



# NDDOT E-Ticketing

Presenter: Scott Clausen, PE

Construction Services Division, NDDOT

# The Why

---

- Safety – Remove inspector from truckside/traffic hazards
- Efficiency
  - No lost tickets
  - All tickets in 1 location
  - Easily sort tickets

# First Pilots (2016)

- Devils Lake change ordered onto two projects – same contractor
  - Highway 30 Project
    - Upgraded loadout system – Couldn't get everything to talk to each other
    - Used mobile hotspot generators
    - Ended up spending more money and never got it going properly
  - Highway 52 Project
    - Better signal
    - Large job – 3 paving crews and 2 plants
    - Worked very well
    - Viewed data but didn't use



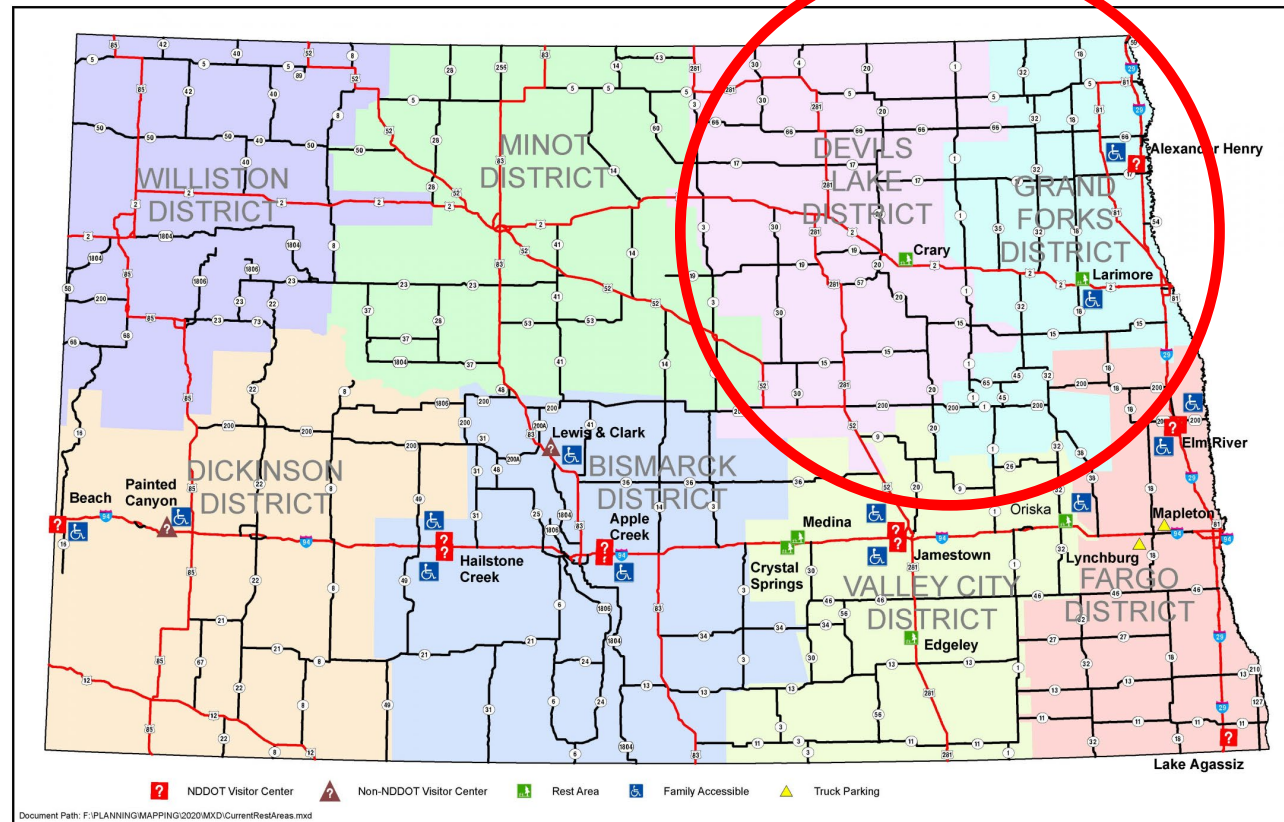
# First Pilots (Continued)

- Grand Forks change ordered onto two projects
  - same contractor
- Highway 200 Projects
  - Good cell service
  - Typical growing pains
    - Learning new system
    - Trucks entered incorrectly
  - Overall went well



# Second Round of Pilots (2018)

- Devils Lake and Grand Forks districts teamed up
  - Used a dedicated contractor for all e-ticket projects
    - 5 in Devils Lake
    - 4 in Grand Forks



# Second Pilot (Continued)

---

- Results
  - 1 project was in a hole – needed a mounted directional antenna. Not much success.
  - Other projects generally faired better.
  - 1 project was able to be paper ticket-free.

# Overall Takeaways

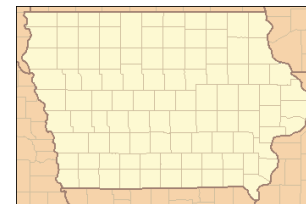
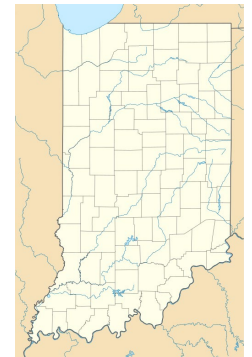
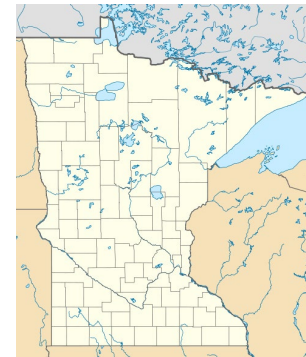
---

- NDDOT
  - Starting to notice the potential
  - Concerns with rural areas
  - How to deal with costs?
- Contractors
  - Reports of contractors unhappy with GPS receivers.
  - Contractor wasn't thrilled with whole process in general.
    - Too much setup
    - Too much tracking of receivers
    - Too costly – little value to them
    - Too much hassle



# FHWA E-Ticket Peer Exchange

- Polled by FHWA about e-construction initiatives and our willingness.
- Set up an e-ticketing peer exchange.
- Attended by multiple State DOT's, FHWA, WSP, Vendors, and Contractors
  - Discussed successes/failures
  - Infrastructure
  - Partnerships
  - Discoveries
  - Plans
  - Best Practices





# Peer-Exchange Follow-Up

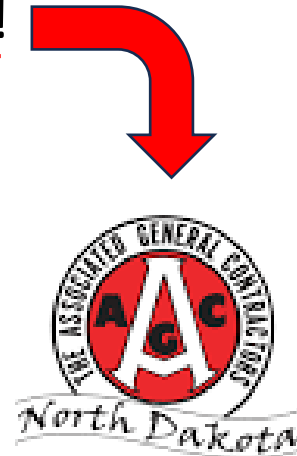
---

- Developed a multi-phase plan based on take-aways and lessons learned
  - Developing a Specification
  - Yearly ramp-ups
  - Creating a bid Line Item
    - Wanted to track costs
    - Provided a way to help smaller contractors convert
  - End goal

# Peer-Exchange Follow-Up

---

- Biggest Take-away: COMMUNICATE WITH THE CONTRACTORS!
  - Sent memo to AGC
  - Presented as topic at yearly AGC meeting
  - Discussed at other events



# Additional Items

- Change-ordered e-ticketing onto two projects
  - Same contractor
  - Favorable conditions
- Worked with Vendor on acquisition of a portal and training
- Worked on writing/plagiarizing our e-ticketing SP
- Developed an SSP
  - One contractor opted in 1<sup>st</sup> year

SP 160(22)  
Page 1 of 3

## NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

### SPECIAL PROVISION

#### E-Ticketing

#### DESCRIPTION

This work consists of providing electronic material tickets (E-Ticket) for all loads of aggregate, asphalt, and concrete delivered to the project.

#### CONSTRUCTION REQUIREMENTS

##### A. General.

30 days before project start confirm that the material suppliers E-Tickets are compatible with the Department's Electronic Ticketing portal (Haulhub).

If necessary, create a programming interface to integrate with the Department's E-Ticketing Portal. Utilize the interface to provide electronic data from the load read-out weighing system at the material source in a manner that is readable by the Department's E-ticketing Portal. Haulhub will be available to coordinate the interface with the Contractor and Subcontractors.

As E-Tickets are generated, submit them to the Department using the Department's Electronic Ticketing Portal.

Payment for material weight delivered to the project will be based upon the eTickets marked "Delivered."

Do not reissue or reprint tickets that have been marked "Delivered," "Pending," or "Rejected" without first notifying the Engineer. The Engineer may reject a reissued or reprinted ticket at their discretion. When a reissued or reprinted ticket is rejected, payment will be based upon the original ticket. When a load is rejected, the Engineer will notify the Contractor that all or a portion of the load was rejected.

The Department will reject any load that does not have a corresponding eTicket unless the cause is beyond the Contractor's control. In such circumstances paper tickets may be permitted at the discretion of the Engineer.

##### B. Calibration and Testing.

Before beginning the project conduct a test of each supplier's integration with the Department's Electronic Ticketing Portal before shipping material. Complete the test at least 15 days before shipping material.

Provide at least 5 calibration E-Tickets from each supplier to be used for the project. The calibration E-Tickets must accurately record the ticket information found in the ticket information below. Mark all categories "TEST". After the Engineer confirms the calibration E-Tickets are entered correctly into the Department's E-Ticketing Portal, void the E-Ticket with the reason being "Department Calibration Test".

Authored By: NDDOT ETS

# Year 1 Implementation

- Began implementing phase 1 of our plan
  - Polled our districts for projects
  - Added a Mandatory e-ticketing SP to select projects
    - 13 projects: six districts
    - Variety: asphalt, aggregate, and PCC
  - Added projects via the optional SSP
    - 8 additional projects: Contractors asked to use
    - Remaining districts accounted for some of these
- Sent a survey to contractors for feedback

The screenshot shows a survey titled "NDDOT e-ticketing Questionnaire" with a teal header. The main content area is light blue and contains three questions. Question 1 asks for a rating from 1 to 5. Question 2 is a text input field for comments. Question 3 has radio button options for "Yes" and "No". At the bottom, there is a teal "Next" button and a progress indicator showing "Page 1 of 4".

**NDDOT e-ticketing Questionnaire**

E-Ticketing Program

1. How would you rate your overall e-ticketing experience on this project? Please rate with 5 considered the best.

1 2 3 4 5

2. Please provide comments to justify your rating in question 1.

Enter your answer

3. Was the e-ticketing Specification/Special Provision clear in its wording?

Yes

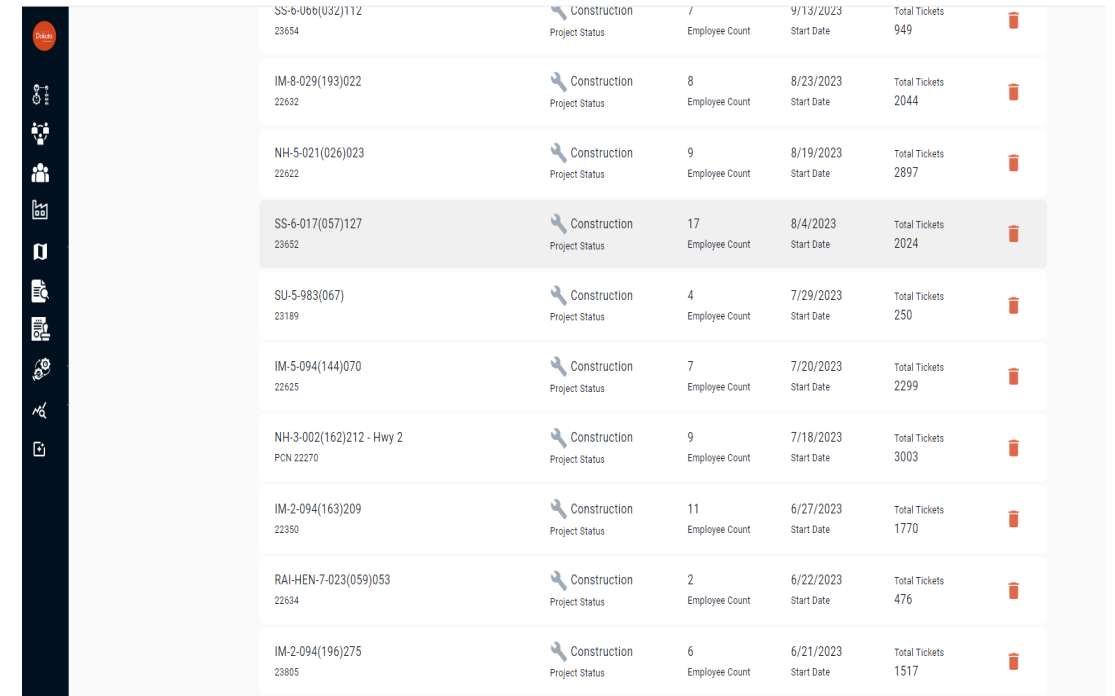
No

Next

Page 1 of 4

# Upcoming Season

- Currently 24 projects
  - Consist of asphalt, aggregate, and PCC
  - All districts have identified
- Continuing with SSP
  - Modified SSP language
  - Contractor must connect with our portal



Project ID	Project Status	Employee Count	Start Date	Total Tickets
SS-6-066(032)112 23654	Construction	7	9/13/2023	949
IM-8-029(193)022 22632	Construction	8	8/23/2023	2044
NH-5-021(026)023 22622	Construction	9	8/19/2023	2897
SS-6-017(057)127 23652	Construction	17	8/4/2023	2024
SU-5-983(067) 23189	Construction	4	7/29/2023	250
IM-5-094(144)070 22625	Construction	7	7/20/2023	2299
NH-3-002(162)212 - Hwy 2 PCN 22270	Construction	9	7/18/2023	3003
IM-2-094(163)209 22350	Construction	11	6/27/2023	1770
RAI-HEN-7-023(059)053 22684	Construction	2	6/22/2023	476
IM-2-094(196)275 23805	Construction	6	6/21/2023	1517

# 2025 and Beyond

---

- Looking to increase total number even more
- Find projects with lower coverage
- Evaluate where we can do better



# Finale

---

- Questions?
- Scott Clausen [sclausen@nd.gov](mailto:sclausen@nd.gov)