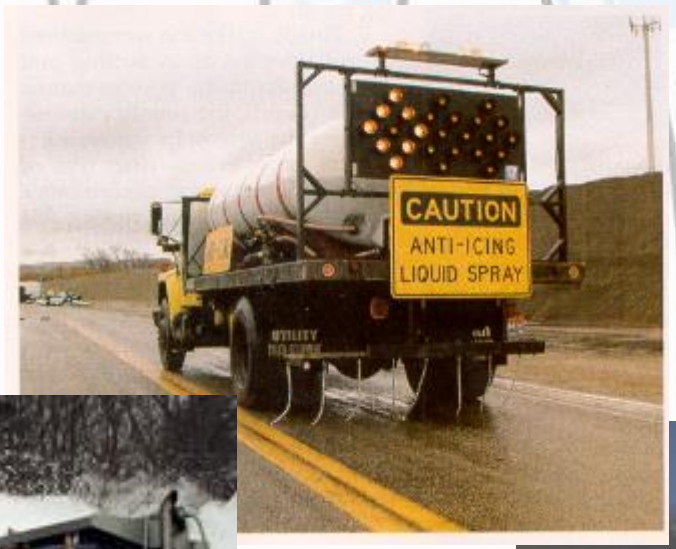
STATE ROAD
NCDOT
MAINTENANCE

Winter Weather Maintenance



Purpose and Objectives of Winter Weather Maintenance Program

The removal of ice or snow from the highway. Includes pre-winter preparations, mobilization prior to a winter storm, work during and after the winter storm to eliminate the hazards and clean up of roadway and equipment after the winter storm or winter season.

Objectives: Insofar as possible and practical, it is the objective of all snow and ice removal activities to:

- keep traffic moving;
- keep commerce and industry going at a near normal pace;
- reduce the possibility of accidents, injuries, and deaths; and
- provide near normal movement of emergency vehicles such as ambulances, fire trucks, etc.

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NCDOT Snow Clearing Policy

It is the policy of the Department of Transportation to control snow and ice on state maintained roadways in the following priority order:

1. Bare Pavement Routes
2. Other US and NC routes not on Bare Pavement Network
3. Paved secondary roads
4. Subdivision roads
5. Unpaved secondary roads

Find the policy on the State Road Maintenance Unit Web Site:
www.dot.state.nc.us/~maintenance

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Bare Pavement Routes are:

Interstate and four-lane divided primary routes and other primary and secondary routes considered to be essential to the overall objectives of snow and ice control operations - the movement of interstate traffic.

Don’t forget those routes are important to public safety!

NCDOT Chloride Use Policy

It is the policy of the Department of Transportation that the application of chlorides (salts) to the travel ways of the system shall be consistent with our objectives to protect the environment.

- salt applied to all miles of Bare Pavement System
- other routes salt applied on curves, grades and intersections
- salt applied at specified rates (heavier application is discouraged)

Effective Storm Response Strategies

- Anti-icing
- Deicing
- Temp. Friction Improvement

ANTI-ICING

A systematic approach to winter maintenance that prevents snow and ice from bonding to the pavement.

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Anti-icing Advantages

- Proactive
- Buys time to mobilize plowing operations
- In light snows, it **<u>may</u>** be all you need
- Results in less salt usage
- Cost savings
- More efficient snow removal operation
- Safer/better for the environment

Anti-icing

What do we use?

- Brine (NaCl)
- Calcium Chloride

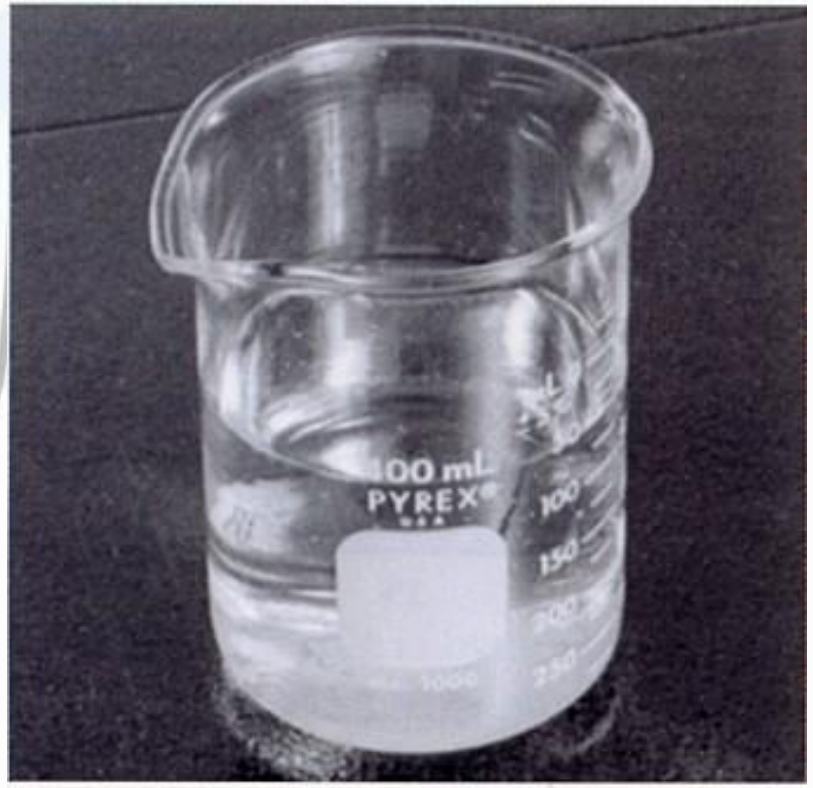
Brine
(Most Common)

- Laboratory freeze point is -6ºF
- Costs about 15¢ per gallon to produce
- Typical application is 40-45 gal/lane mile
  - $6.00 per lane mile

Brine Application

Calcium Chloride

- $0.91 per gallon
- very corrosive to metal and bridge decks
- Used in extreme cold (0-10^{o} F below)



LIQUIDOW liquid calcium chloride

Effective Storm Response

Strategies

Deicing

Operations targeting the removal of snow/ice from the pavement after precipitation occurs.

Effective Storm Response

Strategies

Deicing

- our normal practice
- reactive
- if you wait for precipitation… you're already late

Effective Storm Response
Deicing Strategy

- Sodium Chloride (NaCl) - salt
- apply max rate of 250 lbs per lane mile
- about $115 per ton
  - $14.50 per lane mile

Material	Division 13 2016	Statewide 2016
Tons of Salt	8,771	105,869
Tons of Sand/Salt	16,355	39,615
Gallons of Brine	75,900	4,746,000

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Any Questions?