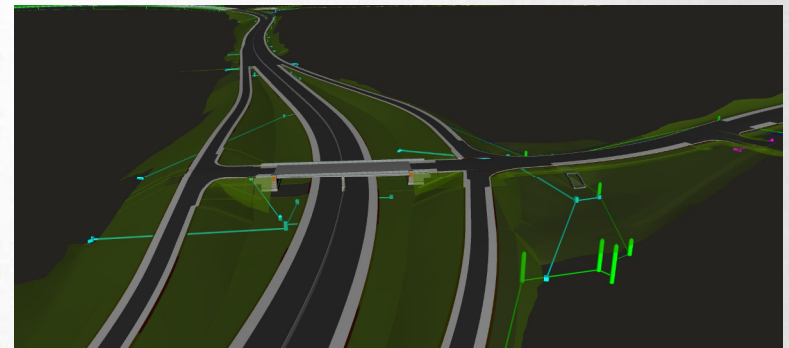# Model Based Design & Construction (MBDC):
Use of Digital Data in Construction

Presented by: Michelle A. Page, UDOT's State Construction Engineer

LTDOT
Keeping Utah Moving

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

Paperless → e-Construction
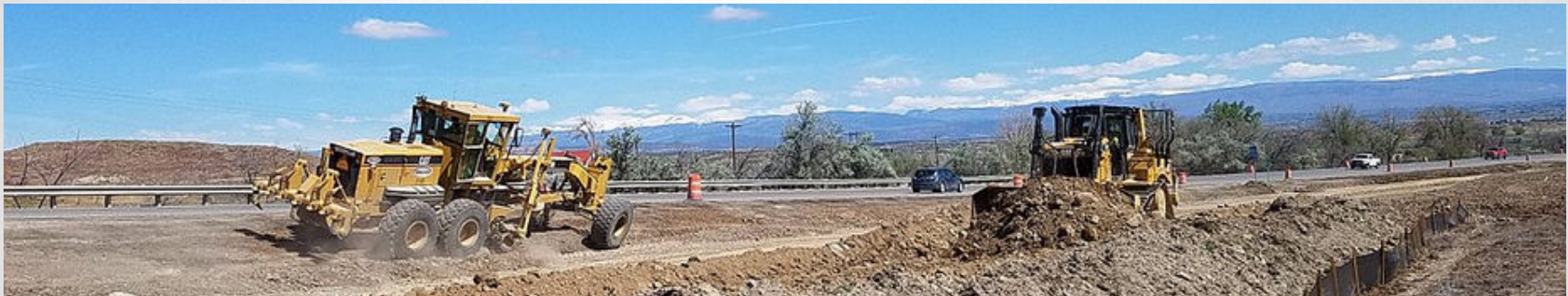
FHWA Initiative

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

Closed Circuit or Level Loop

PT	(+) BS	HI	(-) FS	ELEV	TOP/BOT STADIA	DIST /Angle
				AUTO LEVEL READINGS		
BM	7.13	107.13	X	100.00		
TP-1			4.26	102.87		

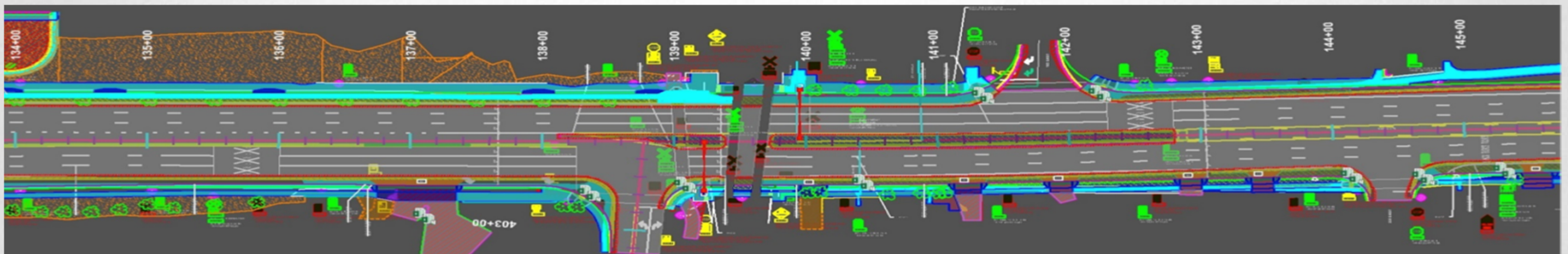# Advertising & Bidding

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.
  - MS Sharepoint based – Aurigo Masterworks Software
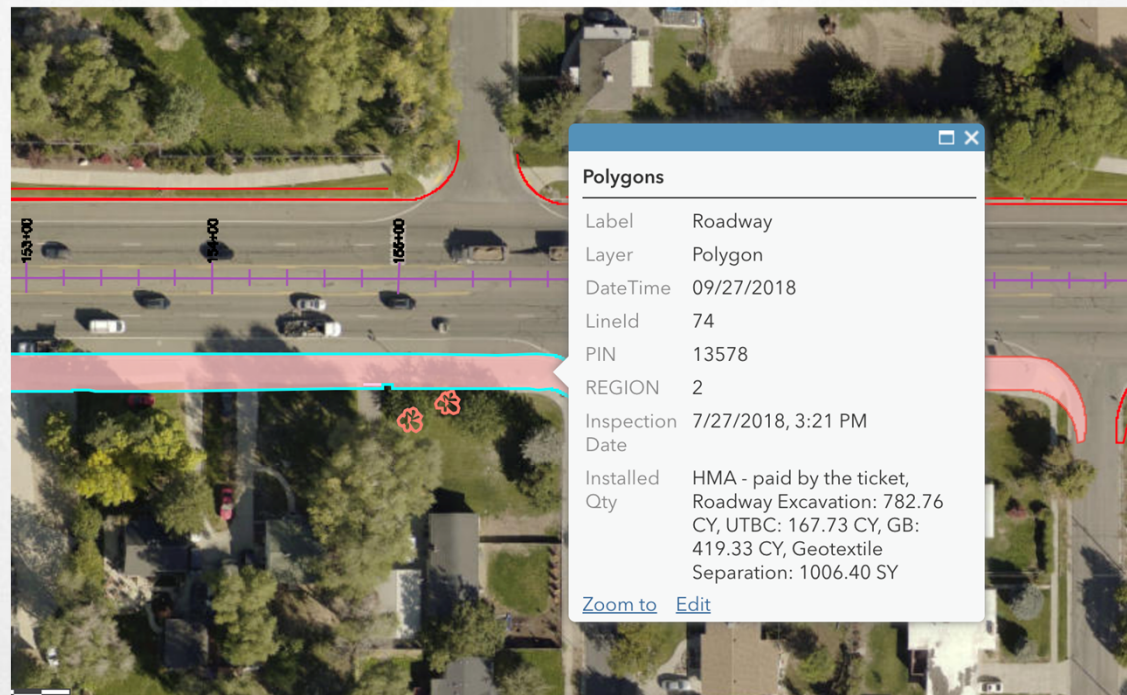 - Lessons Learned (Document Management Software)

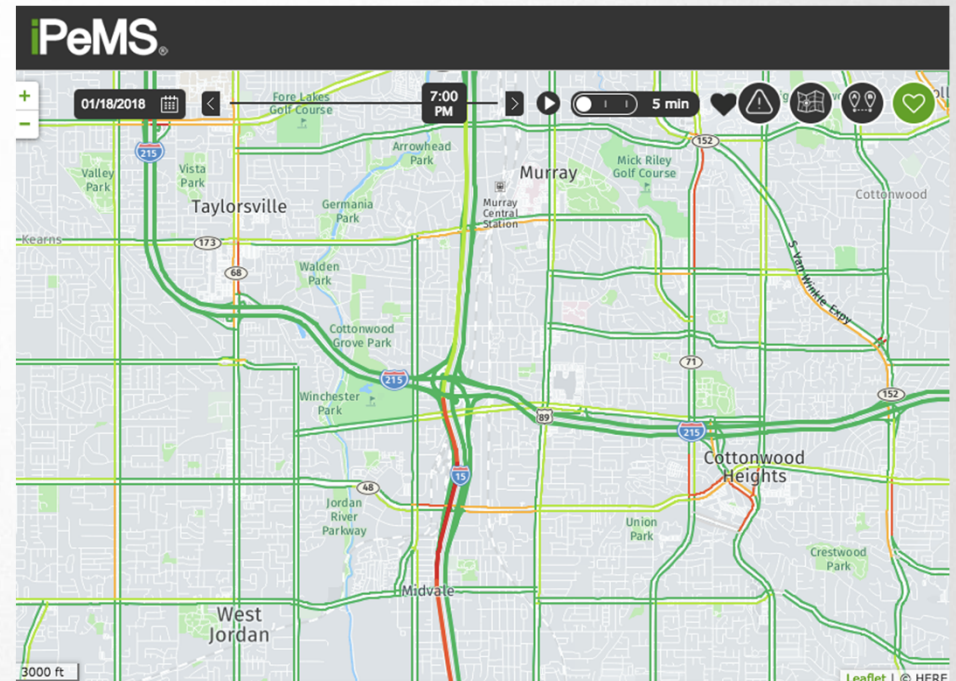# Construction

What are we doing differently?

- GIS Collector App for Field Personnel
  - 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
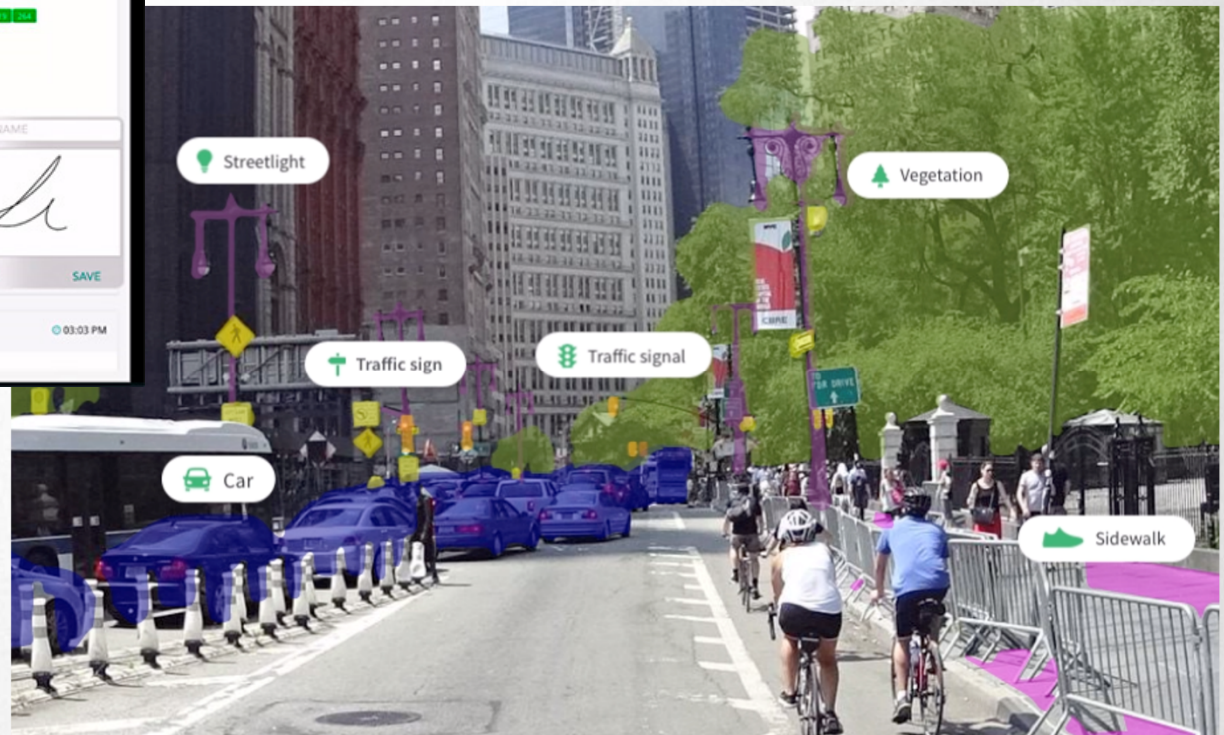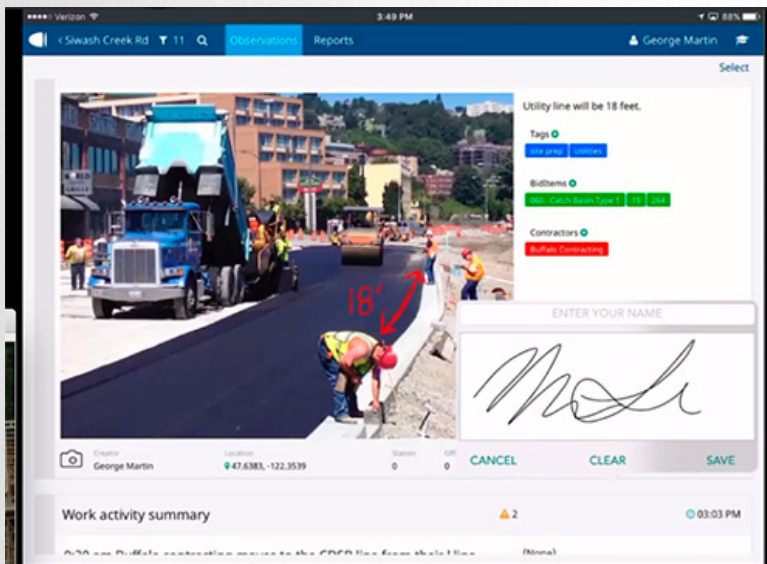- Increased Work Windows for the Contractor

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