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

September–October 2002

Acronyms in this issue

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

Anti-ice bar installs easily

Editor's note: The "anti-ice bar" is one of several winning innovations from the "Better Mousetrap" competition at the Iowa Maintenance Training Expo in September 2002. (See page 10 for a complete list of winners.) In each issue of Technology News *we will highlight one of the winners. For information about previous winning "mousetraps," see CTRE's website: www.ctre.iastate.edu/ ("Popular Links").*

The Iowa DOT maintenance crew in Dyersville wanted to save time during their anti-icing operations. They also wanted to better utilize the side tanks on their trucks when the slip-in anti-icers were not installed. So they built a device that one person can install in a few minutes—an anti-ice bar.

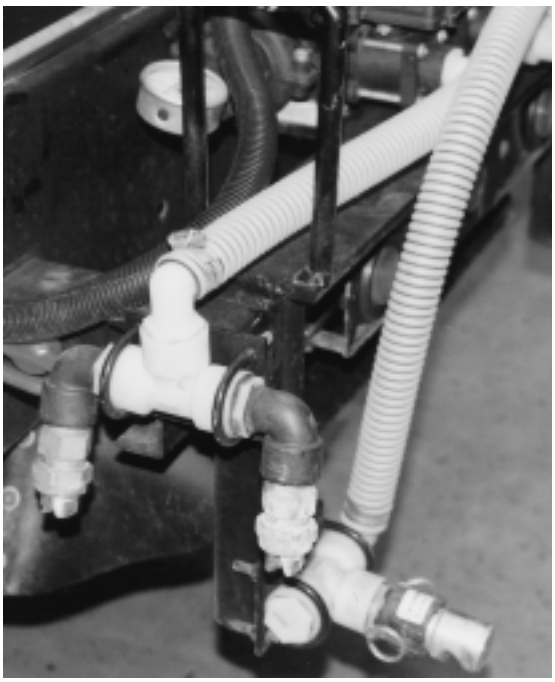
The anti-ice bar is a combination of tubing and spray nozzles attached to a metal frame, which mounts onto the rear of the sand box. The unit slides into a channel bar on each side and is held in place by pins inserted on each side of the bar.

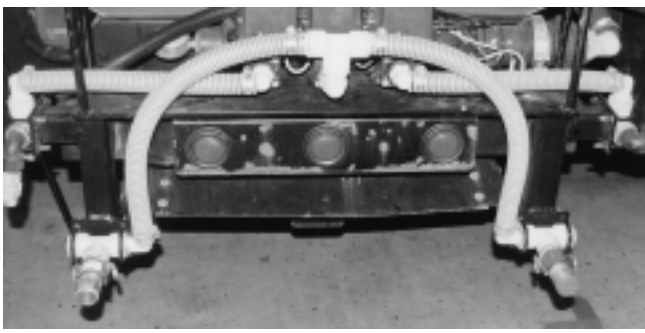
Materials include

- 4' long 2" square tubing
- 3' long 1/4" x 4" flat plate
- 2' long 1/2" cold roll
- 4' long 1 1/4" hose

Stripping a truck to get it ready to haul material such as sand or salt takes about 30 minutes, compared to an hour or more for a truck equipped with slip-in anti-icers.

For more information about the anti-ice bar, contact Steve Benda, 563-875-7615. •





An anti-ice bar built by the Iowa DOT maintenance crew in Dyersville.

Preparation of this newsletter was financed through LTAP, a nationwide effort financed jointly in Iowa by the FHWA and the Iowa DOT. Iowa's LTAP is housed and administered at ISU's Center for Transportation Research and Education (CTRE).

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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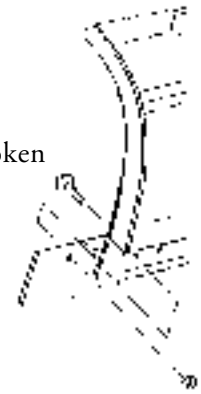
Pre-season winter maintenance checklist for fleet managers

The following checklist can help you make sure your snow plows and other maintenance equipment are in good working order before the first storm hits.

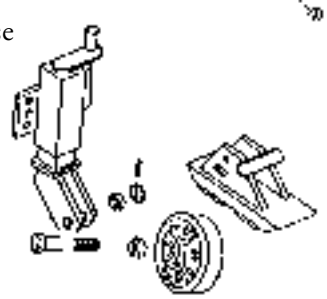
Ground engaging components



Cutting edges and guards

- ❒ Inspect all cutting edges. Replace those that are broken or excessively worn.
- ❒ Inspect wear guards. Replace those that are broken or worn.

Running gear

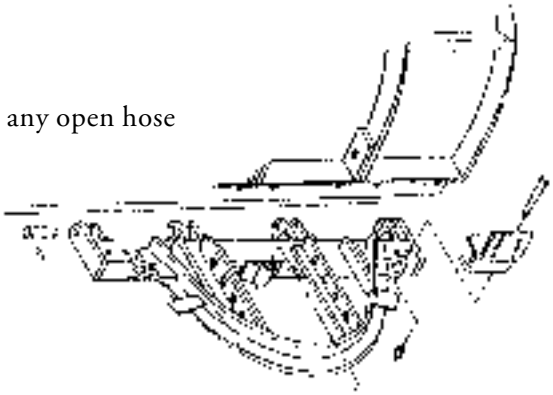


- ❒ Inspect running gear shoes. Replace those that are broken, worn, or missing.
- ❒ Inspect adjuster leg components, and replace all that are damaged.
- ❒ Grease internal threads and sliding members.

Hardware

- ❒ Replace all missing or broken bolts. Use grade 8 plow bolts for steel cutting edges.

Hydraulics



Hoses

- ❒ Plug or cap any QC fittings and any open hose ends.
- ❒ Inspect hoses for any leaks or potential leaks. Replace as needed.
- ❒ Secure hoses with hose clamps.

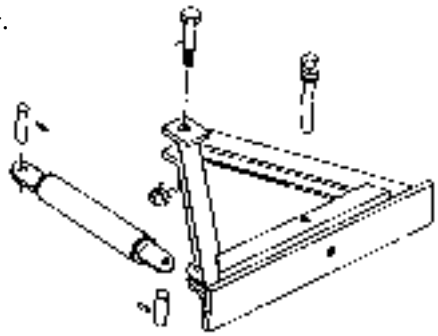
Cylinders

- ❒ Check for leaks. (If v-rod end seals are leaking, try tightening the pack nut 1/4 turn. This method will often stop a small leak.)
- ❒ Inspect the cylinders for any chrome rod dents or scratches.
- ❒ Apply a light coat of oil or grease on the exposed rod surfaces.

This checklist is adapted from information in the Henke Snowplow*, Summer 2001. Graphics courtesy of the* Henke Snowplow. *Used with permission.*

Frame and moldboard

Joints

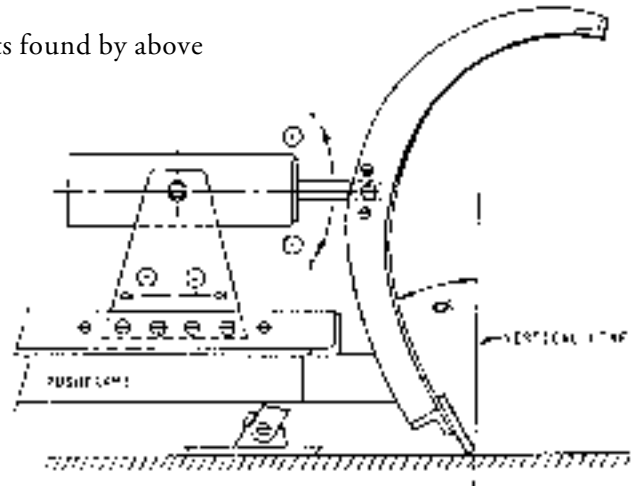


- ❒ Check pins, bushings, and pivot bolts for wear.
- ❒ Make sure all keepers are in place.
- ❒ Make sure shear bolts and pins are the same grade as those originally in the equipment (usually grade 2 or grade 5). Although you may be tempted to replace these bolts with a grade 8 bolt to reduce the need for replacement when plowing, the original-grade bolts are designed to shear, protecting the driver and the equipment.

Weldments

- ❒ Check for cracks.

Setup



- ❒ Replace worn or broken parts found by above inspections.
- ❒ Position plow in storage/ parking space on a solid surface.
- ❒ Adjust running gear, if equipped, to hold plow frame at the level needed to reconnect to the truck. This adjustment will also properly set the running gear for plow operation.

Replacement stock

- ❒ Check your stores of replacement stock.
- ❒ Order replacement stock by mid-fall to avoid shortages when the first storm hits.

Visibility

- ❒ Check the visibility of your truck. (See article on the next page.)

Making snow plows more visible

"ONE OF THE BIGGEST problems [with snow plows] is being hit from behind," says Tim Nordholm of Iowa DOT Equipment Services. Typically, these collisions occur because following motorists can't see the plow through the cloud of snow behind it. Increasing the visibility of equipment gives motorists more time to decelerate, reducing the chance of impact.

Make your plow more visible to following motorists by installing retroreflective tape and using bright colors on the back of the plow and related equipment.

The camera's flash had the effect of light from headlamps on retro-reflective tape installed on the sides and rear of this vehicle.

Retroreflective tape
Retroreflective tape is required on trailers and semi-tractors, but it can also be installed on snow plows and other vehicles.

The tape sends light from an approaching car's headlamps directly back toward the car's headlamps, making the vehicle more visible to the car's driver, even through a snow cloud.

The Iowa DOT uses red and white (silver) retroreflective tape (DOT C-2), installing it horizontally along the sides of the truck or plow and horizontally along the bottom rear and near the top rear.

"We use the tape strictly for the safety of our drivers and other motorists," says Nordholm.

In a recent survey conducted by CTRE, only 19 of 61 responding Iowa counties reported using retroreflective tape on their snow plows or trucks.

The tape is relatively inexpensive and can be purchased at auto parts stores and truck stops. The Iowa DOT can provide a diagram for suggested placement of the reflective tape.

Contrasting color
White or gray trucks and/or tanks blend into wintry background colors and all but disappear in snow.

Nordholm suggests that you examine the back of your plow and related equipment to see where more color is needed. Iowa DOT trucks, snow plows, and related equipment are painted orange to contrast sharply with winter's grey colors.

For more information
Contact Tim Nordholm, Iowa DOT, 515-239-1607. •

Complying with Phase II storm water regulations by March 10, 2003

TECHNOLOGY NEWS first published information about Phase II regulations in May 2000, when this topic was not yet on the radar screens of many local agencies. Now, as the deadline to comply with the regulations approaches (**March 10, 2003**), many public agencies are scrambling to understand what is covered and what they need to do. It can be overwhelming just to wade through the technical fact sheets, frequently asked questions, and web pages on this topic issued by the Environmental Protection Agency (EPA).

The following articles cut through the official jargon and update the basic information provided in 2000 for local agencies. Thanks to Joe Conway at the Iowa Department of Natural Resources (DNR) for his help interpreting and condensing relevant regulations.

Understanding the regulations

The storm water pollution problem

Nearly a quarter of a century after enactment of the Clean Water Act, a 1996 study revealed that 40 percent of U.S. water bodies still didn't meet water quality standards. Polluted storm water runoff continues to impair water bodies, destroy wildlife habitats, and threaten public health.

The program to reduce storm water pollution

The Environmental Protection Agency (EPA) works to reduce storm water pollution through its National Pollutant Discharge Elimination System (NPDES). (In the state of Iowa, the Iowa DNR serves as the NPDES permitting authority.) The NPDES Storm Water Program has been implemented in two phases:

Phase I—In 1990, the EPA announced the regulation of medium and large municipal separate storm sewer systems (MS4s) and 11 categories of industrial activity. Though transportation facilities were included under industrial activities, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) exempted public facilities operated by municipalities with populations of less than 100,000 (with the exception of power plants, airports, and uncontrolled sanitary landfills). Construction activities disturbing five or more acres of land were also subject to the regulations.

Phase II—The EPA is now extending the regulations to include the MS4s of some smaller municipalities and construction activities disturbing as little as one acre of land. The deadline for compliance is March 10, 2003. Provisions within ISTEA that temporarily exempted most of the industrial and transportation activities of municipalities with populations of less than 100,000 also expire on this date.

Entities and activities covered

No entities are exempt. The regulations apply to each of three types of activities—industrial/transportation, construction, and municipal separate storm sewer operations. See below.

Details on what is covered for each of these activities (industrial and transportation activities, construction, and MS4s) and options for compliance are provided in the following three articles.

STORM WATER . . . **continued on page 6**

Do the storm water regulations apply to you?

Entities	Type of activity				
	Industrial and transportation activities	Construction			MS4s
		≥ 5 acres	≥ 1 acre, < 5 acres	< 1 acre	
Cities, counties, other public entities with populations of at least 100,000	Yes (Phase I)	Yes (Phase I)	Yes (3/10/03)	No	Yes (Phase I)
Cities, counties, other public entities with populations of less than 100,000	Yes (3/10/03)	Yes (3/10/03)	Yes (3/10/03)	No	Yes* (3/10/03)
Private entities	Yes (Phase I)	Yes (Phase I)	Yes (3/10/03)	No	N/A

* MS4s located in areas with populations of less than 100,000 are only affected if that area and adjacent areas together have a population of at least 50,000 and a population density of at least 1,000 per square mile, or if that area itself has a population of at least 10,000 and a population density of at least 1,000 people per square mile.

1. Industrial and transportation activities

What's covered

Under Phase II, all entities—public or private and of any size—are responsible for the compliance of their industrial and transportation activities. Eleven categories of activities (based on Standard Industrial Classification codes) are covered:

1. facilities with effluent limitations
2. manufacturing
3. mineral, metal, oil, and gas
4. hazardous waste, treatment, or disposal facilities
5. landfills
6. recycling facilities
7. steam electric plants
8. transportation facilities
9. treatment works
10. construction activity (discussed in a separate article; see page 7)
11. light industrial activity

As a general rule, if storm water runoff occurs anywhere on an industrial or transportation site, the regulations apply.

The regulations affect municipal highway garage complexes, including buildings or areas in which any of the following occurs:

- vehicle/equipment maintenance, repair, lubrication, fueling, painting, or washing
- vehicle, equipment, materials, or waste storage (including salt piles; any sand or aggregate mixed with salt is considered a salt pile)

Options

Agencies must obtain either a no-exposure exclusion or an NPDES industrial permit (general or individual) for their industrial activities by March 10, 2003.

No-exposure exclusion for industrial activities

Many agencies may qualify for a no-exposure exclusion if they can certify that all their industrial materials and activities are protected from exposure to storm water and runoff by March 10, 2003.

No-exposure exclusion applications involve three steps:

1. Using the four-page form (available at http://www.epa.gov/npdes/pubs/noexpoform_app4. pdf), submit written certification that the given facility meets the definition of "no exposure" to the Iowa DNR once every five years.
2. Submit a copy of the certification form to the municipality in which the facility is located.
3. Allow the Iowa DNR to inspect the facility and make the inspection reports publicly available upon request.

In some cases obtaining no-exposure status may require relocating materials or constructing or modifying structures.

The surest protection is to conduct industrial activities and store vehicles, equipment, materials, and waste (including salt piles) within roofed and walled buildings.

Roof-only structures suffice where storm water does not flow through the structure. Fueling, for example, can be performed under a roofed structure with berms to contain water runoff.

Drums, barrels, and tanks with taps or valves must be sheltered. Equipment and vehicles must be sheltered if they leak or are otherwise a contamination source.

Municipalities must enclose or cover salt piles except when adding or removing materials. Temporary covers must be thick, reinforced plastic sheets. Highway crews should minimize spills during loading and unloading and immediately clean up any spills that do occur.

No-exposure certification might also require

- providing temporary covers over potential contaminants such as compost piles
- removing particulate matter or visible deposits from roof stacks and/or vents
- washing pollutants from equipment and vehicles and treating the wash water
- sweeping or covering materials that might become windblown contaminants
- repairing pipes that leak contaminants
- removing past contamination sources
- storing trash in covered containers without leaks

Successful no-exposure applications will exclude entities from having to obtain a permit. Exclusions are good for five years or until any change in exposure status occurs.

General permit for industrial and construction activities

Some agencies may be able to obtain an NPDES general permit that will cover all industrial activities at a site.

General permits are applicable to discharges that are composed of storm water only and thus do not cover mixtures of storm water with non–storm water where the non–storm water would require an individual NPDES permit.

There are three types of general permits:

- Permit No.1 for industrial activities excluding construction
- Permit No. 2 for construction activities
- Permit No. 3 for the industrial activities of asphalt plants, concrete batch plants, rock crushing plants, and sand and gravel processing plants

(1. Industrial and transportation activities continued)

General permit applications involve the following steps:

1. Develop a storm water pollution prevention plan for all activities at a site, including the following:
   a. Designate a team of experts to guide the development of the pollution prevention plan. The team should include individuals who are familiar with the facility and the regulations. Public agencies may hire private engineers and specialists as team members.
   b. Assess potential storm water pollution sources. Prepare a site map that shows the pattern of storm water drainage and surface water bodies. Evaluate the following for exposure to rainfall and runoff: fueling operations and storage, vehicle and equipment maintenance and cleaning, material storage and processing, loading and unloading operations, and waste disposal practices. Storm water discharge quality and quantity should be measured, and non–storm water discharges such as vehicle wash water should be evaluated.
   c. Establish management practices and controls, including maintaining a clear and orderly facility, minimizing exposure of potential pollutants, spill prevention and response procedures, erosion prevention and sediment control, runoff management, and minimizing tracking and blowing of waste materials, sediment, and dust. Agencies should not feel that they have to generate management and control strategies on their own. Proven best management practices (BMPs) are available from the EPA (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/), companies that have developed storm water management products, and other agencies.
   d. Periodically evaluate the plan's effectiveness. Employees should be trained to properly carry out the plan. Inspectors should conduct a comprehensive compliance inspection annually and submit a report to the Iowa DNR.
2. Submit a complete Notice of Intent package to the Iowa DNR, including the following items:
   a. completed two-page Notice of Intent form (Form 542-1415)
   b. proof that public notices were placed in the two greatest circulation newspapers in the area
   c. appropriate permit fee ($150 for one year, $300 for three years, $450 for four years, or $600 for five years)

   Operations cannot start until at least 24 hours after a Notice of Intent package is received and accepted as complete and correct.
3. Submit a completed Notice of Discontinuation form to the Iowa DNR when discharges at the site have been eliminated as defined in the permit or when another operator has assumed control of the site.

Forms and detailed directions are available at www.state.ia.us/government/dnr/organiza/epd/wastewtr/wwapps/npdes.htm.

Individual permit for industrial activities

If a no-exposure exclusion or a general permit is not applicable, agencies must obtain one NPDES individual permit for each of their dischargers or point source discharges.

To obtain an individual permit, agencies must complete Form 1 and Form 2F. Additional forms may be required if storm water is mixed with non-processed wastewater (Form 2), processed wastewater from existing sources (Form 3), or processed wastewater from new sources (Form 4). Permit fees are $300 for one year or $1,250 for five years.

Applications must be made at least 180 days before the start of operations. Forms and detailed directions are available at www.state.ia.us/government/dnr/organiza/epd/wastewtr/wwapps/npdes.htm.

2. Construction

What's covered

Phase I targeted the following large construction activities:

- construction that will disturb at least five acres
- construction that will disturb less than five acres but is part of a larger plan of development or sale that will disturb at least five acres

As of March 10, 2003, Phase II adds small construction activities to those affected:

- construction that will disturb at least one acre
- construction that will disturb less than one acre but is part of a larger plan of development or sale that will disturb at least one acre

All entities—of any size, public or private—are responsible for the compliance of their construction activities, large or small. Activities are affected only where storm water runoff from the construction site will be discharged into a municipal storm sewer system or waters

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STORM WATER . . . continued from page 7

of the United States. The definition of construction does not include routine maintenance of roads and ditches.

Options

Agencies must obtain either a waiver or an NPDES general permit for their large or small construction activities by March 10, 2003.

Waiver for small construction activities
Some small construction activities may be eligible for waivers if one of the following two conditions can be proven:

- The activity will occur during a negligible rainfall period. The construction site must have a rainfall erosivity factor of less than 5 for the period of construction. See www.epa.gov/npdes/pubs/fact3-1.pdf for more information.
- A determination that storm water controls are not necessary has been made based on criteria available from the Iowa DNR. (The determination is made based on total maximum daily load or equivalent analysis, which establishes maximum pollutant levels and allocations allowed for each source.)

General permit for large or small construction activities
Large construction activities already require an NPDES general construction permit (Permit No. 2), as described under the general permit section of the industrial/transportation activities article (pages 7–8). By March 10, 2003, small construction activities will also require the same permit if a waiver is not applicable.

3. MS4s

What's covered

Municipal separate storm sewer systems (MS4s) are broadly defined as any system of storm water conveyance, including roads with drainage systems, gutters, and ditches, owned or operated by a public entity.

Phase I targeted medium and large MS4s, those located in incorporated places or counties with populations of at least 100,000. Des Moines and Cedar Rapids are already compliant under Phase I.

Small MS4s are those located in incorporated places or counties with populations under 100,000.

Only a select subset of small MS4s are targeted in Phase II. Small MS4s fall under the regulations under two conditions:

1. Small MS4s in urbanized areas are regulated—that is, if the area in which they are located and the adjacent areas together have a population of at least 50,000 and a population density of at least 1,000 people per square mile. This covers 32 cities in Iowa.
2. Small MS4s are also regulated if they are not located in urban areas but are located in an area with a population of at least 10,000 and a population density of at least 1,000 people per square mile. Though 17 additional cities are potentially affected under this requirement, under proposed rules, 12 of these cities would be waived. The remaining five cities, which discharge into impaired waterways, will be affected.

The Iowa DNR has already identified and contacted all affected jurisdictions.

Options

Affected municipalities must develop an MS4 storm water management program that provides best management practices, measurable goals, and estimated implementation schedule for each of the following minimum control measures:

- Distribute public education and outreach materials.
- Encourage public participation in program development and implementation.
- Develop a plan for detecting and eliminating illicit discharges.
- Control construction runoff.
- Control post-construction runoff.
- Provide staff training on pollution prevention measures and techniques.

Example best management practices are available from the EPA and other sources.

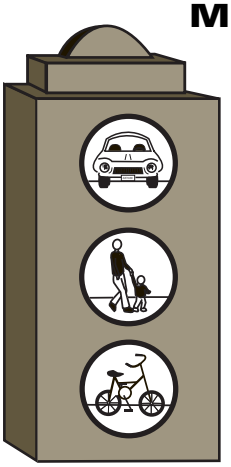
The Iowa DNR is currently working with Iowa's affected municipalities to gain compliance by the March 10, 2003, deadline. •

For information and assistance

Public agencies should seek help from experts to assess their facilities and activities for compliance with all federal and state environmental regulations.

For more information on EPA storm water regulations, go to http://cfpub.epa. gov/npdes/home.cfm?program_id=6. For information regarding the compliance process in Iowa, contact Joe Griffin, Iowa DNR, 515-281-7017, joe.griffin@dnr.state.ia.us.

Multidisciplinary teams implement safety initiatives that work



SOME OF THE BEST ideas and programs for reducing crashes and improving traffic safety come from interjurisdictional teams of professionals from various disciplines. Sharing information about successful team initiatives in Iowa's nine metropolitan areas was the focus of Iowa's first Multidisciplinary Traffic Safety Teams Peer Exchange, held in Des Moines in fall 2001.

Who attended

Representatives of several well established, multidisciplinary safety groups participated in the exchange:

- Dubuque County Multidisciplinary Safety Team
- Metropolitan Traffic Management Team (Polk County 1)
- Des Moines Safe Kids Coalition (Polk County 2)
- Central Iowa Safety Task Force (Polk County 3)
- Southwest Iowa Freeway Team (SWIFT) (Pottawattamie County)
- Citizen Awareness on Roadway Safety (CARS) (Scott County/Quad Cities)

In addition, several counties and metro areas with safety initiatives but not necessarily "multidisciplinary teams," were represented: Black Hawk County/Arrive Alive, Johnson County, Lee County, Linn County, Sioux City/Woodbury County, and Story County.

No two teams were exactly alike. Some focused on enforcement issues, others on incident management, traffic engineering, or pedestrian/bicycle safety; for some, the emphasis has evolved over time. The diversity of team experience, membership, size, operations, and goals enhanced the exchange.

Selecting initiatives

During the discussions, several common criteria emerged for setting up teams and/or particular programs:

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Sponsors of the multidisciplinary safety teams peer exchange

Iowa Governor's Traffic Safety Bureau, Iowa Department of Public Safety

Iowa Safety Management System Coordinating Committee

Iowa Traffic Control and Safety Association

Some successful multidisciplinary safety initiatives in Iowa

	(Teams described above.)
Red light running automated enforcement study	Dubuque
Pedestrian safety, focusing on school neighborhoods	Polk County 2, Woodbury Co.
Installing/inspecting child safety seats for free	Polk County 3
Coupons for free dairy products for citizens transporting children properly	Polk County 3
Cooperative interjurisdictional enforcement	Polk County 3
Countywide cooperative enforcement along a heavily traveled corridor	Scott County/Quad Cities
Coordinated policy to reduce duplication of service for stranded vehicles	Scott County/Quad Cities
Evaluation of corridor safety	Black Hawk County
Joint alcohol enforcement	Johnson County, Lee County
Incident/emergency management programs and manuals	Dubuque, Polk County 1, Pottawattamie County, Lynn Co.

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- Initiatives are need-driven, not team-driven. That is, someone sees a problem or need and assembles a group to address it. That need (e.g., incident management) may be ongoing, and so the team may continue to meet regularly.
- Once representatives of different disciplines begin working together to address one issue, a climate can develop in which information about other joint concerns is shared, and the group may decide to address other safety challenges.
- As different needs are identified and addressed, membership in multidisciplinary teams can and often does fluctuate.
- It may be more common for public agencies—state, city, and county engineers; law enforcement; metropolitan planning organizations and councils of government, etc.—to cooperate together than to include representatives of community- or neighborhood-based initiatives. Groups may want to consider broadening their membership to involve the public through community safety groups.
- Several participating teams have used the services of Iowa Governor's Traffic Safety Bureau to help them organize.

For more information
See the list of resources and contact information below.

A report is online, www.ctre.iastate.edu/pubs/safety_peer_proceedings.pdf, and will be available at the ITCSA/IASE fall conference, October 31–November 1, in Des Moines (see the calendar on page 12.) The report describes

- information shared at the exchange,
- contact information for representatives from participating teams, and
- detailed information about the kinds of resources available to support traffic safety initiatives in Iowa. •

Resources for safety teams

For detailed information about resources, see the online report, www.ctre.iastate.edu/pubs/afety_peer_proceedings.pdf.

Resource	Contact
Iowa DOT's Office of Traffic and Safety	Mary Stahlhut, Iowa DOT, 515-239-1169, mary.stahlhut@dot.state.ia.us
Iowa's Statewide Safety Management System's Coordinating Committee	Mary Stahlhut, Iowa DOT, 515-239-1169, mary.stahlhut@dot.state.ia.us
Governor's Traffic Safety Bureau	Mark Campbell, GTSB, 515-281-3907, gtsbinfo@dps.state.ia.us
Iowa Traffic Safety Data Service	515-292-5004, itsds@iastate.edu
Center for Transportation Research and Education Iowa State University	Tom McDonald, Duane Smith, Jim Hogan, Captain Bob Rushing, 515-294-8103, tmcdonal@iastate.edu, desmith@iastate.edu, hoganj@iastate.edu, rushing@dps. state.ia.us, respectively
Iowa Traffic Control and Safety Association	Blake Redfield, president, 712-328-4907, cbtraffic@neonramp.co; Tom McDonald, membership chair, 515-294-6384, tmcdonal@iastate.edu
National Highway Traffic Safety Administration	www.nhtsa.dot.gov/people/outreach/safecomm/

"Better Mousetrap" winners for 2002

CITY, county, and state workers entered 15 "mousetraps" in the second annual "Build a Better Mousetrap" competition held September 11, 2002, during the Iowa Maintenance Training Expo in Ames. Six winners were chosen:

- Enhanced road work sign, Maintenance Crew, Iowa DOT—Sidney
- LED pedestrian signal retrofit, Jim DeWitt, City of Clive
- Underbody wash, Dennis Guillaume, City of Ankeny
- Portable utility box, Maintenance Crew, Iowa DOT—Tipton
- Guardrail cleaner, Maintenance Crew, Iowa DOT—Dyersville
- Anti-ice bar, Maintenance Crew, Iowa DOT—Dyersville

Two other submissions deserve honorable mention:

- Horizontal drill jig, Galen Hammerly and Glenn Jontz, City of Newton
- Water pump transporter, Gary Keller, Lee County

Each winning "mousetrap" will be published in *Technology News,* beginning next issue.

Congratulations to the winners and thanks to all who submitted entries for sharing your good ideas. •

2002 "roadeo" winners

NEARLY 120 people competed in the Iowa Snow Plow and Motor Grader Roadeo in Ames on September 10, 2002, by taking written exams and driving snow plow trucks or motor graders through an obstacle course.

Snow plow truck competition. Forty-four teams of drivers demonstrated their skill in the truck division. First- and third-place teams from the City of Ankeny have won the roadeo in previous years.

Greg Householder and Mark Goins, City of Ankeny, formed the first place team. Combined, they have 36 years experience driving a snow plow.

Bill Bauer and Kevin Decker from the City of Des Moines Public Works Department placed second.

Third place winners Charles Cole and Dennis Gaulke, City of Ankeny, have 13 years of combined experience.

Motor grader division. In the motor grader division, 29 operators competed.

Fred Lampe, Johnson County Secondary Roads Department, placed first.

Scott Lundquist, City of Ames, placed second.

Kary Obman, Sac County Road Department, placed third. •

Snow plow winners, left to right: Charles Cole, Dennis Gaulke, Mark Goins, Greg Householder, Bill Bauer, Kevin Decker.

Motor grader operator winners, left to right: Scott Lundquist, Fred Lampe, Kary Obman