MN/DOT’s role with FHWA’s Integrating Mobile Observations (IMO)

Presented by:
Curt Pape
Things I’m not going to talk about today

- MDSS – #1 on Curt’s priority list
- Money – MN/DOT can save $5-$10m per year by implementing the products MDSS and mobile technology make possible
- Victories– the fact that MN/DOT has been able to reverse employee attitudes towards these products in less than 1 year
Items I will focus on

- MN/DOT’s binge/purge cycle with AVL
  - 0-125-0-215
- Positive effect of IMO on MN/DOT’s deployment
- Struggles and lessons learned
- How to use our past to build a better future
Effects of FHWA IMO Project

• MN/DOT was able enhance its MDSS/AVL effort with this project
  • Added support personnel to handle extra workload
  • Accelerated AVL deployment

• Forced us to think and work “out of the box”
  • Performed development and testing in many areas that would have waited several years without the project
  • Developed interim products to test value and employee acceptance
Present Status

- Approximately 300 plow routes with MDSS throughout the state
- AVL is currently installed in 210 plows and 6 Light Duty trucks
  - All trucks with AVL have interfaces allowing them to collect data from the Controller Area Network (CAN)
  - 2010 & 2011 Navistar’s have a much more robust data set than the older Sterling’s
    - Additional sensors were installed to allow us to collect data on Sterling’s so data set was similar to the CAN info on the newer trucks
    - Navistar is interested in helping us get additional data from their trucks
- End of shift report allows our operators to report chemical use faster and more accurately
END-OF-SHIFT SCREEN
Select the ‘End-of-Shift’ button, then select the time period you were in the truck, and finally select ‘Show End of Shift’ button.
The End-of-Shift Report below shows type and amount of material applied and number of miles/hours spent on each route maintained during shift.

<table>
<thead>
<tr>
<th>Route(s)</th>
<th>Truck(s)</th>
<th>Miles</th>
<th>Hours</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>206564</td>
<td>43.2</td>
<td>2.5</td>
<td>1541 lbs Sand (0.77 tons)</td>
</tr>
<tr>
<td>TP1VR301</td>
<td>206564</td>
<td>33.5</td>
<td>1.3</td>
<td>1326 lbs Sand (0.66 tons)</td>
</tr>
<tr>
<td>TP1VR302</td>
<td>206564</td>
<td>7.1</td>
<td>0.5</td>
<td>182 lbs Sand (0.09 tons)</td>
</tr>
<tr>
<td>TP1VR306</td>
<td>206564</td>
<td>0.2</td>
<td>0.2</td>
<td>None</td>
</tr>
</tbody>
</table>
Current staffing

• 3 MDSS/AVL Implementation Coordinators
  – Divided State into geographic regions
  – Focus on Operator Training – Both AVL & MDSS
  – Spread expertise throughout the State
• 3 Mobile Equipment Coordinators
  – Performed AVL installations to speed process
  – Develop resources and train mechanics on installation and maintenance
• Additional positions at Central Shop (new equipment installations)
Accomplishments

• Developed and documented a “Standard Install Package”
• Change to “Regional” support structure has resulted in much better interaction with districts
• Greater attention to detail has improved AVL performance
• Developed hardware and software to interface with vehicle CAN
**Plans for upcoming season**

- Continue installation of AVL in Snowplows
- Work with Navistar to expand & refine CAN data set
- Gain understanding of data needs for M-5 and other ways to improve current processes using CAN data
  - Develop interface between AVL and M-5
- Build knowledge base within Districts
  - Goal is to “assist” and provide expert resource so all areas have similar installations
- Expand use of AVL in light duty vehicles
  - More robust data set and closer to goals of CV effort
Thank you