



BIM for Bridges and Structures

T- 19 Work Plan

Scot Becker



Presentation Outline

- Consistent Terminology – Building Information Modelling (BIM) for Bridges and Structures
- T-19 Road Map
- Examples in our Industry
- Closing Support

2015 - Saratoga

- We introduced SCOBS to BIM terminology
- We provided examples of Building Information Modelling uses in our community
- We prepared a 20-07 to execute a resource to determine our path forward

What's in it for SCOBS?

Bridging the Information Gaps



- Marketplace for BrIM in the Bridge Process



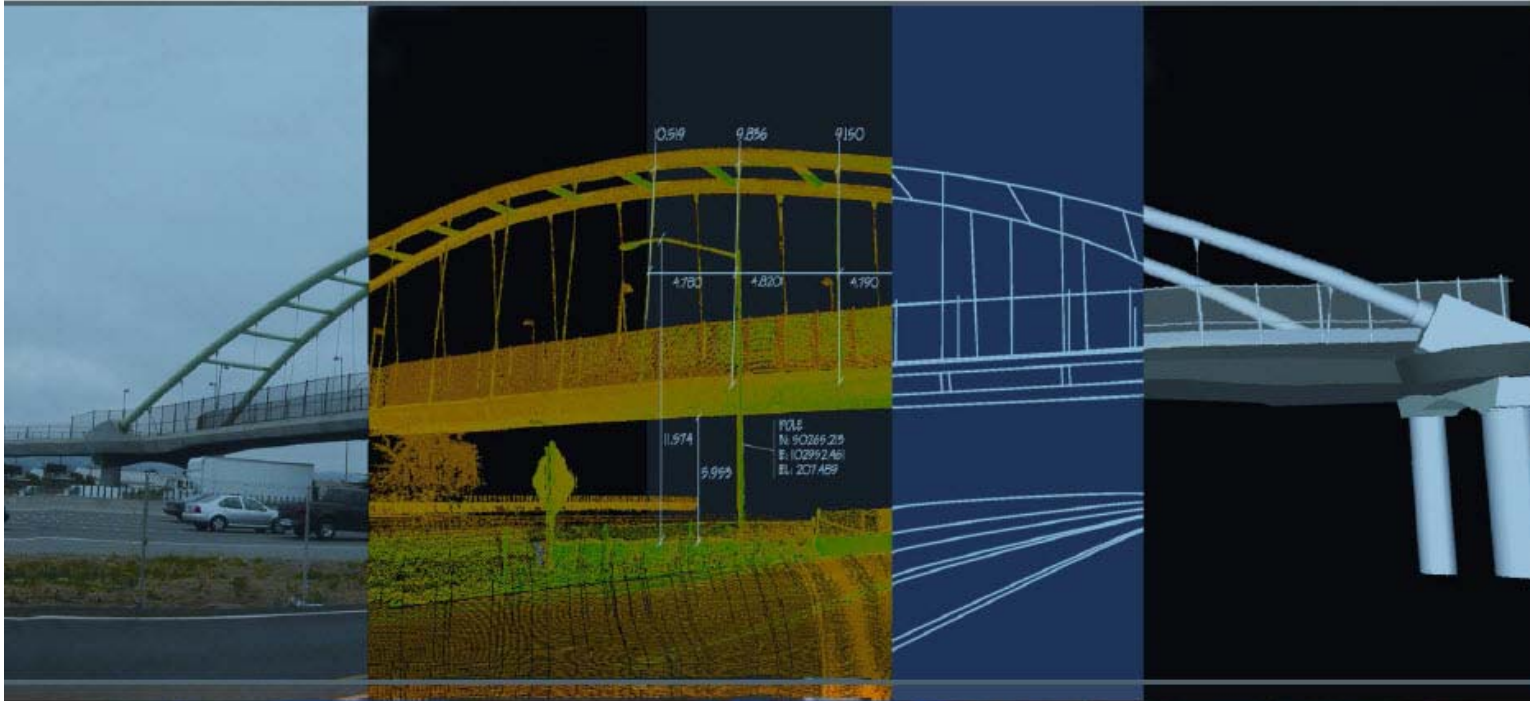
- ***Informed Planning***
- ***Coordinated Documents***
- ***Better Designs***

- ***Better Built Assets***
- ***Faster Completion***
- ***Reduced Cost of Construction***
- ***Commissioning***

- ***Optimal Use of Asset***
- ***Efficient Operation***
- ***Increased ROI***



CIM 3D Modeling: Zoo Interchange Design-grade/Post-construction Surveys



**Georeferenced
Hi-res Digital
Images**

**3D
XYZ Return
LAS Point
Clouds**

**2D-3D Feature
Lines
3D DTMs-TINs
X-Sections**

**3D
CIM-BIM
DSMs**

2017 – Midyear Meeting

- At our Mid Year Meeting we developed our Work Plan for this Initiative:
 - We are calling the T-19 initiative “**BIM for Bridges and Structures**”
 - We used the results of our 20-07 to determine our Work Plan.

STANDARDIZED FORMAT FOR BRIDGE AND STRUCTURE
INFORMATION MODELS
FINAL REPORT

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AASHTO SCOBS T-19

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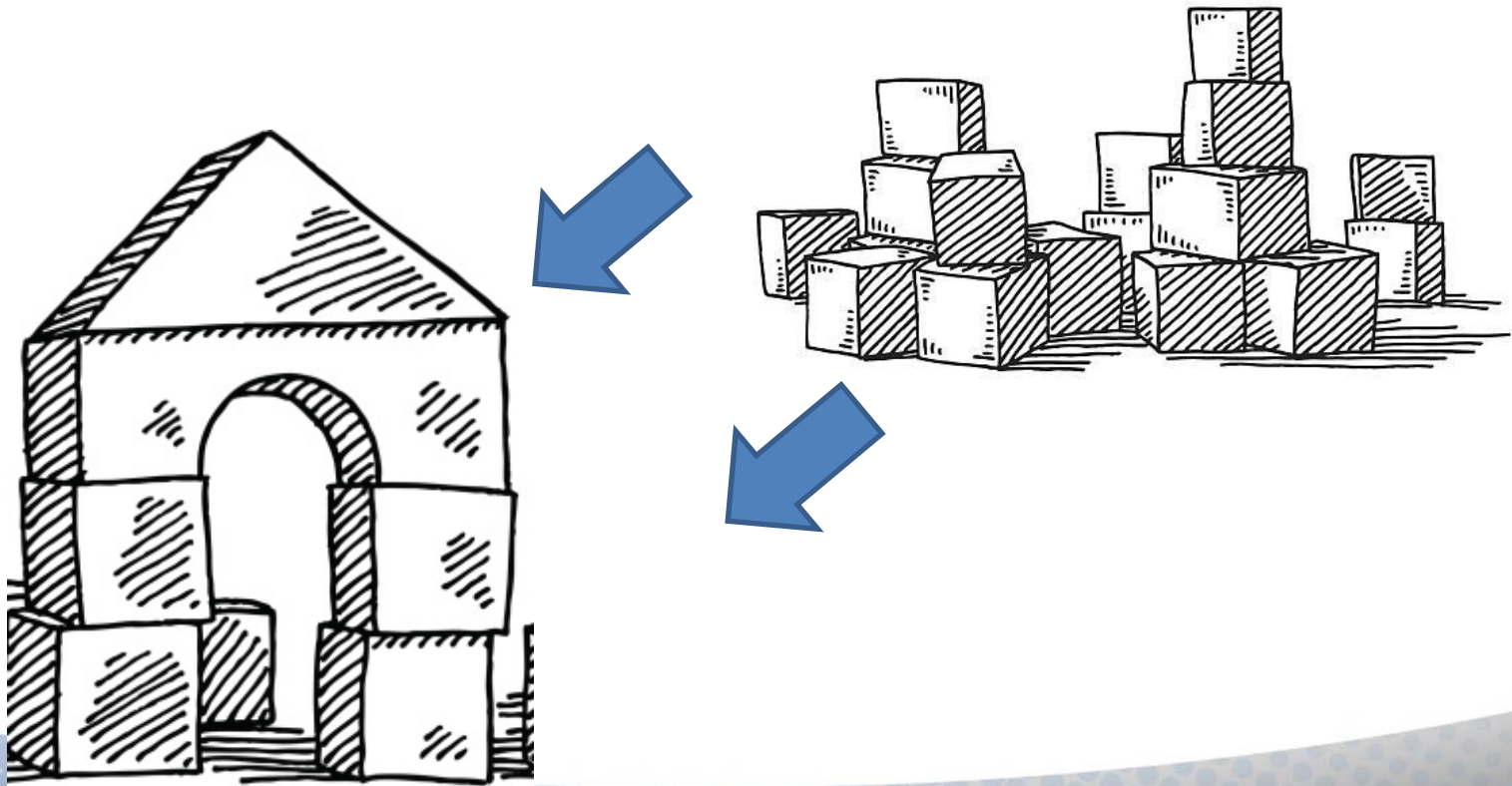
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SPECIAL NOTE: This report **IS NOT** an official publication of the National Cooperative Highway
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Academies.

2017 - Spokane

- We are asking for your support and participation
- We are moving forward with a work plan to provide a national standard
- We will be Soliciting a Pooled Fund to resource this effort

What is it? - Conceptually



Highlights of the T-19 Work Plan

- Establish standards, guidelines, or manuals for bridge project stakeholders to facilitate the wide use of IFC as an exchange standard in BIM for Bridges and Structures in bridge projects.
- Develop the national standard MVD, data definitions, and data requirements for the model life cycle for all data exchanges for transportation bridges and structures.

Highlights of the T-19 Work Plan

- Collaborate with stakeholders to provide timely update of IFC data dictionary for common bridge elements.
- Collaborate with buildingSMART and software vendors to design and offer suitable training covering BIM for Bridges and Structures model development, management, and usage.

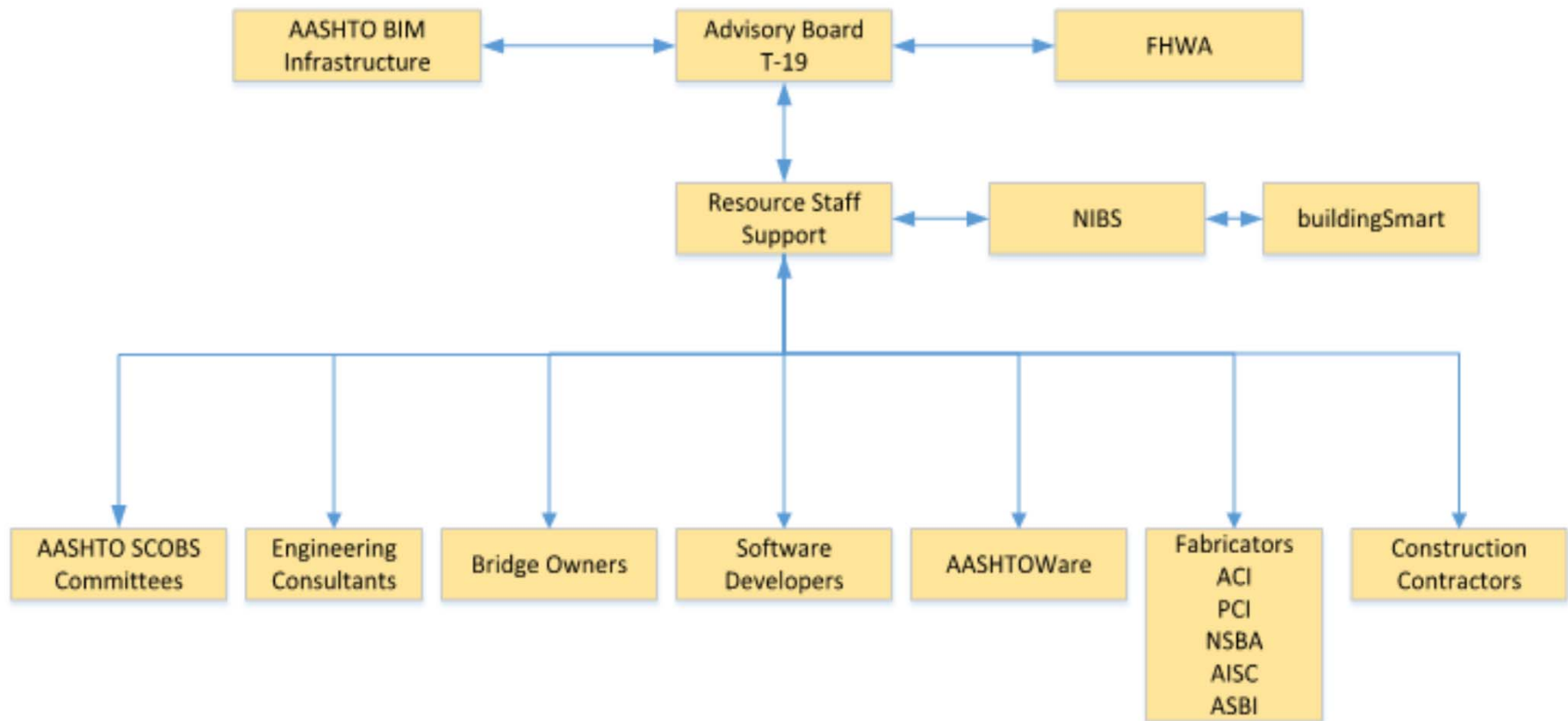
Highlights of the T-19 Work Plan

- Conduct return on investment (ROI) analysis to quantify the benefits of using a common modeling format, BIM for Bridges and Structures.
- Develop a template of BIM for Bridges and Structures-specific contractual provisions for managing, reducing, or eliminating the risks associated with BIM for Bridges and Structures

Highlights of the Work T-19 Plan

- Recommendations on changing existing work flows to leverage model exchanges for project delivery and asset management for transportation bridges and structures owners.
- Provide technical support, organize training workshops, and facilitate pilot/demonstration projects for bridge owners to encourage and accelerate the adoption of BIM for Bridges and Structures.

Task 2 – Stewardship Model 5: Hybrid Stewardship Model- REVISED (2/28/2017) BIM for bridges and structure



T-19 Monday Afternoon

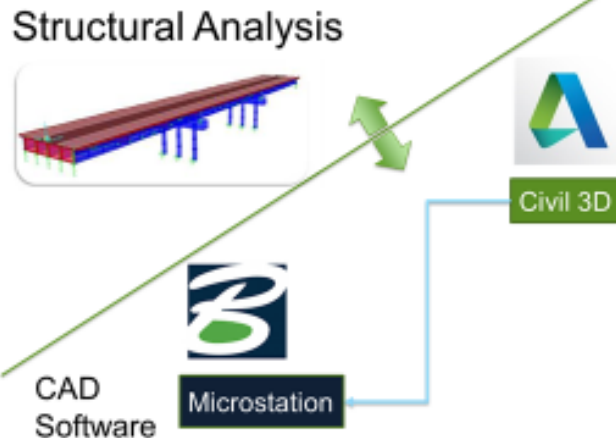


UDOT's BIM for Bridges and Structures Initiative

Carmen Swanwick, SE
Utah Department of Transportation
Deputy Project Development Director
Chief Structural Engineer



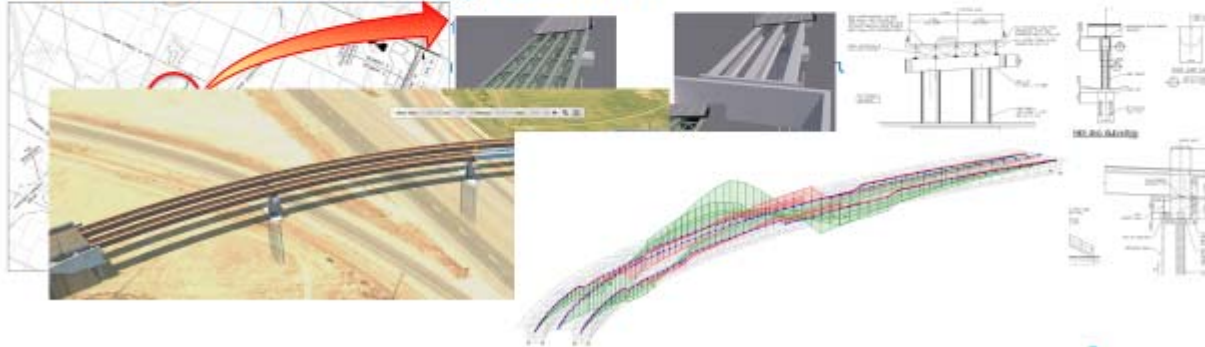
Current Caltrans Workflow



T-19 SCOBS Meeting question:

Where do you see your future in the BIM for Bridges and Structures realm?

- Support large projects with many roads, interchanges and bridges, in a collaborative manner
- Intuitive BIM based parametric modeling for all stages of the project lifecycle
- Open architecture for integration with 3rd party structural analysis and design ecosystem
- Innovation in the design of optimal solutions, leveraging machine learning, IoT for smart infrastructure
- Dedicated workflows for construction staging and documentation



T-19 Monday Afternoon

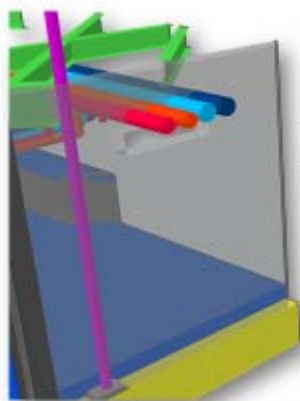
four models?



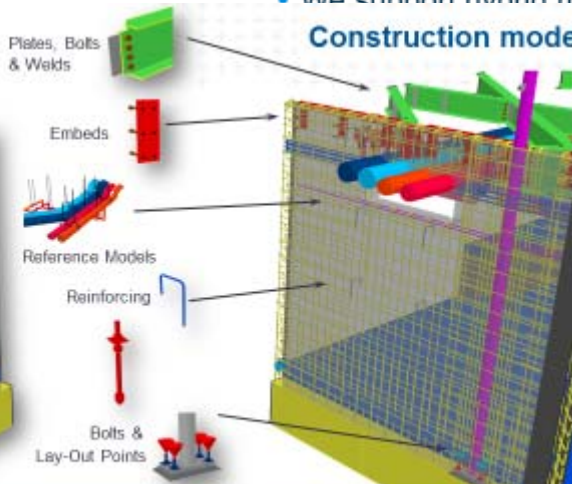
- We support hybrid models, that can meet current LOD 500

re too generic. The bridge industry will need to create specifically cover bridges and highway-related structures, terrain, and drainage features.

Design model



Construction model



SCHEMATIC DESIGN	DESIGN DEVELOPMENT	CONSTRUCTION DOCUMENTS	CONSTRUCTION STAGE	AS BUILT
LOD 200	LOD 300	LOD 350	LOD 400	LOD 500

We Need Your Support



T-19 Thanks You

