MISSOURI 3D ENGINEERED MODELS FOR STRINGLESS PAVING WORKSHOP

Why 3D? Why Now?

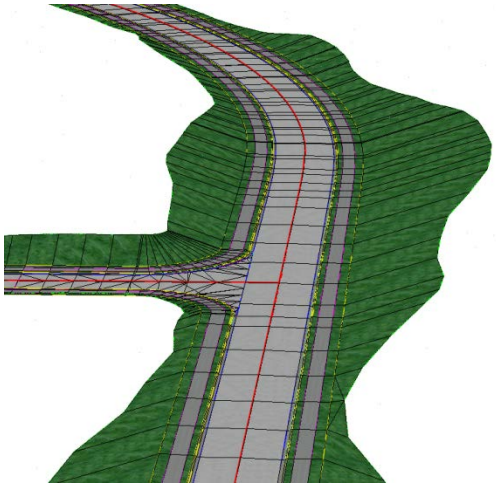
KEVIN W. WARD, P.E.
MISSOURI DIVISION ADMINISTRATOR

U.S. Department of Transportation
Federal Highway Administration

EVERY DAY COUNTS (EDC)

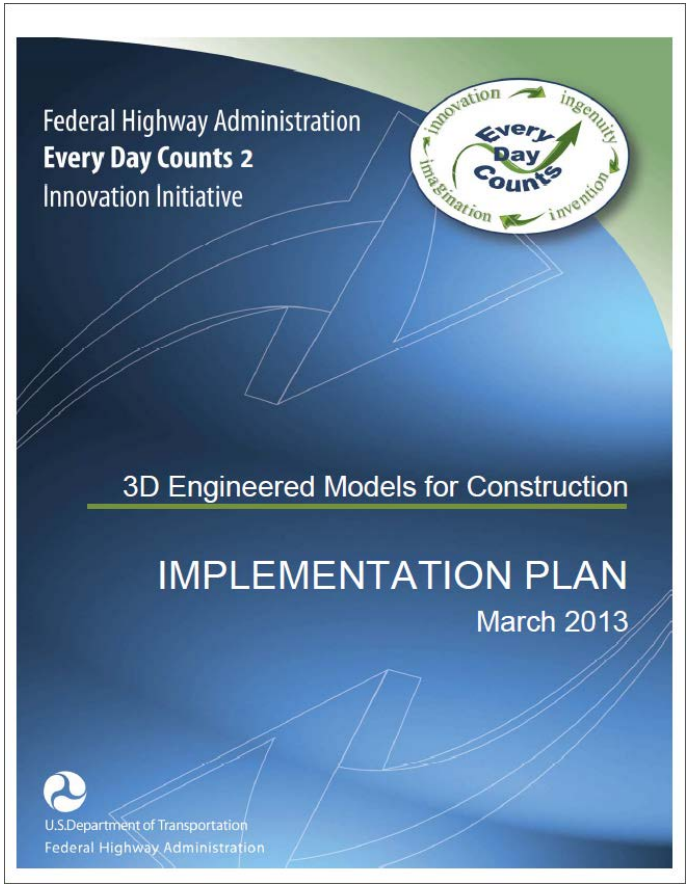
Launched by FHWA Administrator - October 2010

- Designed to:
  - Identify and deploy innovation aimed at shortening project delivery
  - Enhance the safety and performance of our highways and bridges
  - Improve environmental sustainability



Source: Bentley Systems

EDC2 - 3D IMPLEMENTATION BIG PICTURE



- **FHWA VISION:**

Mainstream the use of the 3D model so construction projects are delivered faster, more efficiently, accurately, and safely.

- **MISSION STATEMENT:**

Promote technology transfer and project implementation of the 3D model for benefit to users such as more accurate earthwork computations, clash detection, string-less paving and milling, automated machine guidance, and automated machine control.

ACTIVITIES SUPPORTED

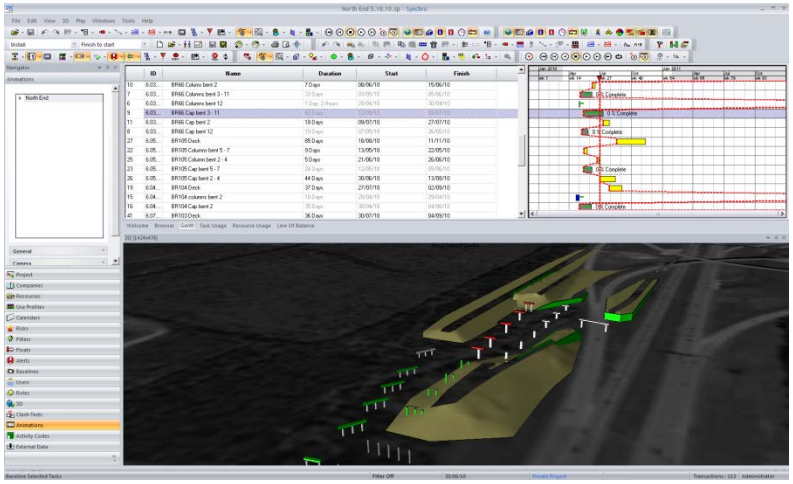
… by 3D models

- Multi-disciplinary project coordination;
- Clash detection analysis of design features;
- Earthwork quantity computations; and,
- Automated machine guidance (AMG) of heavy construction equipment.

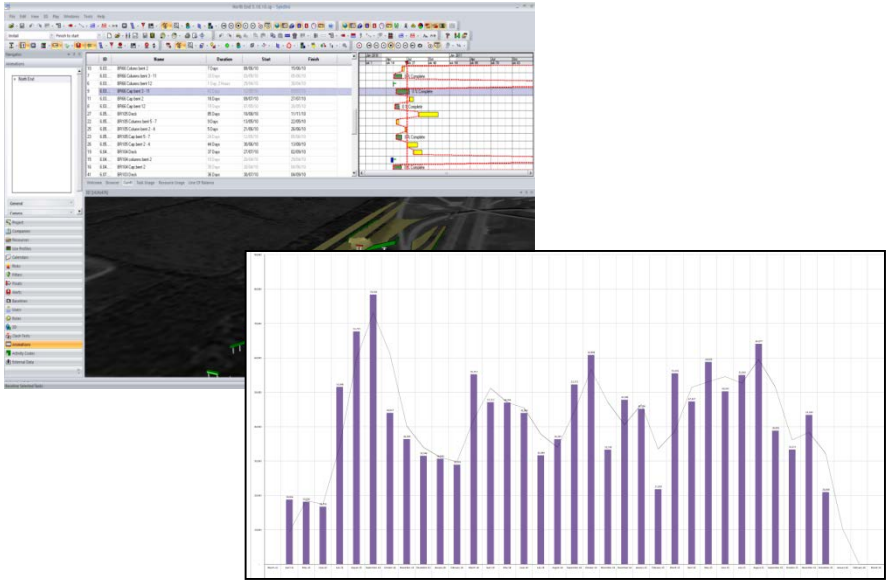
Source: ACPA

A BRIGHT FUTURE FOR DIGITAL MODELING …

4D Modeling - Scheduling



5D Modeling – Cost Estimating

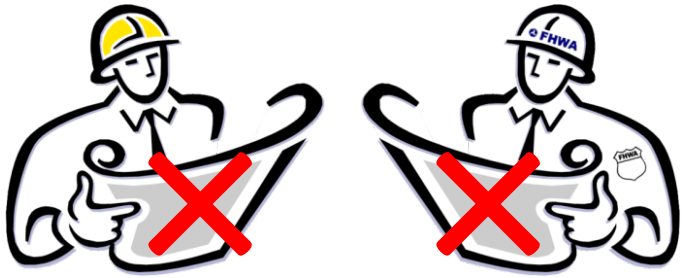


… and beyond

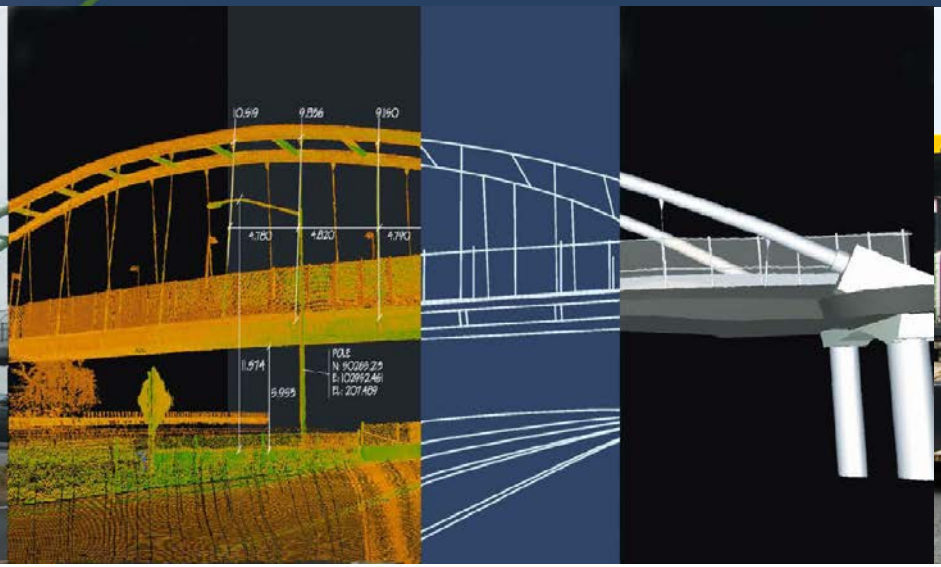
E-CONSTRUCTION

… Electronic Project Document Management

- EDC-3 selected activity
  - Improves project communication & management and storage of documents
  - Accelerates decision making & approval processes for better administration of construction projects
  - Creates secure storage
  - Eliminates hard copy paperwork to save time and costs



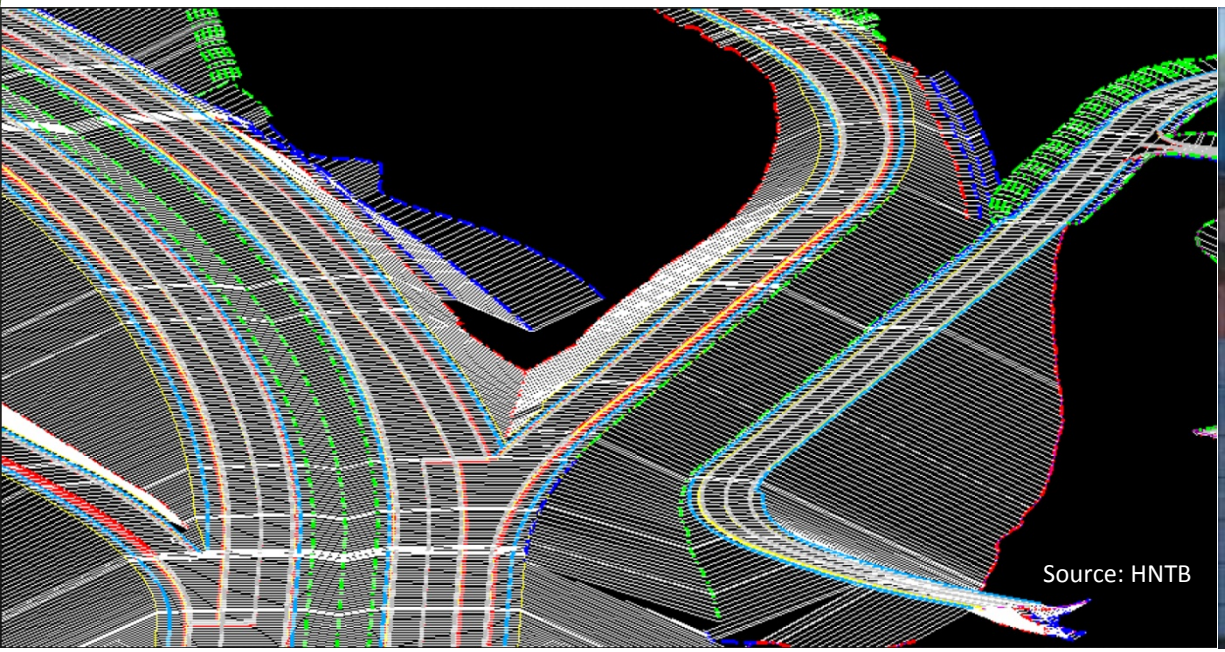

Source: WisDOT




Source: ISU


Source: NCDOT

THE FUTURE BEGINS NOW!


Source: HNTB


Source: Profsurv


innovation
ingenuity
Every
Day
Counts
imagination
invention

Thank You!

SUPPORT & AVAILABLE TOOLS

- National Website and Technical Support Service Center – Available NOW!
  - http://www.fhwa.dot.gov/3D *"Search fhwa 3D"*
  - Specs, Standards, Details, Case Studies, etc.
  - Technical Assistance
  - Inquiries from State DOTs, LPAs, Contractors & Engineers
- Webinars – Fall 2014, 5 of 8 completed, 3 scheduled
- Training Workshop – Fall 2014 thru Spring 2015
- Demonstration Workshops
  - Design to Asphalt Pave – Oregon, July 2014
  - Design to Concrete Slip-form Pave – Missouri, August 2014
  - Design to Construction of Steel Structures – Pennsylvania, Oct 2014
- Web-based Training
  - 3D Engineered Models for Construction Series – Sept 2014
  - NYState DOT – Steel Bridge Fabrication 3D Modeling – Spring 2015
- Implementation Manuals – Spring 2015
  - Iowa DOT

Oregon Department of Transportation

MoDOT

PENNDOT

Iowa Department of Transportation

New York State Department of Transportation