers, saws, jackhammers, and sandblast nozzles
- construction vehicles and large construction equipment
- moving or falling loads
- structural collapses
- trench or excavation collapses
- contact with construction materials
- burns
- animal or insect bites

Be safe!

Supervisors and staff can work together to keep everybody safe in the work zone.

Supervisors should provide the following:

- **an internal traffic control plan for the work zone.** The plan should make necessary movements within the work zone as safe as possible. For example, the plan may eliminate the need for backing, a maneuver that can put workers at risk.
- **training.** Safety-related training should be a part of every work zone worker's job description. Possibilities include

Work zone safety workshops. Iowa's workshops, held every January through March, feature general instructions for state and local agencies and breakout sessions tailored to specific types of work zone activities. For more information, contact Tom McDonald, Iowa's Safety Circuit Rider, 515-295-6384, tmcdonal@iastate.edu.

Equipment training. Construction equipment should be operated only by trained staff, and every worker who's expected to operate machinery should be trained on that equipment. Manufacturers may provide training and information. Also, CTRE periodically provides equipment operation and safety workshops.

Traffic isn't the only hazard in work zones. Workers should take precautions to prevent—and protect themselves from—construction accidents.



Regular safety meetings in the shop. Regular meetings can help workers develop safe work habits in all situations, including work zones. Consider using “Safety Shorts,” a series of brief videos available through CTRE’s LTAP library, as discussion starters.

In highway construction areas, crews should keep the following tips in mind:

- **Stay alert.** Always be aware of equipment and other workers around you. Just because you can see them doesn’t mean they can see you.
- **Designate a “spotter” for each piece of large machinery.** Spotters help equipment operators navigate through work zones, avoiding obstacles like other equipment, pedestrian workers, and power lines.
- **Be familiar with the site** (power lines, trenches, etc.) before work begins. This simple tactic reduces surprises for operators of large construction equipment.
- **Know and use appropriate personal protection equipment for your specific job.** Each worker must be responsible for his or her own safety, including the use of appropriate protective gear.

- **Avoid loose clothes and jewelry,** which can easily be caught in machinery.
- **Never turn your back on a working machine.** Once you turn your back, you can no longer see the machine’s movements and you have no guarantee that the operator can see you.
- **Follow each machine’s operating instructions.** Pushing a machine to its limits could cause injury or death to you or your coworkers. Always follow procedures approved by the manufacturer.
- **Avoid getting between two pieces of moving equipment or between moving equipment and fixed objects.** Both of these situations leave no room for escape and can lead to pinning or crushing accidents and death.

For more information

In addition to the “Safety Shorts” video series mentioned above, CTRE’s LTAP library houses many other work zone safety-related resources: V506 “One Step From Death,” V577 “Road Crew Safety,” and a Highway Work Zone Safety Series, with topics ranging from grading safety to loading, transporting, and unloading heavy equipment. (See new work zone video listings on page 16.)

Contact Jim Hogan, library coordinator, 515-294-9481, hoganj@iastate.edu.

Safety-related training should be a part of every work zone worker’s job description.

Work zone safety reminder:

Back up safely!

Use all mirrors. *Don’t* open the driver’s door to look back; you can’t see your mirrors, and you could hurt yourself or the door.

Back up *s-l-o-w-l-y*.

Before backing into an unfamiliar area, get out and look for stakes, holes, and sharp objects.

When backing over a sidewalk and into the street, stop at the sidewalk to check for pedestrians. Stop again at the curb to check for traffic.

If you have to park in a driveway, back into it if possible so you can drive forward into the street.

Adapted from Ohio DOT’s Tailgate Talks, 1992.

Showcase your innovations at the " Build a Better Mousetrap" competition

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 they have developed to make their jobs easier, safer, and less costly.

In addition to showcasing their agency's 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. Each winner will receive a certificate and \$100. All winning entries will be featured in future issues of *Technology News* as "tips from the field."

Expo registration brochures, which include the "Build a Better Mousetrap" entry form, will be mailed in July. The form will also be available online at www.ctre.iastate.edu/.

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