E-Ticketing at NDOT

2022 NDOT PM Conference
Joint AGC/NDOT Session

March 8, 2022
Andy Dearmont - NDOT
E-Ticketing at NDOT

What is E-Ticketing?
• The generation and delivery of a material batch ticket from the production plant to the field inspector --- electronically.

Why has it become a priority?
• Promotes safety and efficiency.
• Help with social distancing associated with the pandemic.
• It is a FHWA initiative. 

Every Day Counts Innovation for a Nation on the Move
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What has NDOT been up to:

- Reviewed Options: off-the-shelf vs. customized solutions.
- Developed a “customized” solution concept.
- Worked with AGC through an E-Ticketing Task Force.
- Validated the concept thru an E-Ticketing Pilot Project.
E-Ticketing at NDOT
Off-the-shelf Solutions
Developed by Vendors (like Astec, Command Alcon or FleetWatcher)

• Include many more options other than just e-ticketing that are benefits to Asphalt Producers/Contractors.
  • Tons loaded & delivered to various jobs.
  • Real-time Key Performance Indicators (KPIs)
    • (Tons per hour, cycle time averages, and Trucking cost per ton)
  • Equipment use Tracking.
  • Data Management and Reporting Flexibility
    • Producer/Contractor Owns the Data.
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Developed by Vendors (like Command Alcon, FleetWatcher or Astec, )
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# E-Ticketing at NDOT

## off-the-shelf vs customized solution

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<tr>
<th>PROs</th>
<th>CONs</th>
<th>PROs</th>
<th>CONs</th>
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<tbody>
<tr>
<td>easier</td>
<td>more training</td>
<td>fits existing</td>
<td>needs IT</td>
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<tr>
<td>faster upstart</td>
<td>expensive</td>
<td>Flexible</td>
<td>beta testing</td>
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<tr>
<td>low maintenance</td>
<td>sole source issue</td>
<td>only one system to learn</td>
<td>high maintenance</td>
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NDOT’s E-Ticketing Solution

A Customized Solution:

Developed by NDOT Business Technology Support Division BTSD
Modeled after Utah DOT’s system
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AGC/NDOT E-Ticketing Task Force

Team Leaders:  
AGC: – Sean Vontz, Vontz Paving Inc.  
NDOT: – Andy Dearmont, Lincoln Construction Office

Team Members:  
AGC: – Matt Soucie, Werner Construction  
   – Jake Paulsen, Paulsen Inc.  
   – Dan Lewis, Knife River Midwest;  
NDOT: – Mick Syslo; Materials & Research/Roadway Design  
   – Ty Carlson, BTSD  
   – Drew Wilson NDOT D6 DCE

Team Sponsors:  
AGC – Katie Wilson, AGC Nebraska Chapter Executive Director  
NDOT – Jim Knott, State Construction Engineer
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AGC/NDOT E-Ticketing Task Force

- Is the Utah Spec available for them to look at?
- Other individual state activities?
- Cell connections in rural areas. How to handle these scenarios?
- What will be fed back to the contractors?
- Will it be like the daily asphalt reports?
- Which will govern, paper or e-tickets?
- Will NDOT host a peer exchange?
- Database sharing/security.
- Learn from Contractors about the areas where e-ticketing failed.
- GPS Tracking/Bread-crumbling.
- Who in industry wants to see data on a mobile device?
Task Force Conclusions for NDOT’s solution:

- A consistent solution that limits output to a single type.
- Minimal modification to producer’s software to generate a JSON data file (in lieu of a paper ticket).
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AGC/NDOT E-Ticketing Task Force

Task Force Conclusion—Remining Concerns:

• Internet connectivity challenges remain.
• Development of Data Sharing Aspects
  (i.e., Daily Summary of Asphalt Produced)

Final Report was completed 8/19/21. It is available thru Katie Wilson or Myself
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Pilot Project

Need to have Good Internet Connectivity at Plant and along the Project N-21; Eustis to Cozad

• Primary Goal—Proof of Concept—was Successful
• Paper Tickets remained Document of Record
• Identifying Arriving Trucks is Challenging
• Simplified Random Sampling Process
• Reliable Enough to Collect Paper-Ticket at Plant at End of Day
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Future Pilot Project

1. Still looking for Good Internet Connectivity at Plant and along the Project.
2. Paper Tickets remain Document of Record.
3. May require Truck-ID plaques at Back of Truck (Trailer)
4. Goals:
   • Develop Auto-Generated Daily Production Summary
   • Investigate Methods to Improve/Automate ID’ing of Trucks as they Arrive.
   • Allow Producers and NDOT Staff to become familiar NDOT’s Solution
   • Identify Opportunities and Challenges for the Evolution of the Solution
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