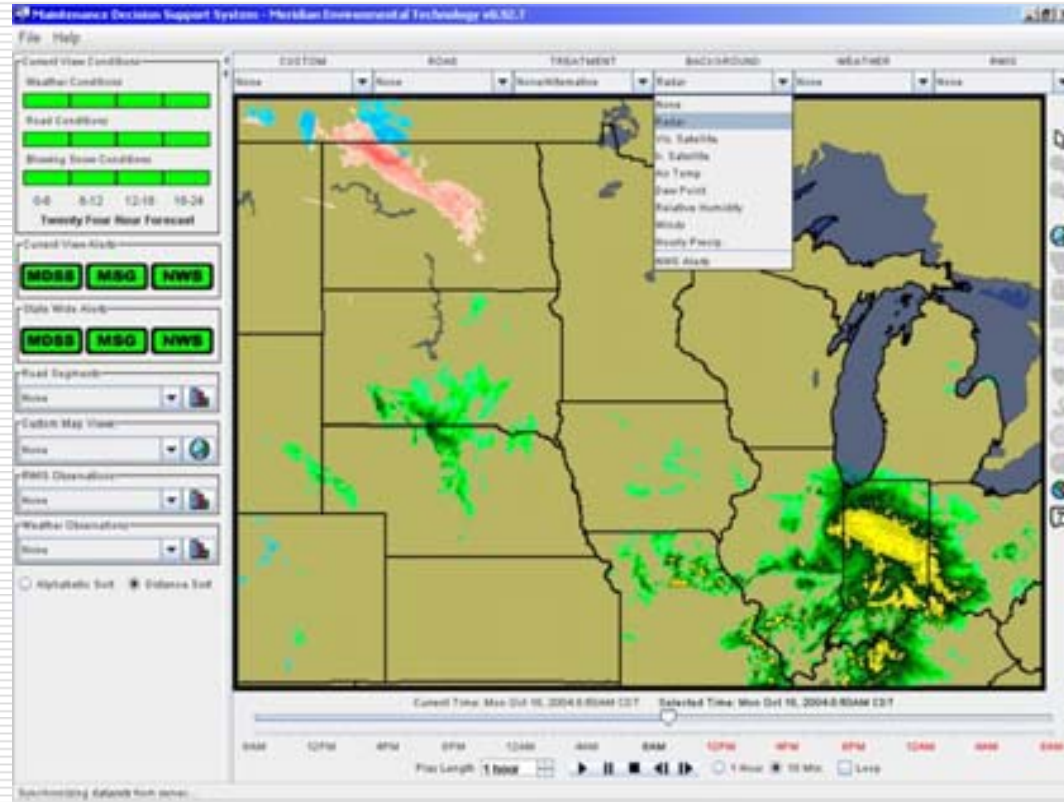


# MDSS in Iowa

Roger Vigdal, Iowa DOT



# Iowa DOT Winter Facts

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- ▶ Snowfall Average – 31" to 50" statewide
  - ▶ Approximately 25,776 lane miles
  - ▶ Approximately 1000 snowplows
  - ▶ Approximately 1300 snowplow operators
  - ▶ 110 DOT Garages
  - ▶ 53 Highway Maintenance supervisors
  - ▶ Most snow runs between 2.5 and 4 hours
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# Iowa Material Usage

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- ▶ Average 195,000 tons/ Salt per winter
- ▶ Average 10 million Gallons/ Salt brine usage
- ▶ Average 121,000 gallons/ Calcium Chloride
- ▶ Average 15,000 tons/ Sand
- ▶ Average 308,000/ Labor hours

\* 5 year Average

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# Winter Materials Usage FY 08

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- ▶ 300,000 tons/ Salt
  - ▶ 16 million gallons/ Salt brine
  - ▶ 121,000 gallons/ Calcium Chloride
  - ▶ 60,000 tons/ Sand
  - ▶ 522,000/ labor hours
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# MDSS History in Iowa

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Federal prototype 2002-2004

Pooled Fund Study 2004-present



# Pooled Fund Study

- ▶ 12 states participating
- ▶ Meridian Environmental Technologies
- ▶ FHWA participating



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# Pros and Cons of the MDSS system for Iowa

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# Pros

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- ▶ A one stop shopping place for weather information.
  - ▶ Potential for material usage reduction.
  - ▶ Potential for labor reduction.
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# Cons (Iowa Issues)

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- ▶ Lack of high speed computers in the field.
  - ▶ Troubles with treatment recommendations
  - ▶ Training problems in the field causing lack of “buy in” of the system.
  - ▶ Lack of funds to incorporate an AVL system.
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# MDSS User Survey in Iowa – 2008

Approximately 175 people  
surveyed

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## How useful was the information from the Pooled Fund MDSS in helping you make decisions about treatment and winter storm planning?

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- **Answer Options- Response Percent- Response Count**
  - Not useful at all - 0.0% - 0
  - Usually not useful - 25.9% - 7
  - Usually useful - 70.4% - 19
  - Extremely useful - 3.7% - 1
  - ***answered question - 27***
  - ***skipped question - 68***
  - **Comments?** I used it more as a second opinion, a lot of information there. This gives us an idea of what is coming at us and what to expect, when to treat and when to stop treating.
-

## Have you ever looked at the In-Forecast Recommendations this past winter?

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- I am not aware of these treatment recommendations so I never looked at them. - 21.1% - 19
- I am aware of these treatment recommendations but I never really looked at them. - 27.8% - 25
- I have looked at them occasionally. - 33.3% - 30
- I look at them all the time. - 17.8% - 16
- Comments? The forecast was only right a couple of times. They are a good guideline for the first treatment, time is generally an accurate time. I like to get started about one hour before they suggested. Not accurate info usually they ended up being too light, and too much time before next application.

The Pooled Fund MDSS program calculates treatment application amounts based on the weather forecast.

For the types of weather being forecast, how reasonable were the application amounts suggested in the treatment recommendations?

The application amounts for the forecasted weather were:

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- Almost never reasonable - 3.7% - 1
  - Usually unreasonable - 44.4% - 12
  - Usually reasonable - 51.9% - 14
  - Almost always reasonable - 0% - 0
  - 
  - answered question 27 skipped question 68*
  - Comments? Their** amounts were generally rather light for the amount of time it takes us to get another round to retreat. We would have dilution most times at the rates they suggested. usually they where light compared to what we need for high traffic volume Interstate.
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## General Response Text from MDSS survey

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- Nothing in general, just wasn't comfortable with their thoughts.
  - I generally think it gives too light of a treatment rate
  - Timing was a big issue. Timing was usually too unrealistic and initial amounts too light. Then frequency was not realistic either
  - Wind and terrain make a lot of difference.
  - Generally light applications, internals are not reasonable for rural areas where crews are not running roads around clock.
  - treatments were too frequent and appeared to be too light.
  - somewhat reasonable
  - usually light on the application
  - Seemed too light and about an hour off with the timing.
  - a little on the light side but not bad.
  - Start times seemed mostly accurate. The end times left something to be desired.
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# What did Iowa learn from the survey

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- ▶ We need to do more training on what this product is and how it could potentially help us.
  - ▶ We need more research on treatment recommendations.
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# Blowing Snow problems/MDSS

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## Typical Iowa Weather

- Weather Events – 60 +/-
  - Snow Events – 30 +/-
  - Blowing Snow Events – 30 +/-
  - Treatment options and forecasting for blowing Snow??
  - Need for research
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So As Lady Godiva once said “I’ve  
come to my close”

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