CONSTRUCTION DIVISION UPDATE

2019 VTCA Consultant Forum

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VDOT’s eConstruction Program

3D/4D

- 3-Dimensional modeling linked to project schedule (4D)
- Unmanned Aerial Systems (UAS)
- Automated Machine Guidance (AMG)

Tablet Based Inspection

- PlanGrid Pilot
- PlanGrid Implementation
- HeadLight Pilot
- Other Application Evaluations
- E-Ticketing
- Radio Frequency Identification (RFID)

DMS & Submittals

- Document Management System (DMS)
- Submittals

Other Technologies

- Evaluation of Current Systems
- Post-implementation O&M
- Other Research and Development
Tablet Based Inspection

- **PlanGrid**
  - Currently finalizing pilot program
  - Implementing on projects advertised after January 1, 2020
  - VDOT and consultant CEI staff will begin using iPads and PlanGrid during the 2020 construction season

- **HeadLight**
  - 2018 – Pilot Program Initial Phase: Contractors using iPads to complete asphalt materials testing forms electronically
  - 2019 – Pilot Program Phase Two: 15 VDOT staff using iPads to complete daily diaries
  - 2020 – Pilot Program Phase Three: 50 VDOT staff using iPads to complete daily diaries, and materials test reports. Testing integration with PlanGrid and SiteManager
Other Pilot Programs

➢ ProjectWise Deliverables Management
  ➢ Same Document Management System used by L&D
  ➢ Will replace milk crates, filing cabinets, and SharePoint sites
  ➢ Consistent electronic folder structure
  ➢ Contractors will make submittals electronically into the system
  ➢ Currently implemented on design-build projects
  ➢ Pilot program on design-bid-build will begin in 2020

➢ Radio-Frequency Identification (RFID)
  ➢ Currently used in NOVA District to track as-built location of utilities
  ➢ Coordinating with Shea Ridings to determine benefits in other areas of the state
Other Pilot Programs

- **3D & 4D Modeling**
  - 3D visualization improves constructability
  - 4D adds a schedule component to the 3D Model so you can see when each design element is supposed to be constructed over time
  - Fully implemented on HRBT
  - Will only be utilized on complex projects where a model adds value
  - Software is currently available
  - Need to better align staff abilities with software capabilities
Automated Machine Guidance

- **Initiative**
  - Use a 3D model to build a grading plan at the correct elevations

- **Policy Perspective**
  - Contractors are currently allowed to use AMG technology at their own risk
  - Survey stakeout is still required for field measurements
  - Will be coordinating with industry in 2020 to update contract requirements based on technology and skillsets currently available to contractors and CEI staff
e-Ticketing

- **Initiative**
  - Allow electronic copies of aggregate/asphalt tickets to be automatically submitted to VDOT inspector when truck enters project limits
  - Eliminate the need to take paper tickets at time of aggregate/asphalt delivery

- **Policy Perspective**
  - Pilot program for submittal of e-tickets as a PDF in 2018
  - Finalizing new SP to allow for submittal of e-tickets as a PDF beginning in late 2019/early 2020
  - Currently researching applications to receive ticket data in a “smarter” format
Questions ?