Outline

• AVL/MDSS Contract
  – AVL Website
  – MDSS Website
• New for Winter 2015/2016
• Future Goals
AVL/MDSS Contract Overview

**AVL**: Automated Vehicle Location  
**MDSS**: Maintenance Decision Support System

- Awarded Contract to Delcan Technologies (now part of Parsons)  
  September 15\(^{th}\), 2013

- Contract is for 3 years with options for 2 additional years.

- Vendor is responsible for providing weather forecast and treatment recommendations
Data Collection

**AVL/MDC Units**
(310 WMTs currently active)
- Air and pavement temps
- Plow Blade up/down
- Wing plow & Towplow usage
- Camera images
  (120 WMTs currently equipped)
- Spreader information
  - material type
  - application rate
  - amount used
- Engine code data

**MDSS (Iteris)**
- Weather forecasting
- Pavement condition
- Treatment recommendations

**MDSS Provider** (Iteris)
**AVL Provider** (Parsons)
**Secure Website(s)**
**WMTs**
**Authorized Users**
In-Truck Touch Screen
AVL Website

Features:

• Near-Real Time Data
  – Maintenance Operations
  – Camera Images

• Historical Information
  – Breadcrumbs

• AVL Reports

https://mdot.delcan.net/atms
Real-time Data
- Operational
- Engine
- Camera Images

AVL Website

Vehicle: 04-4032
Speed: 17 mph
Belly Blade: down
Right Blade: up
Solid Rate: 350.2 lb/mi
AVL Website

Historical Operations Playback
*(Breadcrumbs)*
Commonly Used Reports for Winter Maintenance

- Blade Usage
- Material Usage
- Salting Speed Compliance
- Vehicle Health Check
- Engine Diagnostics
- Geofence Summary
FY 2016 Salt Speed Compliance and Efficiency*

Salt Usage and Effectiveness
Region: SW Region
Date Range: 2/16/2016 to 3/1/2016

Total Salt Spread (tons) 260.4
Total DSE (tons) 299.8
Salting Efficiency 86.28%

Winter 2015/2016 Salt Efficiency: Southwest

Salt Speed Compliance
Region: SW Region
Date Range: 2/16/2016 to 3/1/2016

Garage: South Haven
45mph Compliance 97.8%
35mph Compliance 71.7%
25mph Compliance

Garage: Sawyer
45mph Compliance 97.6%
35mph Compliance 69.6%
25mph Compliance

Garage: Niles
45mph Compliance 91.6%
35mph Compliance 34.7%
25mph Compliance

Garage: Marshall
45mph Compliance 91.8%
35mph Compliance 24.1%
25mph Compliance

Garage: Kalamazoo
45mph Compliance 94.5%
35mph Compliance 52.2%
25mph Compliance

Garage: Jones
45mph Compliance 89.3%
35mph Compliance 33.6%
25mph Compliance

Garage: Coloma
45mph Compliance 89.5%
35mph Compliance 25.1%
25mph Compliance

* Efficiency based on AVL salt speed compliance data and empirical data from the MDOT Salt Bounce and Scatter Studies. Data assumes standard spreaders used.

** Salt applied at speeds faster than 25 mph increases the bounce and scatter which diminishes salting efficiency.
What is MDSS?
Maintenance Decision Support System
MDSS Website

ClearPath Weather
Iteris’ MDSS web-based solution

ClearPath Weather aggregates location-specific weather data and applies advanced data assimilation and customizable data solutions. This includes high-resolution information and applications ranging from short-term conditions to both short-term and long-range weather forecasts, all of which can be used to improve decision-making.

Empower your winter maintenance decision makers with the information they need from ClearPath Weather. The ClearPath Weather suite of tools is being used today across the United States to make the most effective maintenance response.
MDSS Website

Snow Route Treatment Recommendations
**(Rates per 12’ Lane mile, not 24’)**

Weather Forecasting per Snow Route (table and graph)

150 lbs of Prewet Salt (w/ Brine)
Start Time: Wed 8:23am
End Time: Wed 10:03am

Graph View

Table View
New for 2015/2016

• In-Truck condition reporting pilot
• RWIS/ESS data on MDSS site
• Snow plow locations on MiDrive
• MDSS Mobile App
• Local Agency access to MDSS
In-Truck Condition Reporting
MDSS Website with RWIS

(MIIFL)
US-131 @ County Line Rd
Thursday, March 3, 2016 6:45 AM - 0500

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History | Forecast
---------|-----------
RWIS     | Iteris    | Ten Day Forecast | NWS
TABLE    | GRAPh     | TABLE         | GRAPh

Photo A
Typical ESS

Photo B
Pavement Sensor

RWIS / ESS Sites
Snow Plows on MiDrive

Trucks visible when:
- Driving >10mph
- & Within 50ft of trunkline
- & Plow down and/or spreading material
MDSS Mobile App

- Map View
- Text Forecasts
- Routes
- FAA/NWS Obs
- RWIS Obs
- METAlerts
- Dashboard
- Reporting
Contract County Access
Herbicide AVL Pilot

**When:** Summer 2016

**What:** Pilot Key Features

- 5 Trucks
- In-Truck touch screen monitor
- Electronic spray log
- Flow meter recording (on/off)
- GPS location on Map
- Invasive and Endangered Species locations display on monitor
Next Steps for MDOT

- Monitor Herbicide AVL Pilot
- Expand MDSS forecast routes to Contract County Areas
- Test out additional mobile app capabilities
- Continue to improve the accuracy of AVL reports
- Incorporating ITS Traffic cameras on website
Thank you

Michigan Department of Transportation AVL/MDSS program questions:

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