



NEBRASKA DEPARTMENT OF ROADS
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FOR IMMEDIATE RELEASE

Nebraska Goes High-Tech As Road Crews Prepare for Winter Weather

Nebraska's highway snow removal fleet is positioned for success in their upcoming battle with the elements, thanks to several new advances in technology. Travelers on the state's roadways this winter should benefit substantially from these innovations.

Key improvements include availability of up-to-the-minute traveler weather and road condition information; methods for early detection of changing road conditions; advanced systems for tracking location of snow removal equipment; automated bridge de-icing systems; and more widespread use of liquid chemical processes for treating frost, ice and snow on roadways.

511

On October 1, Nebraska became the first state to implement a statewide 511-telephone system. By dialing 511 on their cellular telephone or landline telephone, motorists will be able to access the quickest, most up-to-date information about weather conditions, road conditions and travel advisories. The 511 system will operate 24 hours a day, year round. The new system will replace the state's current toll-free 800 number for road conditions. It is also available on the Internet at www.dor.state.ne.us.

RWIS

Nebraska has expanded its remote weather information system (RWIS) to ten additional towers, for a total of 41 towers along roadways throughout the state. Instruments on the tower measure wind speed, temperature, humidity, barometric pressure and precipitation. Pavement and subsurface pavement conditions are also transmitted. The data is relayed by telephone line to NDOR maintenance crew computers about every 30 minutes during winter. The RWIS system increases safety on the state's roads by allowing crews to respond more quickly with de-icing materials, and road crew supervisors to make fewer trips to check on road conditions. Crews can also tailor de-icing applications to the conditions of the road, which means more efficient use of materials.

GPS

Road crews are ready to put technology to use while clearing the roadways. District 5 (Bridgeport) has installed advanced vehicle location tracking systems, using GPS, on 6 snowplows in Sidney and 6 snowplows in Kimball. A real-time display of location and status of

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snowplows is provided via the Department of Roads' computer to supervisors' computers, providing increased safety for snowplow operators and optimal management of equipment.

De-Ice Systems

Several districts either have already completed or are currently installing bridge de-icing systems. These systems are temperature and precipitation sensitive and can be activated manually or by computer. District 4 (Grand Island) has a system located on Interstate 80 at Reference Post 277. District 5 is installing a new system on a bridge on Highway 71 between Terrytown and Scottsbluff. District 6 (North Platte) is installing the system on two Interstate 80 bridges located at Reference Post 201. Because of the ability to pre-treat the pavement, bridge de-icing systems have proven helpful in preventing accidents and are especially effective for frost conditions.

Fleet Ready

Over 1,000 trained employees are prepared to handle weather-related highway emergencies across Nebraska. Approximately 900 units of equipment make up the Department of Roads' fleet, including trucks, snowplows, front-end loaders and motor graders.

Frost Fighters

The Department plans expanded use of liquid chemical processes for frost, ice and snow control on roadways. Maintenance crews will use several liquid chemicals on the roadways, including salt brine and agricultural-based products mixed with magnesium chloride.

The agricultural-based mixtures result from ethanol production and help prevent ice and snow from bonding to the pavement surface, or they may be applied as de-icing materials to help remove ice and snow buildup on the roadway. They may also be used as pre-wetting agents to make other chemicals more effective. They are used in various concentrations from 10-50% in association with magnesium chloride or sodium chloride. Salt brine is a chloride solution that may be applied to roadways up to two hours before a winter storm to prevent ice and snow from bonding to the pavement surface.

The Districts' plans for chemical applications are as follows:

- District 1 (Lincoln) will expand use of agricultural-based products mixed with magnesium chloride. These will be used on highways, bridge decks, and for treating salt and sand stockpiles. Liquid salt brine will also be used for anti-icing, de-icing and as a pre-wetting agent. They will also use sand, salt and calcium.
- District 2 (Omaha) will use agricultural-based products mixed with magnesium chloride for treating salt and sand stockpiles and as a pre-wetting agent. They plan more anti-icing prior to predicted storms.

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- District 3 (Norfolk) crews will continue to expand their use of liquids for pre-treating and de-icing on selected roadways and bridges. The remainder of the district will use gravel/salt mix treated with liquids.
- District 4 (Grand Island) will use salt brine again this year for pre-treating selected sites. Some sites will also use agricultural-based products mixed with magnesium chloride for frost control, anti-icing and de-icing operations. Salt/sand mix will also be used across the district.
- District 5 (Bridgeport) will use salt and gravel as their primary chemical treatment. They will use salt brine in some areas as a pre-wetting agent.
- District 6 (North Platte) will use potassium acetate for anti-icing and de-icing. They may also use agricultural-based products mixed with magnesium chloride. Salt and sand mix will be used as needed at all locations.
- District 7 (McCook) will use sand, salt and calcium chloride mix for snow removal.
- District 8 (Ainsworth) will use salt/sand as their primary chemical treatment. Liquid salt brine will be used for pre-treating hills, curves and hazardous areas on selected roadways.

Timely Messages

Fifty-four Changeable Message Signs (CMS), including 33 positioned along Interstate 80 from Kimball to Lincoln and 21 to be used on other highways throughout Nebraska, will be used to alert motorists of immediate and/or upcoming closures. Over 100 pre-programmed messages are available. State Roads personnel will be able to access the signs using personal computers and modems to either initiate or verify the messages.

Information on winter road conditions continues to be available on DTN monitors at the 25 I-80 rest areas across the state. In addition, information is available on the Roads Department web site, www.dor.state.ne.us, under the heading "Road Reports & Travel Info." Various weather links are also available on the website.

#NDOR#

For additional or localized information, please contact your state highway District Maintenance Superintendent:

District 1 Roger Kalkwarf (402)471-0850, Ext. 1041	District 2 Dale Butler (402)595-2534, Ext. 203	District 3 Thomas McCoy (402)370-3470	District 4 Allen Horak (308)385-6265, Ext. 204
District 5 Larry G. Fisher (308)262-1920	District 6 Roger Klasna (308)535-8031	District 7 Larry L. Peterson (308)345-8490	District 8 John Stahl (402)387-2471, Ext. 204

(State Highway Districts map enclosed)