

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



E-Ticketing at NDOT

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.

E-Ticketing at NDOT Off-the-shelf Solutions

Developed by Vendors (like Command Alcon, FleetWatcher or Astec,)



E-Ticketing One Sheet

FleetWatcher e-Ticketing Overview

The FleetWatcher e-Ticketing solution will allow DOT Engineers to view scale tickets in real-time, in the field, on their phones, tablets, or computers without ever having to touch any paper.

By simply designating which projects are DOT projects, paving companies can specify which scale tickets are visible to DOT Engineers. This same, simple tagging process makes it easy for DOT Engineers to focus on the project(s) for which they're responsible rather than looking at all DOT projects.

FleetWatcher delivers this e-Ticketing solution by integrating with the plant loadout/scale computers and sending the ticket information to the FleetWatcher servers in real-time via a secure Web Service. Those same tickets then immediately become available to DOT Engineers via phone, tablet, or computer.

An example of what a DOT Engineer will see in the field is shown here. The DOT engineer can click on any of those tickets to enter notes, temperatures, or waste tonnage. All entries are tracked and audited if any changes to entries are made.

Project Number	Plant	Scale	Scale Type	Scale
41037066	Scale 000001	Scale 000001	Scale 000001	Scale 000001
41037067	Scale 000001	Scale 000001	Scale 000001	Scale 000001
41037068	Scale 000001	Scale 000001	Scale 000001	Scale 000001

Each e-Ticket includes

- Project Number
- Plant Identifier
- Date and Time
- Sequential load #
- Mix
- Truck Identifier
- Gross and Net Tons
- Cumulative Loads
- Cumulative Tons

Field Personnel Can Add

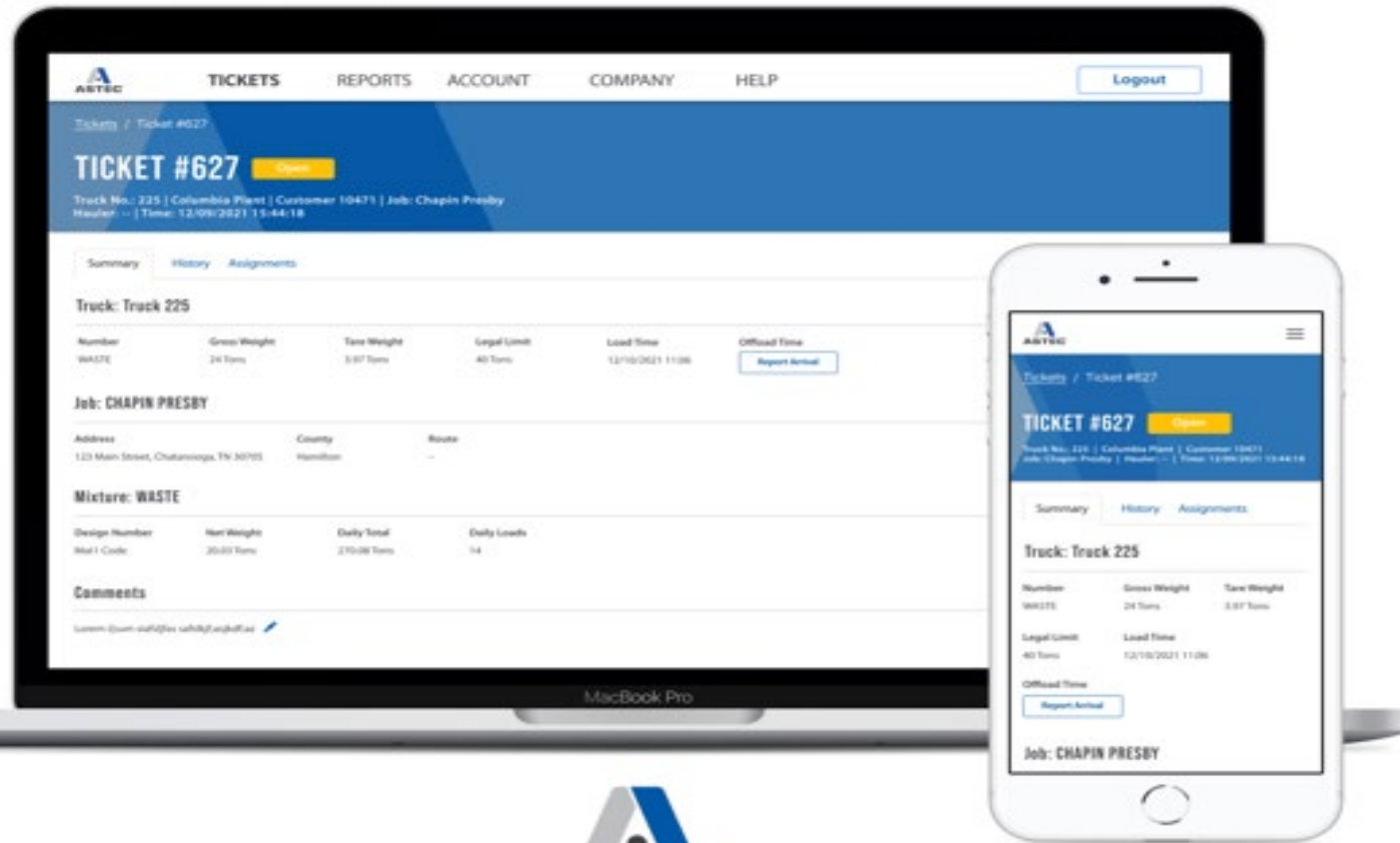
- Temperatures
- Waste tons
- Notes

KNOWLEDGE IS A POWERFUL TOOL.

E-Ticketing at NDOT

Off-the-shelf Solutions

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Include many more options other than just e-ticketing that are benefits to Asphalt

Producer/Contractor Owns the Data.

E-Ticketing at NDOT

off-the-shelf

customized solution

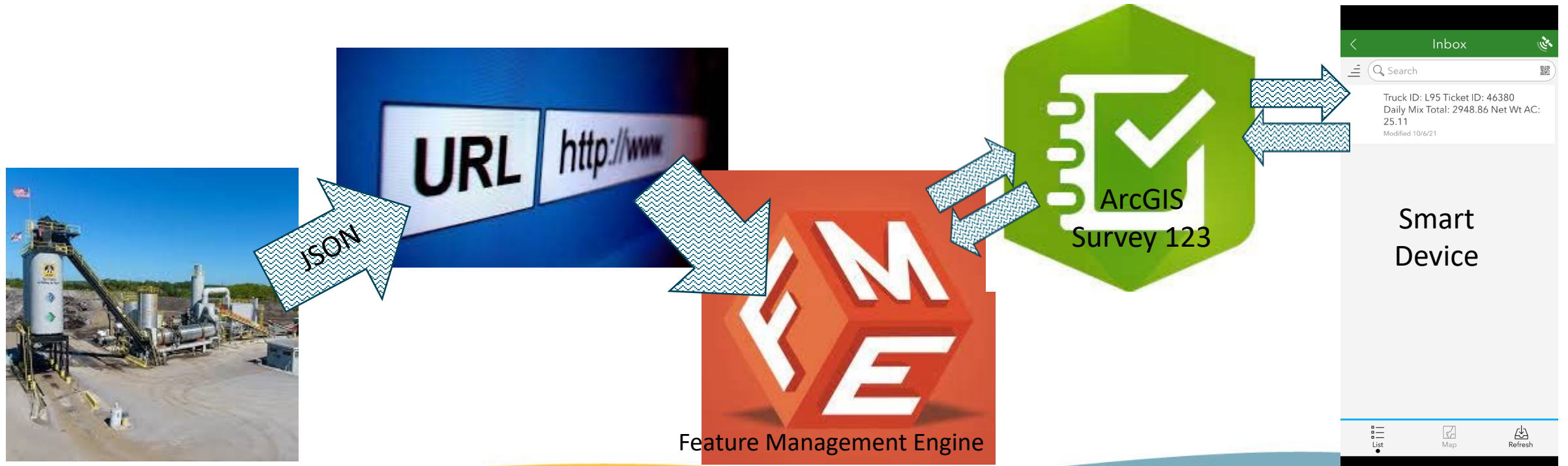
PROs	CONs	PROs	CONs
easier	more training	fits existing	needs IT
faster upstart	expensive	Flexible	beta testing
low maintenance	sole source issue	only one system to learn	high maintenance

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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

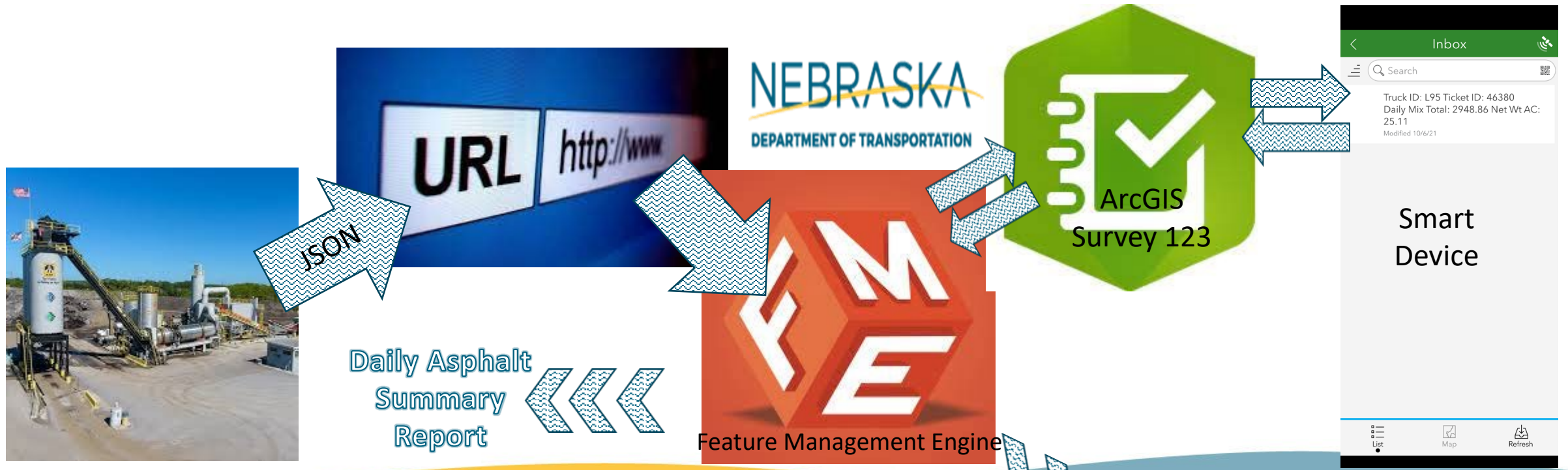


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NDOT's E-Ticketing Solution

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Others?

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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?

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AGC/NDOT E-Ticketing Task Force

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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