Intelligent Design and Construction (IDC) at UDOT

MOVING TOWARDS INTELLIGENT DESIGN, CONSTRUCTION AND BEYOND

AUGUST 16, 2017
What is all the buzz about?
Reasons to Use IDC

- Savings in Design and contractor effort
- Opportunities to lower bids with more accurate models
- Create models with asset management in mind
Roadmap

Utah’s road to IDC

Pilot projects with a purpose
- SR-20
- I-70

Next Steps
Goals for IDC at UDOT

Advertise 3D models as the contract document on all projects

Use Civil Integrated Management on projects

Make the system easy to use

Electronic 3D Intelligent As-Built Data
Pilot Projects with a Purpose
SR-20 Climbing Lane Project

3.2 million
Widening with minimal utilities
Low ADT
CMGC delivery

Goals
Bentley to Trimble
Field viewer for models
Determine How to verify grade
Findings

The survey/model needs to be verified by contractor- pre activity
The rover was an adequate way to check grade
The Infrastructure Consensus Model (ICM) became a good way to translate between Bentley and Trimble
Our contractor (WW Clyde) was fluent in both Trimble and Bentley, ++
Navigator promising for 3D viewer, use for plan review in future?
Provide ICM model to bidders
Ownership of process by younger inspectors
Additional Questions

How is model verified and QC’d in a DBB?

Model needs to be more robust in a DBB project.

How do we take what was learned in CMGC to DBB?

How can we make model development faster?
I-70 Project

10 million
Rubbilization and Asphalt Overlay
DBB delivery
Early Release of ICM Model, Survey
Mandatory pre-bid
Model as the legal document
GIS solution for as-builts
I-70 Findings to Date

Bidding procedure worked well

Need better process for model acceptance
Other Projects

I-80 Blackrock Brim Project
SR-193
I-80 Climbing Lanes
SR-10
SR-68
106s-I-15
I-15 climbing lanes
Other Efforts

Contractor Summits, Interviews
GIS “smart model” solutions
3D design standards
Future

New learning leads to more questions
Right sizing CIM and IDC solution for project
Communications plan