Utah Department of Transport
Bridge replacement ABC

The Challenge

UDOT identified over 28 bridges that needed urgent repair throughout the State. Using traditional methods this work is time consuming and causes approximately 9 months of commuter traffic disruption per bridge. This suboptimal scenario lead UDOT to search for innovative methods and technologies for rapid bridge replacement. in 2007 UDOT chose the Accelerated Bridge Construction (ABC) InteliSum was selected to deploy their ground breaking 3D scanning technology document the process in 3D.

The Solution

Instead of closing bridges for long periods of time while the new bridge was constructed, sections of the new bridge were actually built a few hundred feet away on the side of the freeway. The old bridge was then broken up into two sections and removed to a specified site on special heavy load vehicles called Self Propelled Modular Transporters (SPMT's.) When the new section was built, it was driven to the new location using SPMT's. The new bridge was placed and connected. InteliSum's LD3 scanning equipment was enlisted to capture the 'as built' structures and site measurements to sub milometer accuracy to verify the route that the new and old bridges traveled. The data was used for the creation of 3D animations used to educate the public about ABC and then used for newscasts. Please visit this link to see a short video about the project.

http://www.intelisum.com/isilo/videos_abc.html

The Results

- Overall savings for the project calculated at $1 million
- The bridge was only closed for one weekend
- The public involvement was totally positive
- Shortened 3D modeling and animation by 30 days saving $60,000
- UDOT submitted the LD3 data to the Director of Federal Highways for recognition

TIG Award

As a result UDOT submitted ISI's technology to AASHTO who subsequently awarded ISI the prestigious TIG Award.

The InteliSum Approach:

InteliSum worked extremely closely with UDOT to determine how its technology might assist them with the challenges they faced.

Project Management (3 Days):

- Initial scoping of the project looking for technology synergies
- Ongoing active linking with Director of R&D for UDOT
- Coordinating internal team in achieving deliverables

Scanning (4 Days):

- Site set up and targeting
- On site scanning

Post processing (4 Days):

- Desk top analysis and mapping
- 3D modelling and animation

Total Savings :

- Total ISI time 11 Days
- Traditional Methods 30 Days $60,000

CLIENT RESPONSE:

"**The 4500 South bridge replacement was the fastest ever replacement for a single-span structure in Utah."**