



TEXAS DEPARTMENT OF TRANSPORTATION



3D DESIGN AND PROJECTWISE

Commission Presentation

September 18, 2014

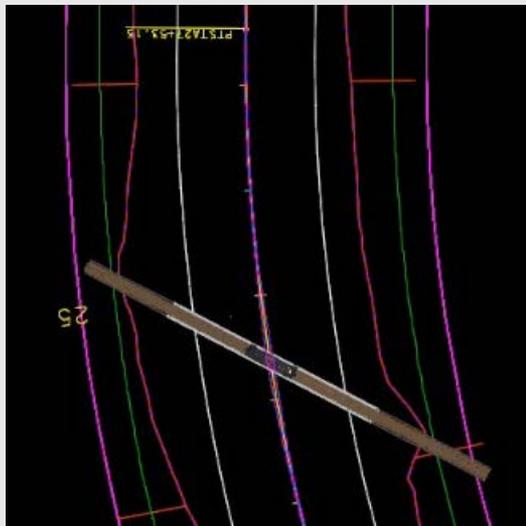
A look back at how things have traditionally been done...

- Over the years, technology has progressed dramatically and given surveyors and engineers the ability to process, design and analyze information
- Even so, our workflows and business practices and deliverables have continued to target the same thing: **2D virtual design to create 2D paper plans**
- TxDOT has been updating technology (e.g., ERP); this upgrade will directly impact our engineering functions in a positive way

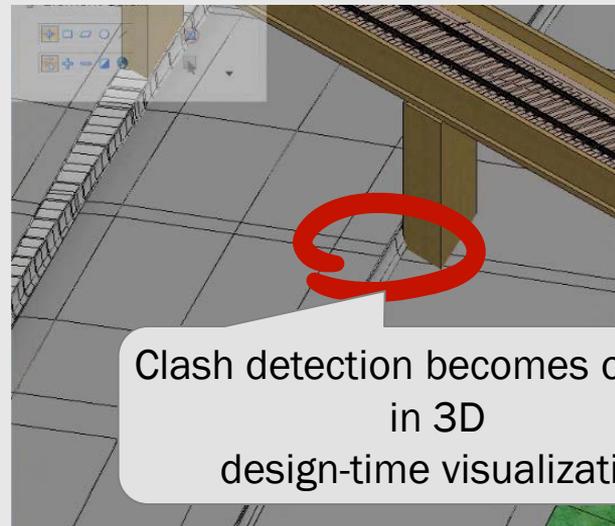


3D design: using digital visualization as a tool to improve design process

2D design of overpass



3D design of same overpass



3D visualization requires less interpretation and can improve decision making

Other advantages of 3D modeling extend beyond the design stage

Operations and maintenance

Provides better management of equipment inventory and systems such as Pavement and Traffic Management



Machine control

AMG (Automated machine guidance) usage growing, provides significant benefits



Public involvement visualization

Converts complex technical information into easily understood images or animations



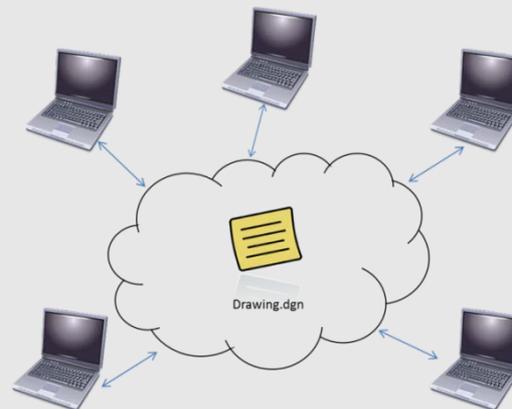
[Insert video demonstration]

To support 3D, we will also implement ProjectWise over the next 2 years

Current Content Management



Content Management with ProjectWise

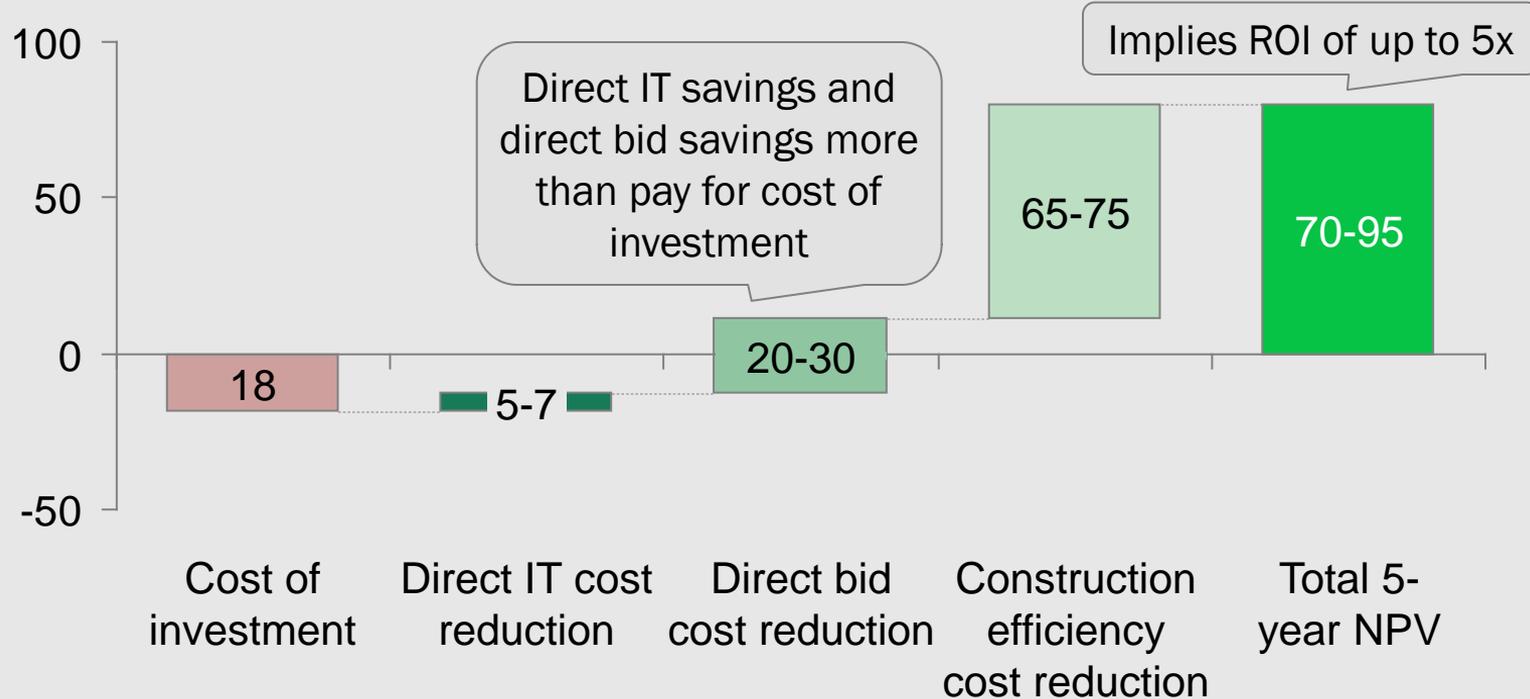


Centralization of content will drive standardization,
and use of templates will reduce repetitive work

Benefits will deliver ROI of up to 5x on \$18M cost of investment

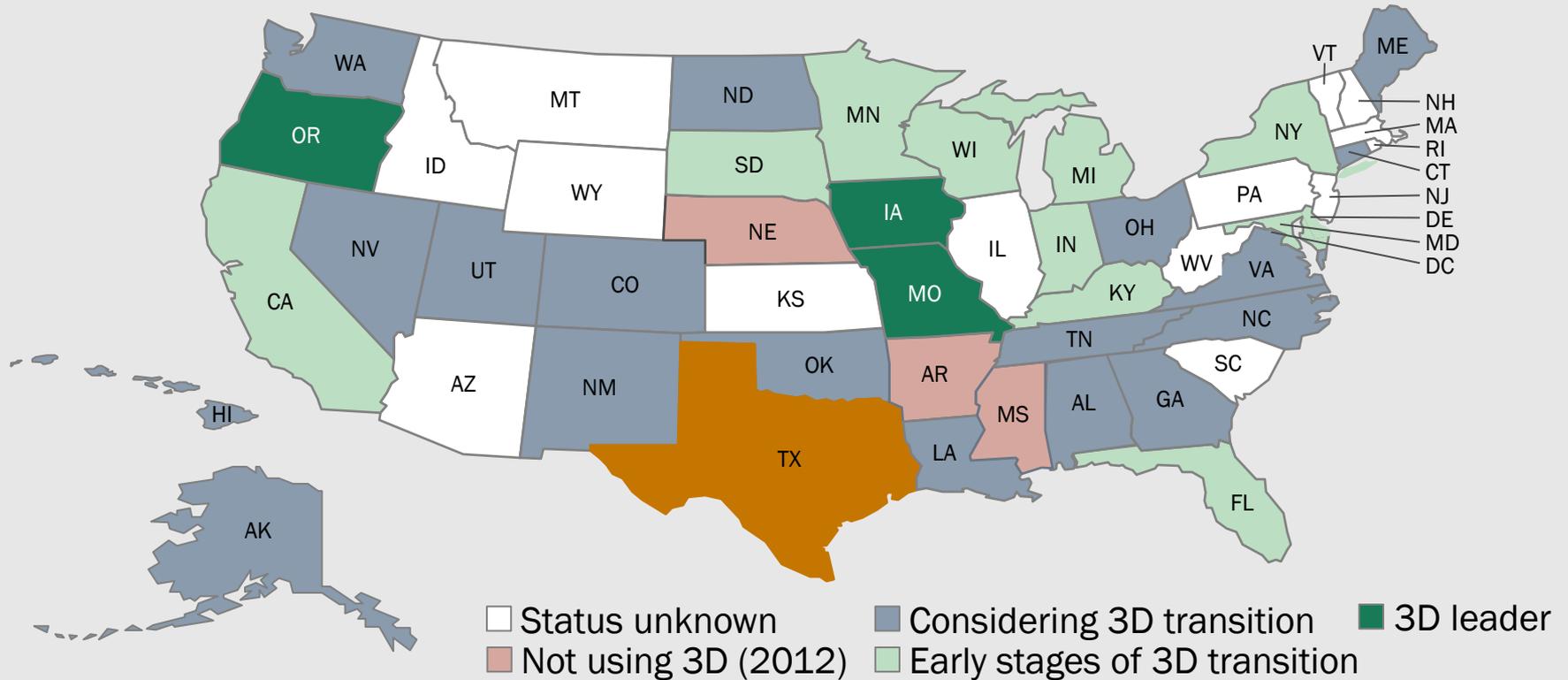
Preliminary

Preliminary NPV of costs & benefits for ESS & ProjectWise over 5 years (\$M)



Moreover, TxDOT has the opportunity to be a national leader in 3D design

Status of 3D modeling by state DOT



Source: Interviews with DOTs, CalTrans survey, Agtek report on 3D adoption, FHWA EDC2 progress reports

What to expect next: rollout and training to begin this winter

We are in process of finalizing software solution & implementation plan

Team is developing Gold Standard version of 3D design software

- Will be TxDOT-specific

We are also finalizing a more detailed implementation plan

- Rollout planned by region

Regional training and software rollout to begin this winter

Software upgrades will begin in the winter and run through 2016

- Will roll out to one region at a time, starting with Austin
- Training program (combination of instructor-led and self-service courses) will run in conjunction