

LiDAR: KNOW YOUR SALT INVENTORY

What field crews need to know about the new storage system



THE MAIN IDEA

A laser scan gives us a better estimate of the salt in the building.

■ KNOW

See how much material is on hand.

■ PLAN

Spot when stock is getting low.

■ WORK SAFER

Less need to climb or measure piles by hand.



WHAT IS LiDAR?

LiDAR uses laser measurements to map the salt pile.

1 SCAN

Sensor measures the pile.

2 BUILD

Computer creates a 3D shape.

3 CALCULATE

Software estimates volume.

4 CHECK

Staff review the reading.

WHEN A TRUCK DELIVERS SALT

The pile gets bigger; the next scan shows the change.

■ DELIVERY

Salt is unloaded in the building.

■ SCAN

The system updates the pile estimate.

■ VERIFY

Compare the reading with delivery records.



WHEN CREWS LOAD SALT

The pile gets smaller as material goes out.

■ LOAD

Crews take salt for winter operations.

■ TRACK

The next measurement reflects the change.

■ PLAN

Staff use trends to anticipate resupply.



WHAT THE SCREEN SHOWS

Think of it as a digital view of the salt pile.

3D PILE

Shows the shape of the material.

ESTIMATED VOLUME

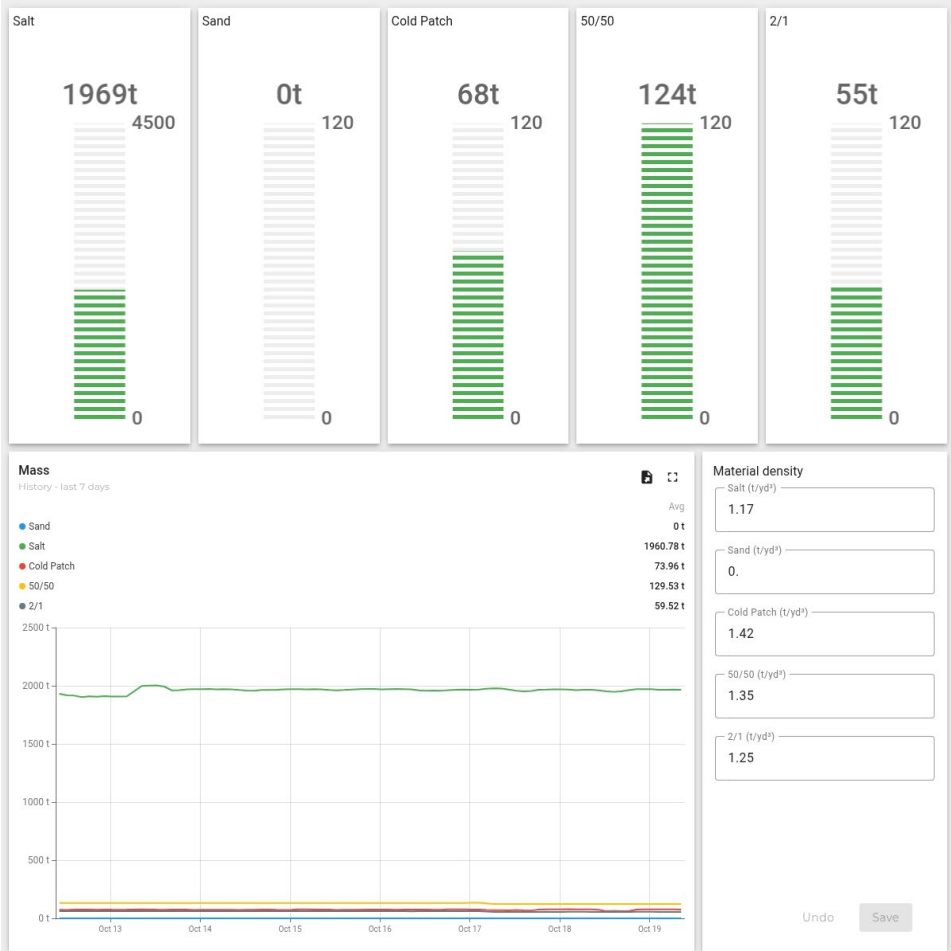
Shows how much space the pile occupies.

CHANGE OVER TIME

Shows whether inventory is increasing or decreasing.

THE INVENTORY DASHBOARD

A snapshot of estimated stock on hand and changes over time.



ESTIMATED MATERIAL ON HAND

Salt: 1,969 t
Sand: 0 t
Cold Patch: 68 t
50/50: 124 t
2/1: 55 t

TRENDS AND REPORTS

View inventory trends and run reports to review material quantities and changes over time.

Estimated tons depend on the material density setting. Check unusual changes against delivery and usage records.

SALT INVENTORY AT MULTIPLE LOCATIONS

Track each storage location separately to see what is available and where.



KNOW WHAT EACH SITE HAS

Review inventory by location.
Use the correct site dashboard when checking available salt.

KEEP LOCATION RECORDS ACCURATE

Record deliveries, usage, and transfers against the correct location. Run reports to compare inventory and changes at each site.

Example dashboard shown. Quantities are a snapshot, not a combined total for all locations.

GETTING ACCURATE LiDAR READINGS

Reliable estimates depend on density, a clear sensor view, and review.

■ VOLUME TO TONS

The system measures volume; estimated tons depend on material density.

■ CLEAR SENSOR VIEW

Blocked sensors, equipment, and pile shape can affect readings.

■ RECOGNIZE UNUSUAL READINGS

Unexpected inventory changes or sensor damage can signal a reading that needs review.

LIQUID STORAGE AND PUMPS

Separate equipment supports winter maintenance materials.

■ STORAGE TANKS

Hold liquid materials used in operations.

■ PIPING AND PUMPS

Move materials through the system.

■ FOLLOW PROCEDURES

Use approved operating and safety practices.



WHY ACCURATE MATERIAL CHARGES MATTER

4,000 tons/year × \$85.07/ton = approximately \$340,280 in annual salt costs.

MCRC impact if material is charged to the wrong location:

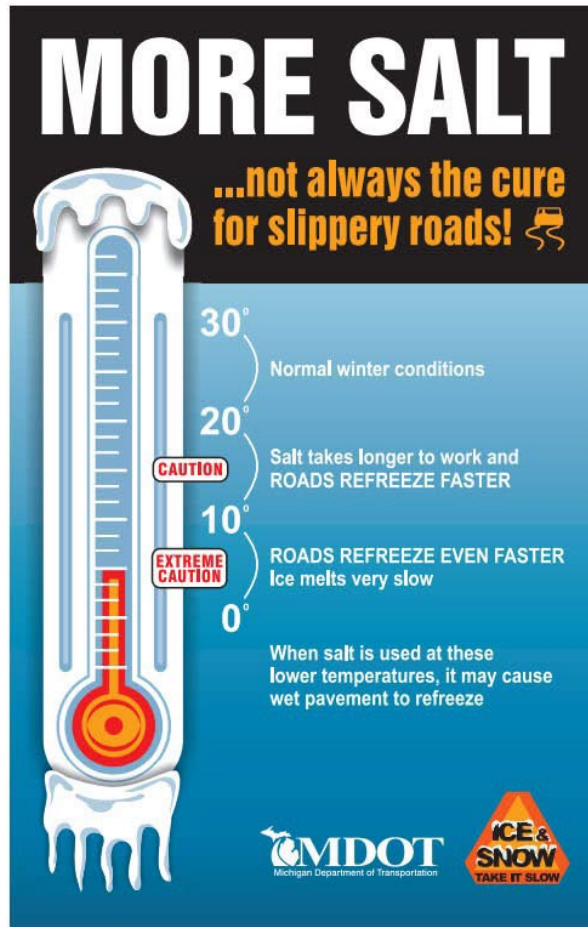
Share mischarged	MCRC tons / year	MCRC cost mischarged
10%	400	\$34,028
20%	800	\$68,056
30%	1,200	\$102,084
50%	2,000	\$170,140

Hypothetical: 600,000 tons statewide × \$85.07/ton = \$51,042,000.

600,000 tons is a hypothetical example. Statewide costs use the same \$85.07/ton assumption. Mischarging shifts costs between locations, not necessarily total expense.

SALT INVENTORY AND WINTER CONDITIONS

Knowing what is on hand supports planning throughout the winter.



PLAN FOR RESUPPLY

Use LiDAR readings and reports to track available salt and anticipate resupply.

The MDOT graphic highlights how winter temperatures affect salt performance.

WHAT SUCCESS LOOKS LIKE

A simpler way to manage salt through the season.

■ LESS GUESSING

Staff can check an updated estimate.

■ FEWER SURPRISES

Trends can help plan deliveries.

■ MORE TIME FOR THE WORK

Less manual measuring means more time for operations.



BOTTOM LINE

LiDAR helps us know what we have and plan what we need.



SCAN → CHECK → PLAN

Help the Snow Boogey stay ready!
Know what is on hand.
Track each location.
Charge material accurately.

Questions?



Our Crew. Your Roads.

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