

2019 TSMO365 Peer Exchange Workshop

June 25 & 26, 2019 (9:25-9:35 am)

Salt Lake City, Utah

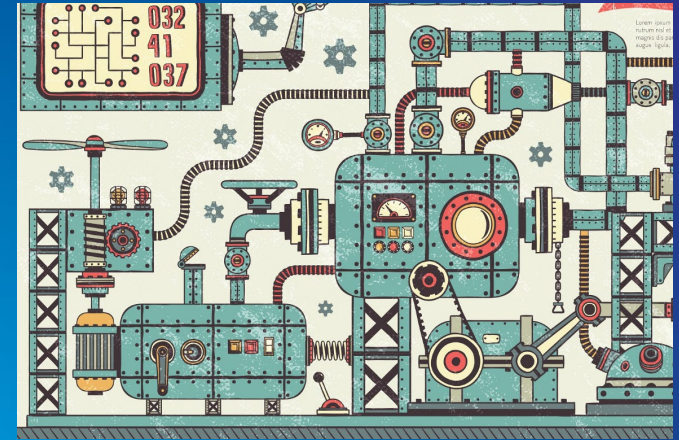
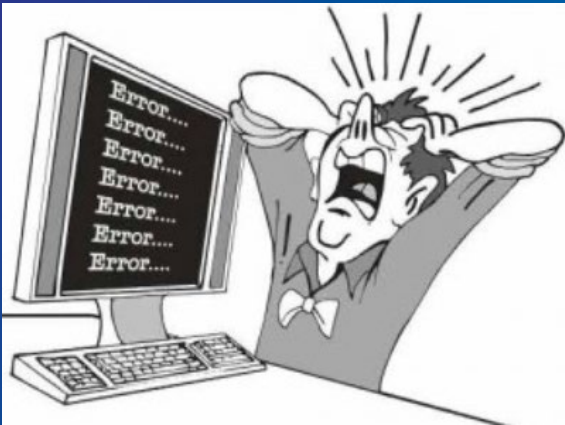
AASHTO CTSO Community of Practice on Road Weather Management

AND

**Building a Strong Transportation Systems Management and Operations
(TSMO) Foundation**

for

Weather Responsive Management Strategies and Solutions



Weather DATA!

What to do with it?

Collection and Management,
Integration, Applications, etc.

ESS Auto Triggers Messaging/Warnings for Curves and Bridges



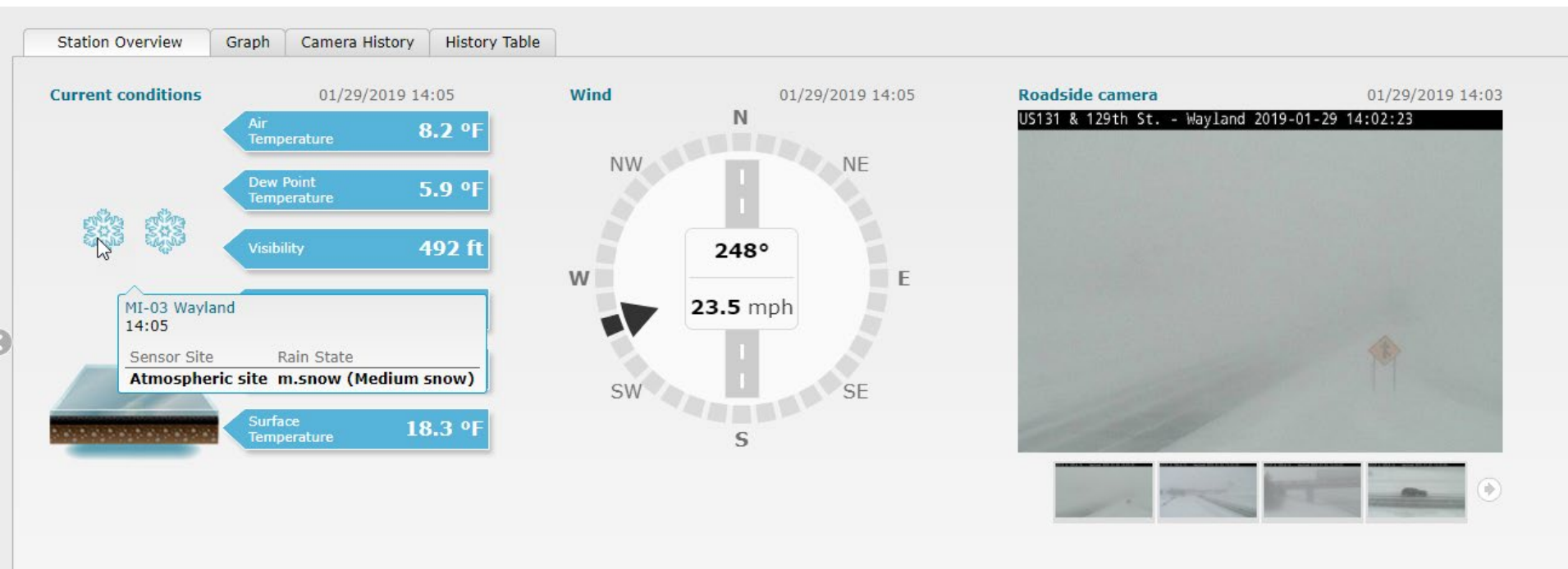
Active ESS Warning System Detects Slippery Road Conditions

Safety Benefits:

- Know when to pay attention (static signs can be just background & unnoticed)
- Alerts drivers when to pay attention
- Gives motorists extra time to react



ESS Data Triggers Auto Messaging to DMS



**BLOWING SNOW
DETECTED AT
M-179 (EXIT 61)**

Status: OK

Event ID 221408

ESS Image - Foggy Conditions



Examples of DMS Motorist Advisories/Warnings

White Out Conditions

WHITE OUT CONDITIONS
ON I-94
REDUCE SPEED

Icy Roads

SLIPPERY ROADS
WB I-94
REDUCE SPEED

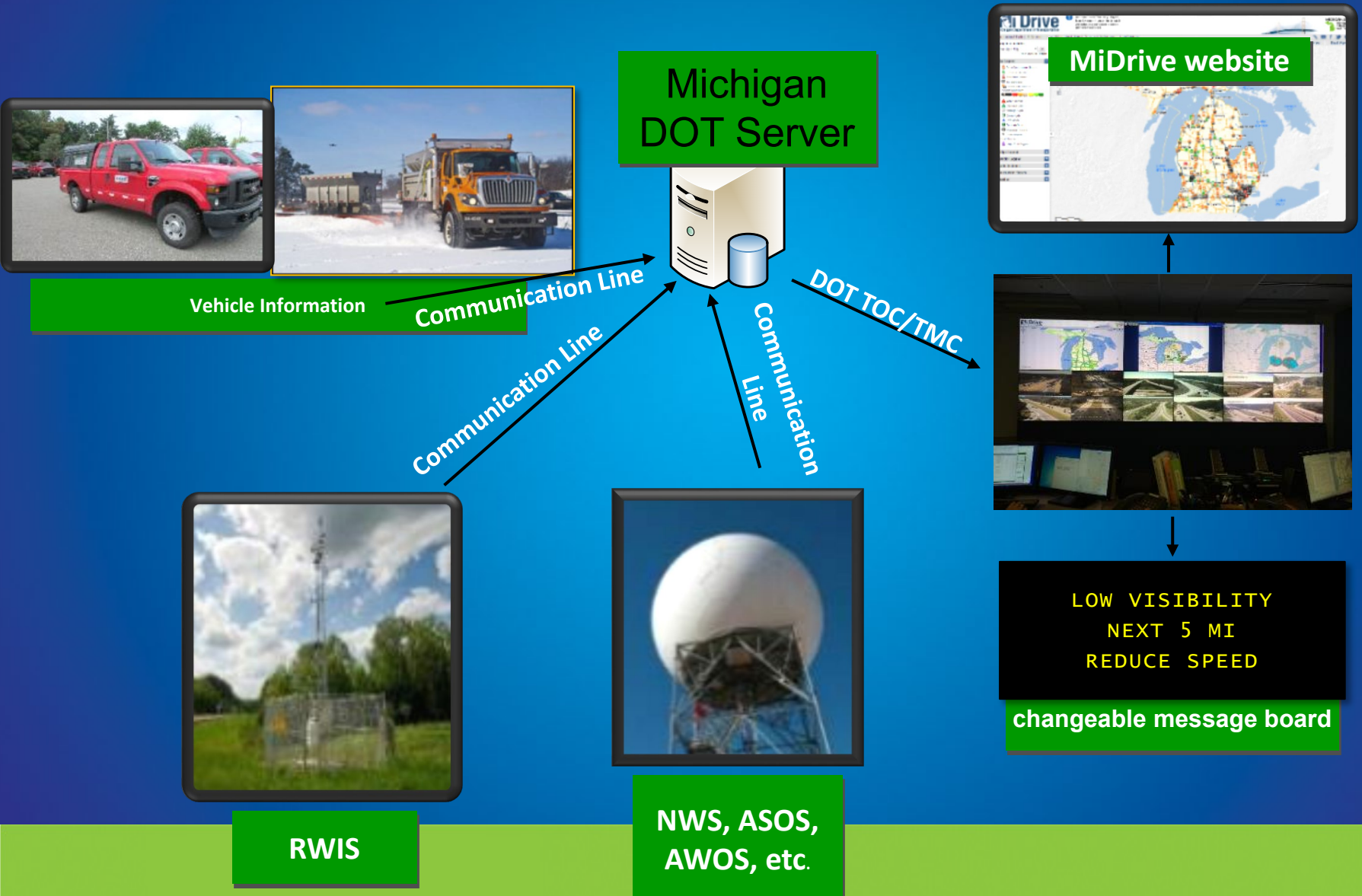
Low Visibility

LOW VISIBILITY
NEXT 5 MI
REDUCE SPEED

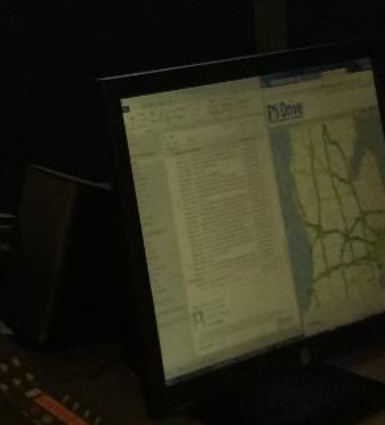
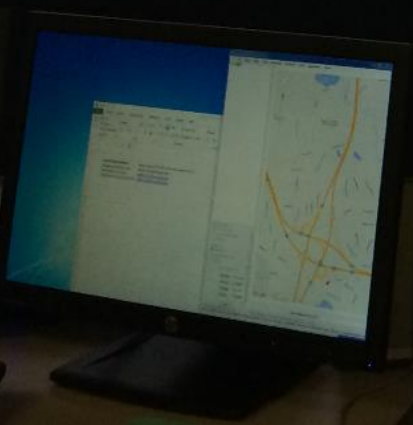
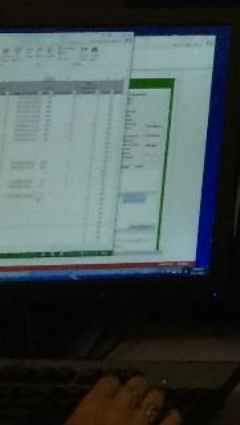
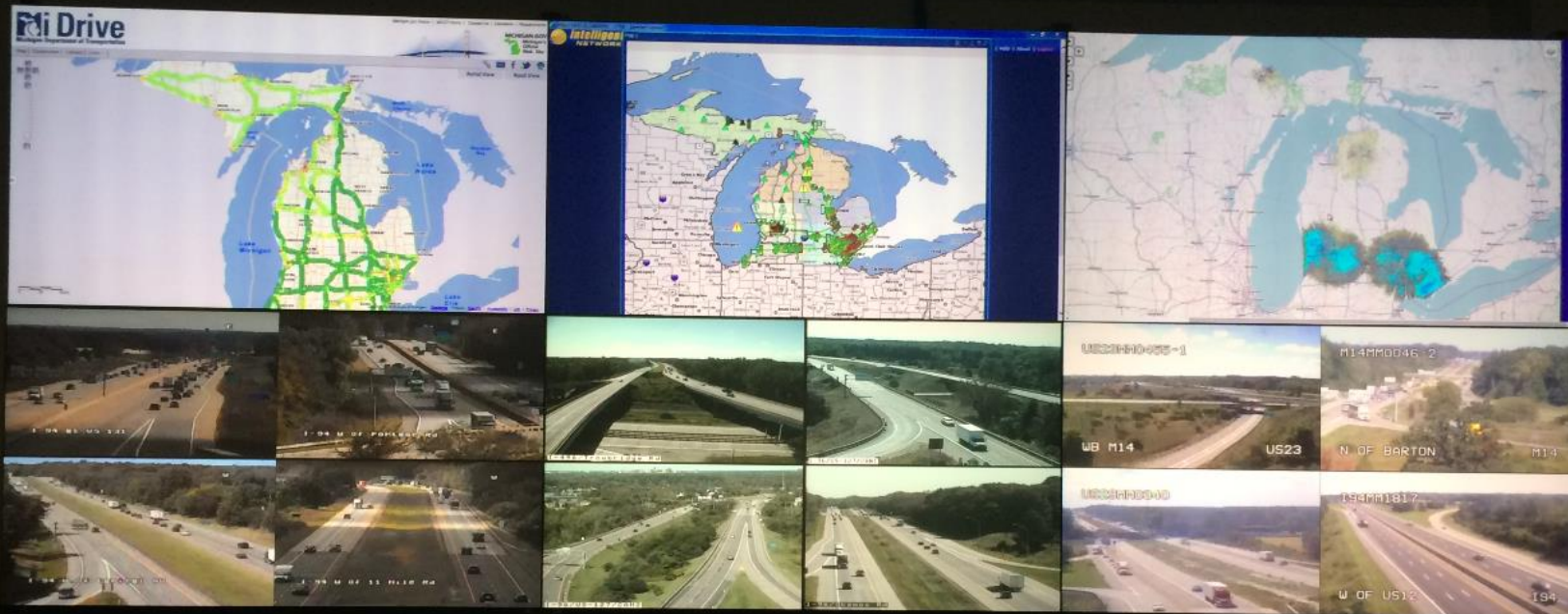
Tornado Warning

TORNADO WARNING
INGHAM COUNTY
8:00 – 10:00 AM

Michigan DOT Vehicle Data Collection Description







Snow Plow Trucks Images on MiDrive



www.Michigan.gov/drive

Trucks visible when :

- Driving >10mph
- & Within 50ft of trunkline
- & Plow down and/or spreading material

Currently Plowing



Time at Location: 02/29/2016 10:43 AM
Plowing

Jump to a Location

Enter Zip or City

Go

[Save View as Default](#)

Map Legend

- ☐ Partial Construction Closure
- ☐ Future Construction
- ☐ Total Road Closure
- ☐ Camera Image
- ☐ Camera with Weather
- ☐ Current Speed (mph)
0 1-10 11-20 21-30 31-40 41-50 51-60 61-70
- ☐ Active Incident
- ☐ Clearing Incident
- ☐ Message Signs
- ☒ Snowplows
- ☒ Snowplows with Cameras
- ☐ Truck Parking
- ☐ Carpool Lots
- ☐ Rest Areas
- ☐ Roadside Parks
- ☐ Passenger Airports
- ☐ Public Airports
- OR Just Display...
- ☐ Major 2015 Projects

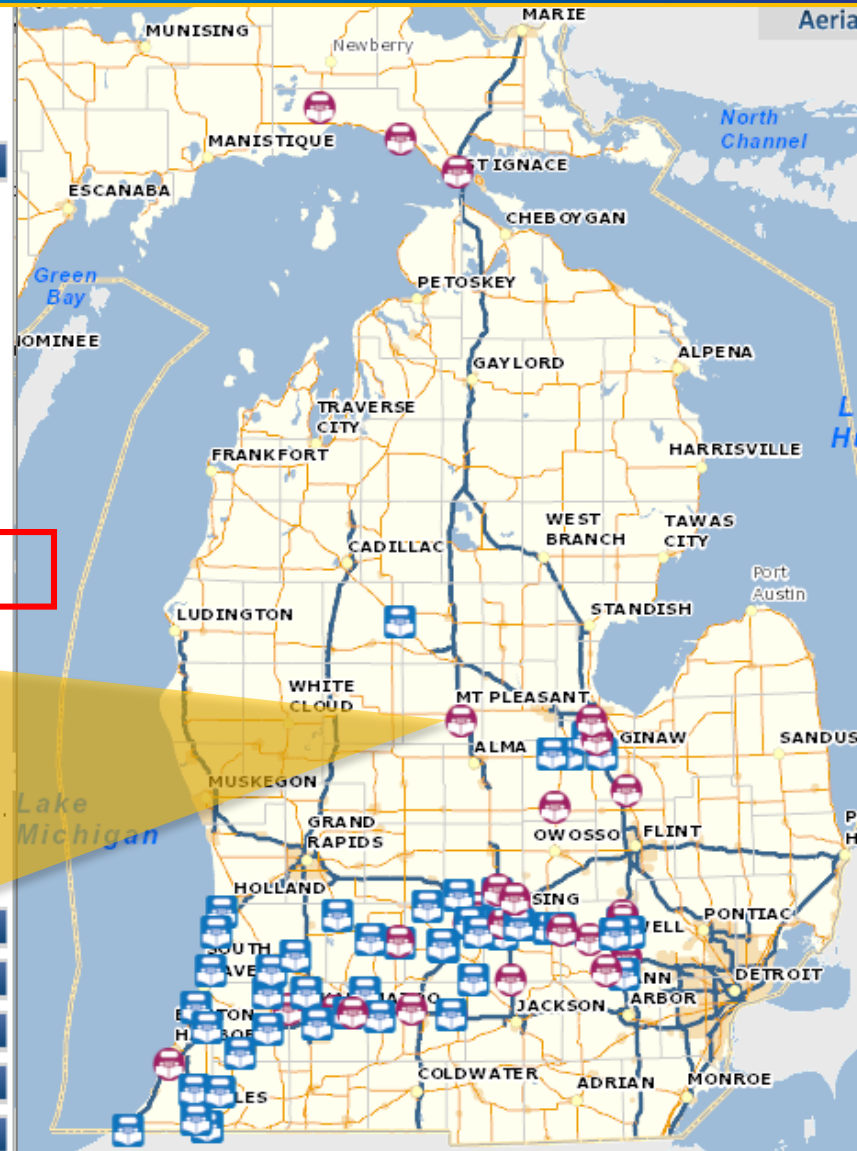
Bridge Legend

Corridor Legend

Traffic Incidents

Construction Search

Weather



Data & Performance Metrics - Minnesota DOT MDSS Usage Reports

Salt Usage
vs. MDSS
Recommended

Vehicle
Speed While
Applying
Chemical

Average
Precipitation

End of Shift
Report

Material
Usage By
Route

AVL Status
Report

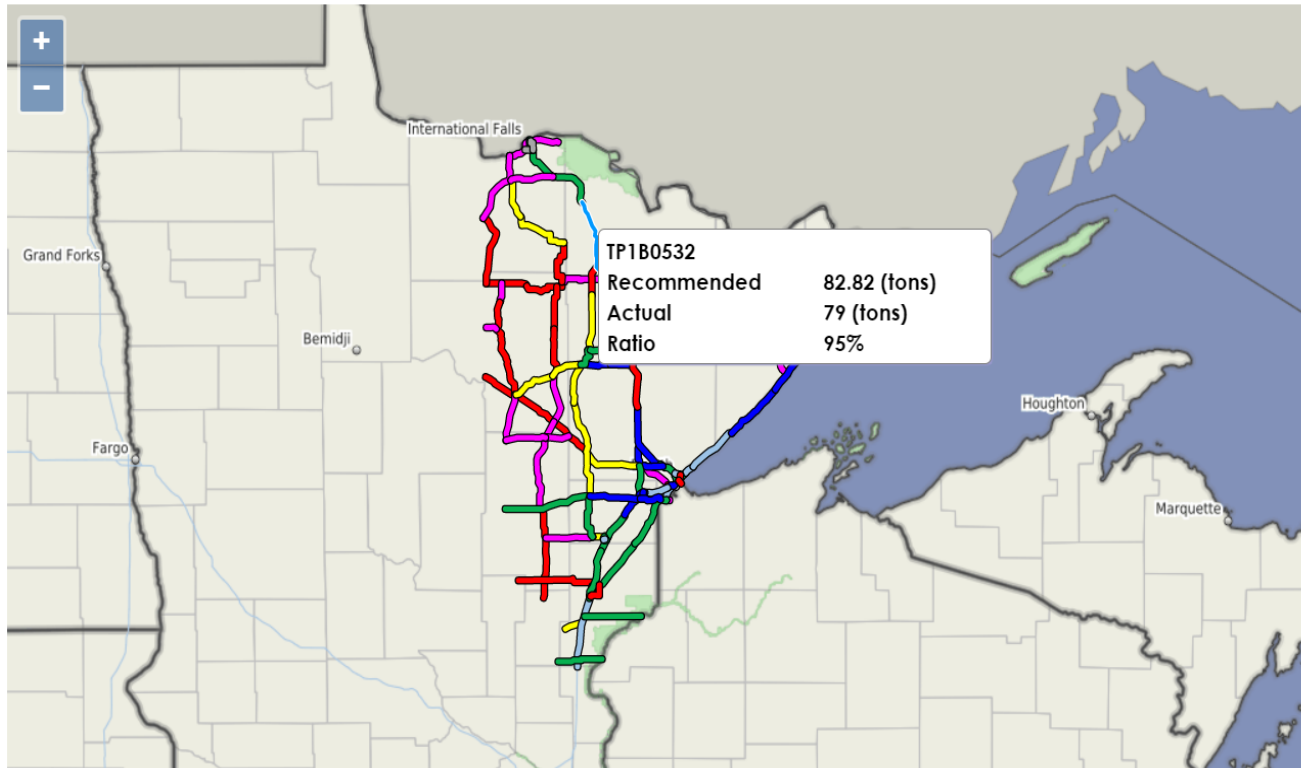
Sander
Status Report

Salt Usage vs. MDSS Recommended

2/1/2017 - 2/28/2017

Export to CSV

● Tons
● lbs / In mi



Error

Recommendation Without
Application

< 50% Recommended
(Under Application)

51% - 79% Recommended
(Under Application)

80% - 120% Recommended
(Target Application)

121% - 149% Recommended
(Potential Over Application)

150% - 249% Recommended
(Potential Over Application)

> 250% Recommended
(Over Application)

Application Without
Recommendation

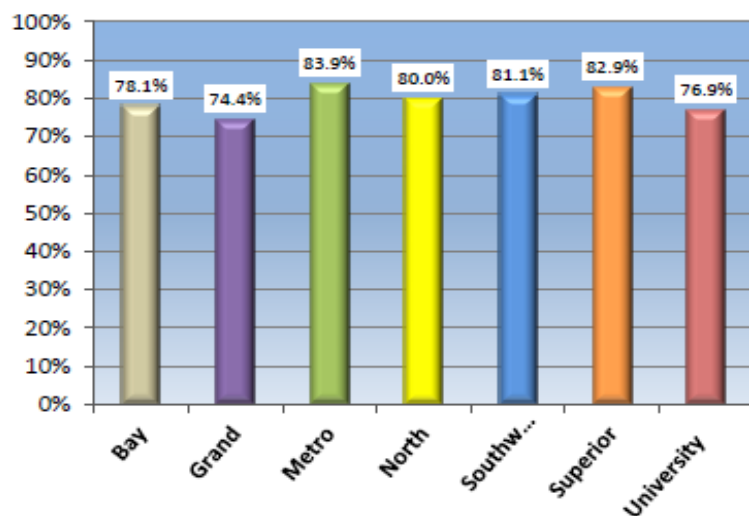
Data & Performance Metrics

FY 2017 MDOT Direct Force Salt Efficiency Data*

3/1 - 3/16

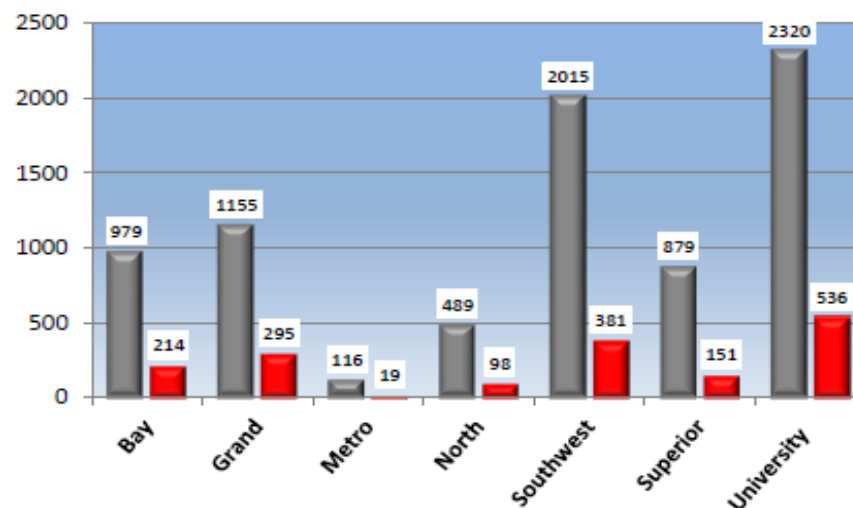
Salt Efficiency per Region

Period: 3/1 - 3/16

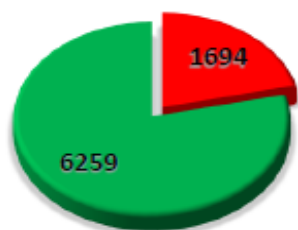


AVL Salt Tonnage per Region

■ Total Salt (this period)
■ DSE** (this period)



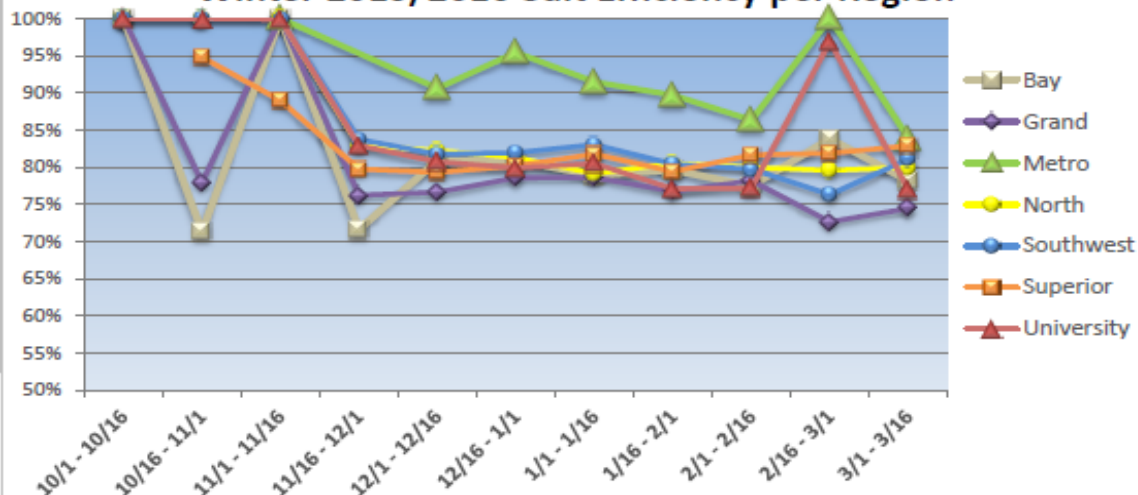
Statewide Direct Force Salt Usage Efficiency



3/1 - 3/16
Total Tons
7952
Efficiency
78.70%

■ Total DSE** (tons) ■ Total OSE* (tons)

Winter 2015/2016 Salt Efficiency per Region



* Based on AVL data and MDOT Salt Bounce and Scatter Study findings.

** Diminished Salt Efficiency (DSE) is a result of salting at speeds faster than 25mph.