



Pavement Monitoring at MnDOT

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What Is Road Weather Technology at MnDOT

- Road Weather Information System (RWIS)
- Maintenance Decision Support System (MDSS)
- Automated Vehicle Location (AVL)
- Salt Sustainability
- Pathfinder



AVL System/Pavement Sensors Non-invasive

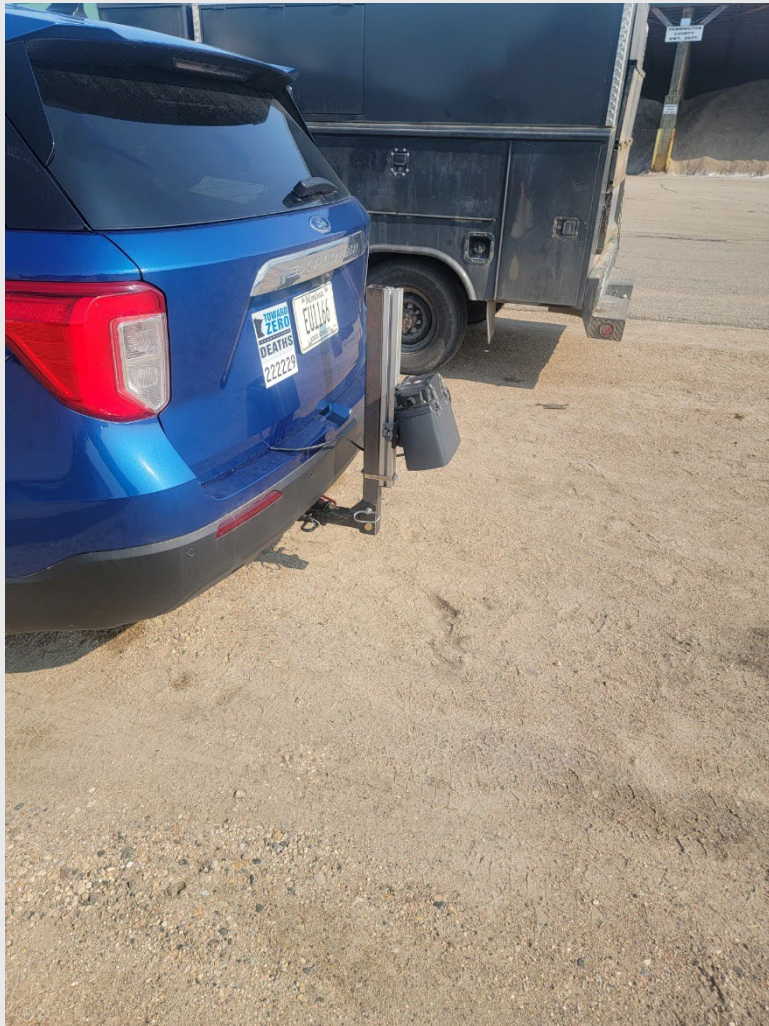
- Plow trucks Precise BT and wired
- Testing 3 main Non-invasive
- Data onboard and sent to consumers of data
- MDSS, 511, FHWA Data Environment



AVL System/Pavement Sensors Non-invasive



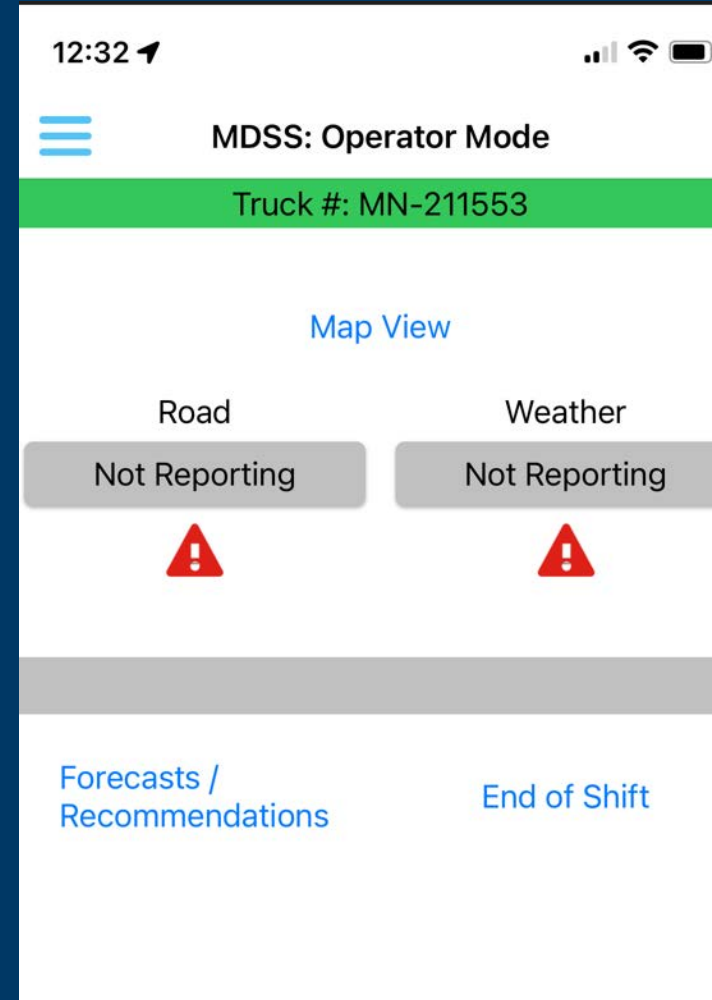
Non-Invasive Sensors



Truck Tablets

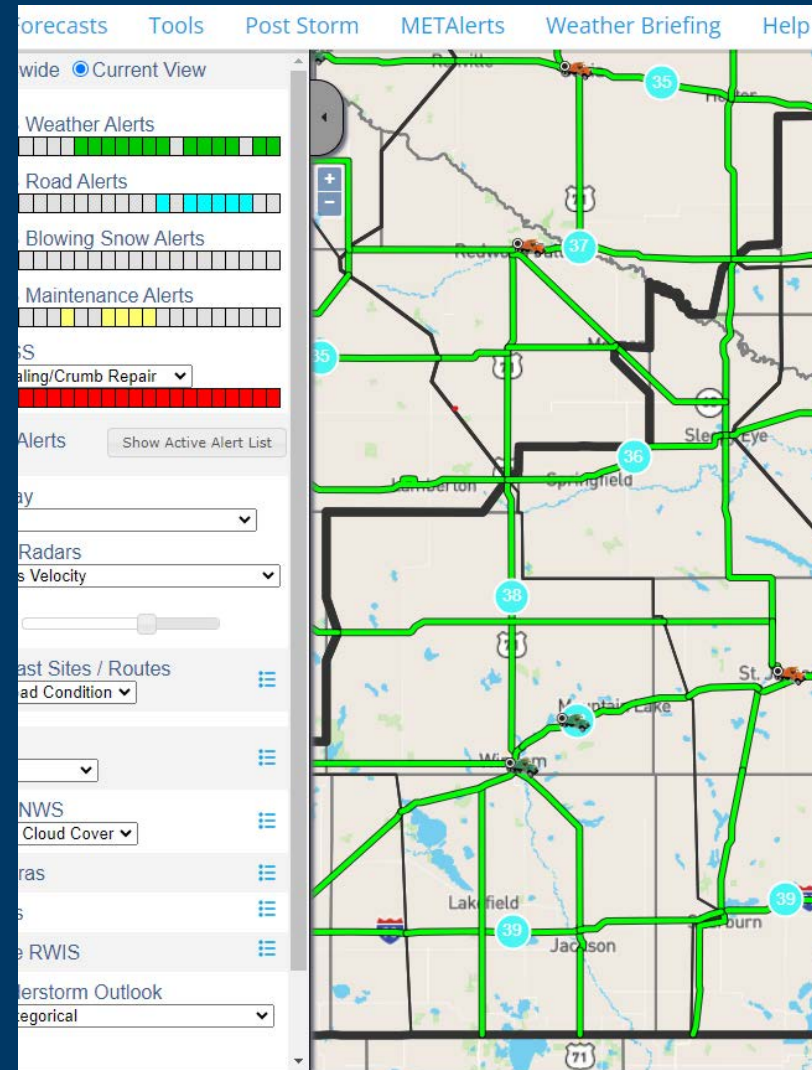
MDSS Operator Mode

- Part of the already in place Application
- Condition Reporting for Routes
- Based on the truck number
- Supervisors can use same app, but in a different mode



Maintenance Decision Support System

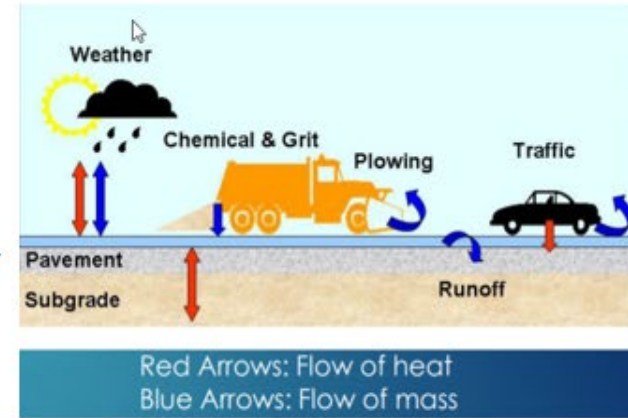
- Pavement Forecasts
- Truck information
- Plow Images
- RWIS Data
- Reports Interface
- Predictive Pavement forecast and Modeling
- Good Decision-making tool



Road Condition Cross Walk



MDSS Pavement Model



Road Condition

Dry	Not Available		
Damp	Damp Near Freezing	Wet	Wet Near Freezing
Chemically Wet	Lightly Slushy	Slushy	Deep Slush
Dusting of Snow	Lightly Snowcovered	Snowcovered	Deep Snow
Some Risk of Frost	Light Compacted Snow	Compacted Snow	Deep Compacted Snow
Frost Likely	Lightly Icy	Icy	Very Icy

Normal
 Partially Covered
 Completely Covered

511 Interface

The screenshot displays the Minnesota 511 Department of Transportation interface. At the top left is the logo for the Minnesota Department of Transportation. To its right is a green button labeled "More Search Options". Below the header, there is a navigation bar with "Clear Details", "Statewide", "Metro Traffic", and a notification bell icon. The main content area is divided into two columns. The left column features a large yellow icon of a truck with a maintenance sign, followed by the text "T.H.10 EB (Dilworth)". Below this is a black rectangular sign with yellow text that reads "MAINTENANCE VEHICLE AHEAD USE CAUTION". The right column shows a map of the region around Fargo, North Dakota, with various road icons and a red truck icon indicating the location of the maintenance alert. Below the main content area, there is a section titled "NEARBY RESULTS" with a question mark icon. This section lists two items: "US 10: Dry pavement. between Moorhead and Dilworth" with a small image of a road intersection, and "US 10: Ice on roadway. between Dilworth and Hawley" with a small image of a road with ice.

How does it work?

MDSS takes road condition entries from plow operators, other manual entries of conditions and applies it to specific route you are currently navigating (based on GPS position from your trucks AVL)

- 511 imports road-weather information directly from MDSS to update road conditions on routes automatically, usually in 10-15 minutes
- Road Conditions can be manually over-ridden in 511 by supervisors if the entries from plow operators are in-correct or roadway is Closed/Travel Not Advised

Questions?



Thank you again!

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