Model Based Design & Construction (MBDC):
Use of Digital Data in Construction

Presented by: Michelle A. Page, UDOT’s State Construction Engineer
Use of Digital Data in Construction

Overview

• UDOT & MBDC Goals
• Optimizing Digital Data
• What are we doing differently?
• What have we learned?
• Would we do it again?
“Become the first DOT in the country to go completely paperless”

Carlos’s Top Ten
FHWA Initiative

UDOT’s e-Construction Steps:

1. Fully Electronic
2. Define Digital Processes & Workflows
3. Review Analytics & Define Tactical Measures
4. Become “Smarter” with your data, dashboards, reports, algorithms, etc.
5. Revisit Content & What Really Matters
MBDC Goals

- Optimal Design
- Information Transfer to Construction
- Better Data to Improve Decision Making
- Improve Efficiency
- Simplify Design & Construction
Optimizing Digital Data
Preconstruction

What are we doing differently?

• Validating existing information
• Digital Reviews at PS&E
• Mandatory Handoff Meeting
  o Designer to Contractor
  o Preconstruction Surveyor to Contractor’s Surveyor
What are we doing differently?

• Supplying more information than ever before
• Pre-Releasing information for Contractors
  ○ Google Sites for RFI’s from Bidders
  ○ Testing the release of PS&E (minus the E) package for industry review
Construction

What are we doing differently?

• Hardware – iPads & Laptops for all field personnel
• Contractor provided rovers, including training and maintenance
• Software - Communicating RFI’s, design revisions, potential change orders, inspection checklists, non-conformance reporting, etc.
  o MS Sharepoint based – Aurigo Masterworks Software
  o Lessons Learned (Document Management Software)
Construction

What are we doing differently?

• GIS Collector App for Field Personnel
  o Converting CADD file to GIS format and integrating construction software information
Next Steps in Technology

Real Time Traffic Data
• Travel Times for the Traveling Public
• Increased Work Windows for the Contractor
Next Steps in Technology

Photo Mapping & Technology

- Pavia – Headlight Pilot Project
- ArcGIS & Mapillary Testing
Any Questions?
Thank You!!

- Michelle A. Page, UDOT State Construction Engineer, michellepage@Utah.gov