Connecticut DOT e-Construction Efforts

NESMEA 2017
What is e-Construction

FHWA Definition:
e-Construction is the collection, review, approval, and distribution of construction contract documents in a paperless environment.
Examples

- Paperless Environment
  - electronic contracts
  - electronic transfer of plans and specifications
  - electronic documentation by all stakeholders
  - electronic document submission/routing/approvals (e-signature)
  - digital management of all construction documentation
  - distribution to all project stakeholders through mobile devices
  - Many others
What has the CTDOT done in the past?

• Before we heard of e-Construction we:
  – Started using ProjectWise for Plans and Specs
  – Transitioned to electronic Dailey Work Reports (DWRs)
  – Tested/Piloted/Used other available Technologies
    • GPS
    • Document Control
    • Tablets
CTDOT e-Construction Initiatives

• Electronic Signatures
• Revised Construction Contract form
• Electronic Contractor Submissions
• Mobile Computing Solutions
• Centralized Electronic Document Storage
• Document Control System
• Web Based Construction Management System
• GPS/RTS Construction Inspection
Electronic Signatures

• Internal Electronic Signatures (Directive issued in 2016)
  – All internal forms within the construction division may now be processed electronically. NO PAPER

• External Digital Signatures (DocuSign)
  – Using DocuSign to finalize Construction Order approval process

• Currently working on expansion of the use of electronic and Digital signatures for other documents
Revised Contract Form

- Construction Contract Template Revised
  - Allowed electronic organization
  - Allows fully electronic contract eliminating hundreds of thousands of pages of paper copies
  - Reduces file size and download times
  - Reduces the number of paper copies
  - PDF searchable document
Electronic Contractor Submissions

- In 2015-2016 – Development and pilots
- In 2017 – Procedures issued
- The current state of practice is that almost all correspondence and submissions are electronic
Mobile Computing Solutions
Mobile Computing Solutions

Objectives

- Provide field inspectors with mobile computing equipment
- Allow remote access to Department resources
- Provide a familiar and user-friendly platform
- Provide solutions that allow inspection staff more time and flexibility to focus on inspection duties
Starters

VS

VS

Windows 10
Quickly Became

VS

Apple

Windows 10
Ended Up
Centralized Electronic Document Storage
Before
Solution

ProjectWise
Ensuring comprehensive project delivery

Project Information Management and Collaboration Cloud Services

Improve your project performance by integrating people, data, and processes throughout the project lifecycle. Share project information with secure information mobility. Using PCs, tablets, or mobile devices, your project participants will collaborate effectively to keep the project moving forward. Give your project stakeholders visibility into project performance to mitigate risk. You will win more work and develop repeatable best practices to improve your ROI.
Document Control
Construction Management System
Started here with

SiteManager 3.15

Ending here with

Web-based Construction management system
Web Based Construction Management System

• The Department is piloting web-based AASHTOware software products
  – Project Construction and Materials module
  – Project Civil Rights module

• Hosting on cloud servers will:
  – One vendor to support the software and hosting
  – Mobile device users, plus department business partners, access to the system where it has been unavailable or cumbersome in the past
  – Expansion and contraction of needed resources quickly
GPS/RTS Construction Inspection
GPS/RTS Construction Inspection
GPS/RTS Construction Inspection

• In the process of being implemented on a Department-wide scale
• Piloted on numerous projects throughout the state successfully
• Electronic engineering data is being provided by designers in order to have the most accurate and up to date project designs
Other Efforts
Other Efforts

- Electronic Computations and Recordkeeping
- Electronic Engineering Data (EED) & 3D Modeling
Questions?