2016 AASHTO Right of Way, Utilities, Outdoor Advertising Control & National Alliance of Highway Beautification Agencies Conference

Sunday, May 1–Thursday, May 5
Rosen Centre Hotel
Orlando, Florida
BIM

• Intelligent 3D design

• Facilitates clash detection, project sequencing (4D/5D), visualization and other value-added steps

• “Encouraged” by FWHA and Map 21, future mandates expected

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VDC

• (Virtual Design and Construction) – lifecycle processes using BIM

• Examples of Value processes: clash detection, project sequencing (4D/5D), machine control, lifecycle data governance and asset management

• Leverages the value and inherent intelligence of BIM throughout a project's duration

• Key ROI: repurposing of data, reduction of disciplinary siloes, improved communication
Project Sequencing (4D/5D)

• What is project sequencing?

• 3D (modeling) = X,Y,Z
• 4D = X,Y,Z, + t (4th dimension of time with or without hard link to schedule)
• 5D is the addition of $\$\$ cost dimension (e.g. cost loading of schedule)
• 4D & 5D are a lifecycle value step in the use of BIM models (or BrIM)
4D & 5D Visualization

In other words...

• 4D virtual rehearsals involve linking a P6 (or other) schedule to a 3D or BIM model which then enables virtual coordination in time and space.

• 5D adds cost per item or event, + rolling totals and earned value analysis.

What is the value?

• Use of 4D technology has shown 50% reduction in costs caused by construction change orders and significant reduction in project durations due to enhanced project communication amongst disciplines and project partners.
Why use Project Sequencing and BIM for Planning?

1. Ability to impact cost and performance
2. Cost of design changes
3. Drafting-centric workflow

Graphic originated by Patrick MacLeamy, AIA/HOK

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Example – BIM Clash Detection
Example – 4D Project Sequencing

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Example – 4D Project Sequencing
Example – 4D Project Sequencing
Example – 5D Project Sequencing
Questions?