

PennDOT's Innovative Initiative Update

KELLY BARBER, P.E.

JANUARY 18, 2022

Agenda

- e-Ticketing
- Certifications
- Augmented Reality
- Digital Delivery

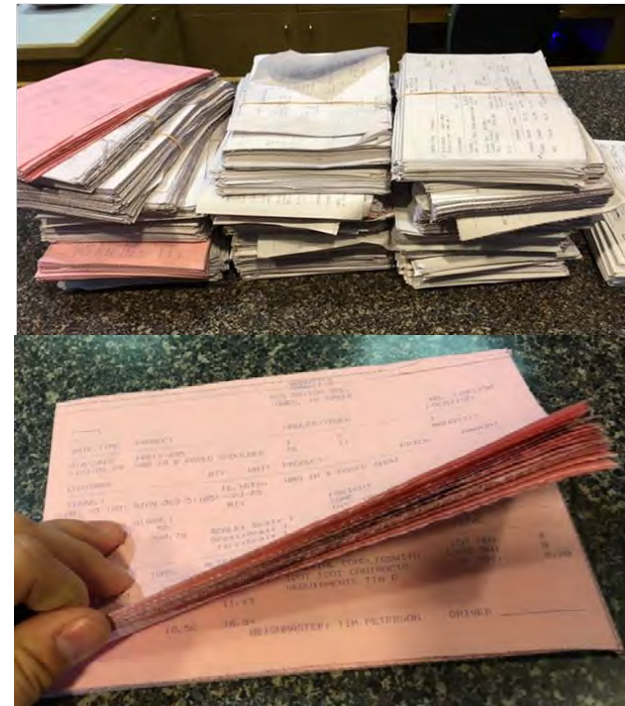


e-Ticketing

e-Ticketing

Why Electronic Tickets?

- Eliminate Paper Tickets.
- No more lost tickets.
- Provide material and tonnage verification.
- No time-consuming ticket sorting.
- Quickly summarize tickets for Contractor payments.
- Reduce worksite hazards for Inspectors frequently dodging trucks.



Construction Specification

Proposed Updates:

III. CONSTRUCTION -

(a) Construction Requirements.

1. Submit details of the proposed electronic ticketing system to the Department for approval at least 30 days before material is delivered to the project. Submission must occur at the preconstruction meeting or through PPCC. Include details for how supplemental paperwork and certifications will be delivered to the Department.
2. Incorporate the electronic ticket system process into the Contractor's applicable QC Plan.
3. If the project site or material supplier cannot support electronic ticketing, develop an alternative means to deliver tickets in real time. This may include, but is not limited to, the submission of paper delivery tickets. If an alternative delivery method is used, E-Tickets shall be sent between the producer and the Department at the end of the shift. Confirm all E-Ticketing requirements with the Department at the preconstruction meeting or at the project's pre-placement meeting.
4. Provide access to the electronic ticketing system to personnel identified by the Representative or in the QC Plan.



Construction Specification

Proposed Updates:

(b) Data Deliverables.

1. Provide to the Representative via iOS apps or web browser in real time so report summaries can be gathered. Provide a field for the Representative to add comments pertaining to the material on each ticket. Record the user's name for all entered and updated information.
2. Provide access to all ticket information in a CSV or Excel file to the Department.
3. Maintain an internet connection with a minimal bandwidth of 10Mbps or the minimum bandwidth recommended by their e-ticketing software vendor, whichever is smaller.



Timeframe

- Pilot during 2021 Construction Season
- Additional Pilot Projects in 2022
- Full implementation – anticipate by 2024 version of Pub. 408
- Maintenance Projects – On Hold



PennDOT Mobile App

- Upcoming Planned Enhancements
 - December - PennDOT application ability to work offline
 - January 2022 – e-Ticketing Web Portal
- Proposed Future Enhancements
 - MC-CID
 - Batchers Mixer Slip
 - Coordination with eCAMMS



Phase 2

- **Batcher Mixer Slip review**

- **704.2 (c) 2nd paragraph proposed language:**

—————> For each truck, transmit the following information to the Representative at the time of each delivery (according to AASHTO M 157):

- Contract number, complete state project number or purchase order number.
- The concrete plant supplier code.
- Method of concrete mixing (i.e., central or truck).
- Class of concrete, JMF number, and trial mix number (i.e., trial #1, 2, etc.).
- Number of cubic yards.
- Time of completion of mixing.
- Unique Truck ID.
- Number of mixing revolutions, if applicable.
- Total amount of water used in each truck (pounds).
- The total weight in pounds of the total cementitious materials.
- The types of additives used in each truck (i.e., water reducer, AEA, retarder, etc.).

—————> Transmit the information on the batcher-mixer slip Form CS-4220 to the Representative. Do not use any concrete until it is approved for use by the Representative.



Certifications

Certifications

- Effective January 12, 2022 For all Material Certifications in ECMS
- Digital CS-4171 forms are required

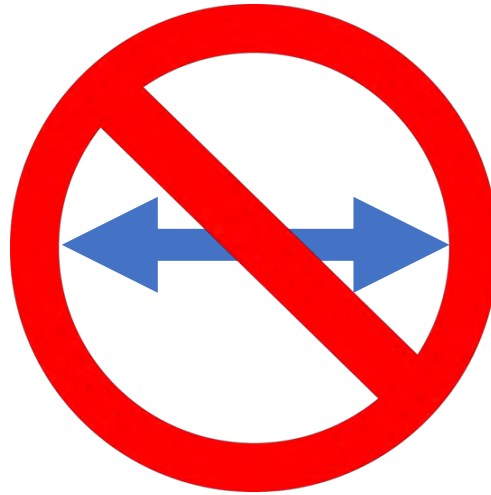
Questions for eSignatures:

eConstruct@pa.gov



Overarching eSignature Concerns

1. Digital Signatures are being stored locally
2. Non-recoverable PIN / passwords
3. Self-signed certificates
4. Not compatible with browser-based pdf viewers
5. Digital signatures created in Adobe must be manually uploaded into other pdf software



eSignature Recommendations

Only Asphalt Andy (Supplier) needs to take action with the 4171 Form(s)

Asphalt Andy



1 Asphalt Andy accesses and completes the self-service PowerForm on the DMV website which kicks off the process.

PennDOT Pam



2 PennDOT Pam receives a copy of the form that will be maintained/stored within the platform.

Contractor Chris



2 Contractor Chris receives a copy of the form. Contractor Chris is still required to upload the form into ECMS



Augmented Reality

Augmented Reality

- District 11 Pilot Project
 - Bridge Inspection
 - Construction
 - Design
 - Materials Testing
- Bureau of Project Delivery
 - Laboratory Testing Section
 - Structural Materials Section



Augmented Reality

Features

- Live stream communications
- Share and annotate documents
- Photo capture and recording

Benefits

- PM remotely access multiple projects in day
- Resolve issues in real-time by seeing what the inspector sees



Digital Delivery

Digital Delivery Directive 2025 ROADMAP



Our Vision

By 2025, construction projects will be bid using 3D technology and no longer be in a traditional construction plan format

Our Mission

To support the digital transformation of project development within PennDOT developing modeling requirements, processes, and workforce development to enable improved asset information transfer by using 3D data-rich information models

Goals

Implement 3D Technology

Advance the Use of Accessible Digital Processes and Tools

Capture Data-Rich Asset Models

Keys to Success

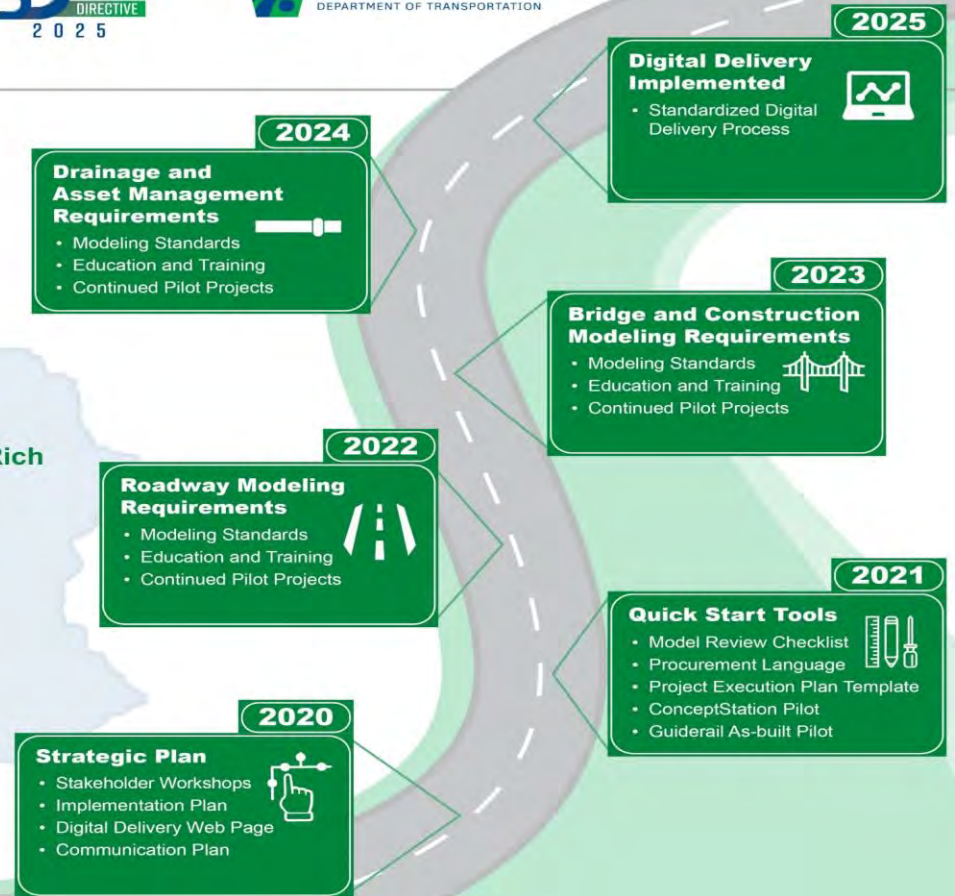
- Manage Pace of Change
- Help People Perceive Progress
- Create Safe Space for Experimentation
- Empower Pilot Project Teams
- Use Construction Partnering

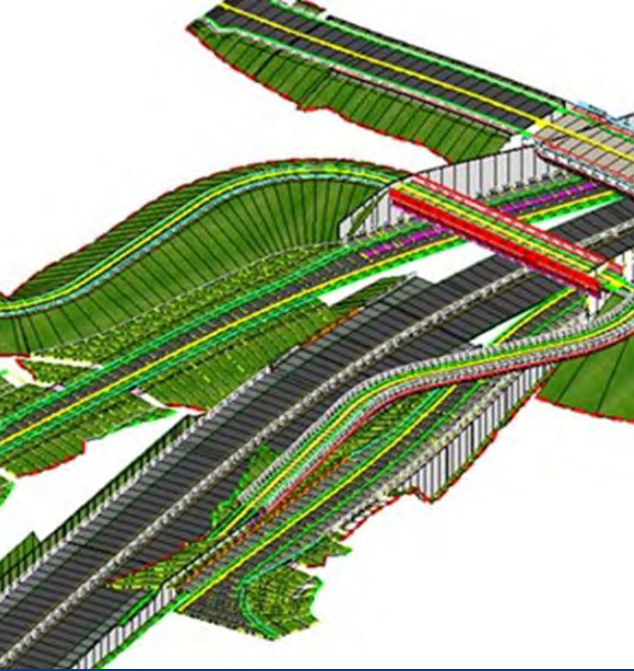
Strategic Approach

- Assess Stakeholder Needs, Desires and Priorities
- Align Technical Solutions with Stakeholder Input
- Advance Technical Solutions Incrementally

Email: RA-PDDIGITALDELIVERY@pa.gov

Webpage: <https://www.penndot.gov/ProjectAndPrograms/3D2025/Pages/default.aspx>





PennDOT Embracing Technology today and into the Future

Questions

Kelly M. Barber, P.E.

Phone: 717.787.5810

keluckenbi@pa.gov

