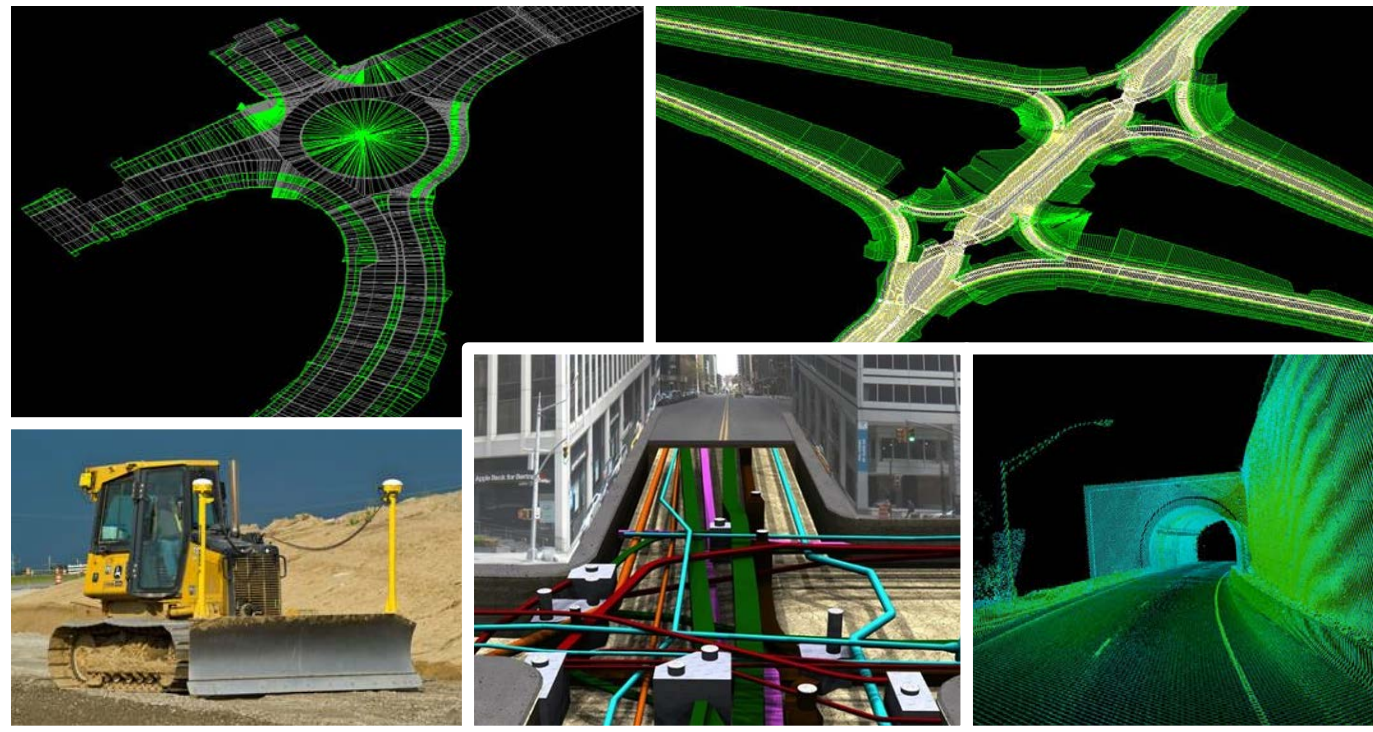


Support & Available Tools



National Website and TSSC

- New web page www.fhwa.dot.gov/3d (search “fhwa 3D”)
 - Specs, Standards, Details, Tech Briefs, Case Studies, etc.
- Technical Support Service Center (TSSC)
 - Accessible via web page
 - Provides technical assistance & personal responses to specific questions
 - Staffed by national subject matter experts
 - Provides initial response within 24 hours of inquiry



Web-based Training

- Four, 90-minute online modules
- Available 24/7, at users' convenience
- Users can start, stop, and then pick up where they left off
- The focus is on critical topics that support new users' implementation of 3D modeling
- Assists *owners, designers, and contractors* in understanding the benefits of, and how to implement 3D modeling technology
- *AVAILABLE September 2014!*



Four WBT modules

- Module 1: Introduction to 3D Engineered Models for Highway Transportation
- Module 2: Surveying and 3D Engineered Models
- Module 3: 3D Engineered Models in Highway Design
- Module 4: Applications of 3D Engineered Models in Highway Construction and Quality Assurance



Module 1: Introduction to 3D

- Provides a broad overview of Modules 2, 3, and 4
- Explains benefits of 3D engineered models over 2D plans
- Discusses challenges
- Three lessons:
 - Lesson 1: What are 3D Engineered Models?
 - Lesson 2: Applications and Benefits of 3D Engineered Models in Highway Transportation
 - Lesson 3: 3D Engineered Model-based Implementation Opportunities and Challenges



Module 2: Surveying

- Overview of modern survey equipment
- Considerations for different survey technologies
- Overview of subsurface utility engineering (SUE)
- Discussion of data obtained from modern survey equipment for use in design
- Four lessons:
 - Lesson 1: Surveying Equipment and Techniques
 - Lesson 2: Integrated Surveying and 3D Data Collection
 - Lesson 3: Subsurface Utility Engineering (SUE)
 - Lesson 4: Building the 3D Engineered Model



Module 3: Highway Design

- Use of 3D engineered models in design
- Enhances communication
- Enhances engineering analysis
- Better communicates design intent to contractors
- Four lessons:
 - Lesson 1: Applications of 3D Engineered Models in Design (Design Analysis)
 - Lesson 2: Office Workflow and Process Elements
 - Lesson 3: Design and Coordination Process
 - Lesson 4: Design Quality Assurance with 3D Modeling



Module 4: Highway Construction, QA

- How construction surveying is changing
- 4D and 5D modeling
- Types of automated machine guidance (AMG)
- How quality assurance is changing
- Four lessons:
 - Lesson 1: 3D Applications in Highway Construction
 - Lesson 2: Constructability Review, 4D Schedule and 5D Costs
 - Lesson 3: Automated Machine Guidance (AMG) and Control Systems
 - Lesson 4: Quality Assurance/Control in Construction with AMG



Features of WBT

User
interaction

Videos

Resource
links

Knowledge
checks

Examples

PDF
attachments

Virtual
simulations

Graphics

It's FREE!



All modules



The image shows a certificate of training form template. At the top left is the U.S. Department of Transportation Federal Highway Administration logo. To its right is the text "U.S. Department of Transportation Federal Highway Administration". Below this is "Presents to:" followed by a large placeholder "{Insert Name}" underlined. Below the name is the title "Certificate of Training" and the text "For completion of" followed by the course name "Module 1: Introduction to 3D Engineered Models for Highway Transportation (3D Engineered Models for Construction Series)". At the bottom left are fields for "Location: Web-based Training" and "Date: {enter date here}". At the bottom right are fields for "Hours of Instruction: 2.0 hours" and "Add signature here". Below the signature line is the name "Christopher J. Schneider" and the title "Office of Asset Management/FHWA".

U.S. Department of Transportation
Federal Highway Administration

Presents to:

{Insert Name}

Certificate of Training

For completion of

*Module 1: Introduction to 3D Engineered Models for Highway Transportation
(3D Engineered Models for Construction Series)*

Location: Web-based Training
Date: {enter date here}

Hours of Instruction: 2.0 hours

Add signature here

Christopher J. Schneider
Office of Asset Management/FHWA

User PDH
certificates



3D Workshops

- Six workshops completed: (AR, ME, UT, AL, WV, PA)
- Six in planning:

Florida DOT, Orlando	September 3-4, 2014
Delaware DOT, Dover	October 9, 2014
Idaho Transportation Department, Boise	November 5-6, 2014
Nevada DOT, TBD	January 2015
South Carolina DOT, TBD	February 2015
Oklahoma DOT, TBD	Spring 2015

David Unkefer: 404-562-3669, or David.Unkefer@dot.gov



3D Webinar Series

✓ Overview of 3D Engineered Models for Construction	November 19, 2013
✓ Creating 3D Engineered Models	January 8, 2014
✓ Applications of 3D Models in the Construction Office	February 19, 2014
✓ Applications of 3D Models on the Construction Site	April 2, 2014
✓ Managing and Sharing 3D Models for Construction	May 7, 2014
Overcoming Impediments to Using 3D Engineered Models for Construction	September 10, 2014
Steps to Requiring 3D Engineered Models for Construction	October 15, 2014
The Future: Adding Time, Cost and Other Information to 3D Models	November 19, 2014



3D Demonstration Workshops

- Design to Asphalt Pave – July 9-10, Corvallis, Oregon
 - 3D design model demonstration of actual construction site
 - In-field demonstrations of AMG fitted equipment performing excavation, grading, agg base, asphalt paving and PCC slip-forming
- Design to PCC Pave – August 13-14, St. Louis, Missouri
 - Workshop & field demo of stringless PCC paving technology
- Design to Constr of Steel Structures – Oct 21-22, Lancaster, PA
 - Benefits of 3D models in steel bridge fabrication and construction
 - Site visit of plant using 3D models in fabrication and construction of steel structures



Implementation Manual

- Owner, consultant and contractor processes
- Address need for documented 3D procedures, process steps, standards and definitions
- Overview presentation
- Delivery Winter 2015



Steel Bridge Fabrication Training

- Focus on fabrication & construction of steel bridges
- One 90-minute web-based training module
- Tech briefs
- Delivery Spring 2015



New York State
Department of Transportation

