# Crossroads

Winter 1996



TRANSPORTATION Information Center

University of Wisconsin-Madison

## Weather—the winter guessing game

A winter storm is howling through central Minnesota. Should you call out the plows? The air temperature is 18° F at 6:00 AM. Will it warm up enough by noon for salt to work? Good questions. Where do you get the answers?

These days there's good satellite, radar, air and pavement condition information to help make winter maintenance a more exact art.

#### Pavement sensor forecasts

Pavement temperatures and forecasts are about the most sophisticated information currently available for road



maintenance. Wisconsin now has a network of pavement sensors and weather stations on Interstates and other major divided highways. The stations continuously report weather and pavement data via personal computer to all County Highway offices, WisDOT District offices, and other municipalities.

The system, coordinated by WisDOT, includes a 24-hour forecast of projected pavement temperatures.

Knowing pavement temperatures may let you eliminate a round of salting, says WisDOT's Wayne Peterson who has been coordinating the system until recently. (Mike Adams is the new on-site program manager.) Even though air temperature is below freezing, if pavement temperature is 40°, it doesn't make much sense to salt, Peterson says. But if the pavement temperature is 34° now, and projected to go down later, you want to salt right away to prevent ice bonding and buildup on the pavement. Peterson believes the system will help cut salt use around the state.

There are 30 stations now, and WisDOT will have 21 new stations on line in December. The department is

working towards a 35-mile grid covering the whole state. The information is quite accurate for up to 35 miles, Peterson says.

Larger communities can access this information directly through a computer hook-up. Contact the WisDOT District Maintenance Engineer for information.

Smaller communities can call their county Highway departments for a current status report and forecast.

## Contract forecasts

Many municipalities contract for commercial weather forecasts. The cost varies with the level of service and size of community. At the simplest, you can just call whenever you want a forecast for your area. The businesses also offer daily routine forecasts, storm alerts, and 24-hour telephone calls. (Contact T.I.C. for a list of forecast services.)

Milwaukee, for example, has received forecasts from Murry and Trettle for more than 30 years. "We use them like an alarm clock," says Dave Lorbeske, the city's field manager for winter maintenance operations. "They will call and warn us if snow is coming, 24 hours a day."

The city's on-call manager writes the meteorologist's verbal weather observations and forecasts on a form. He can ask questions and get more information right away. Routine 24-hour forecasts are delivered in the morning by phone or fax and updated in the afternoon. The company also supplies storm alerts and longer range forecasts. The service costs Milwaukee about \$5000/yr.

"We want to know what time of day the storm will hit, the temperature before and after the storm, its

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## Weather—the winter guessing game

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duration, and predicted amounts of snow, rain, or sleet," says Dick McDonnell, the administrator and projects manager for Milwaukee's Sanitation Division. That information helps them decide how to deploy equipment and what is the minimum amount of chemicals needed to handle the job.

They don't rely on just one source, however. They also use computer links to get data from the state's pavement sensor and weather reporting system and pay for images from radar and satellite. They use free information too. Cable TV weather channels and forecasts by local TV meteorologists are taken into account, and they routinely have supervisors drive local streets to check conditions.

## Contract satellite and radar images

Dane County Highway Department uses visual images of weather systems from a private vendor, Satellite Information System (formerly DTN). They get the images through a satellite dish and TV monitor supplied by the company.

"We can zoom in on Iowa and Dane Counties and watch the systems move," says Steve Haag, patrol superintendent. "You can tell their speed, and how heavy the rain or snowfall is. It's very accurate." The information comes from radar and satellite images which are visualized as maps by the vendor. It also supplies National Weather Service current conditions and forecasts in text form.

The county uses this tool, along with state-supplied pavement sensor information, to decide their maintenance strategy. "If it's a light snow, for example, we may just salt our 24-hour and class one routes during the night and wait until the regular shift comes on for the other routes," says Haag. "That way we can save on overtime costs."

Dane County doesn't use a private forecast service for storm alerts, but relies on State Patrol emergency calls to

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Pavement temperatures are forecast to go down overnight. Plan salting accordingly.

alert them to unanticipated conditions. Haag and his counterpart in Madison, Toby Opheim, the city's Streets Operations Manager also share information and coordinate together. Madison does use a private forecast service.

## Options for smaller communities

Weather forecasts, pavement temperature information, and personal observation are tools to help you respond to winter storms effectively and efficiently. The tools keep getting better, and the cost is going down. Using them in combination with a pre-determined maintenance plan can help you save on salt, sand and staff.

Contact the T.I.C. for a list of private weather forecasting services, contract satellite and radar image suppliers, and information on National Weather Service and WisDOT services. Use the form below or call 800/442-4615.

Phone (

## **Reader Response**

(We'll call you to get more details or answer your question.)

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If you have a comment on a <i>Crossroads</i> story, a question about roadways or equipment, an item for the <i>Idea Exchange</i> , a request for workshop information or resources, or a name for our mailing list, fill in this form and mail <i>in an envelope</i> to:	Please send me information on
Crossroads Transportation Information Center University of Wisconsin–Madison 432 North Lake Street Madison, WI 53706 FAX 608/263-3160	Name
<ul> <li>Please put me on your <i>Crossroads</i> mailing list.</li> <li>My idea, comment or question is</li> </ul>	Title/Agency