Sam White Lane Bridge Move
Salt Lake City, UT

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Bridge Division
Advance Longer-lasting highway infrastructure using Innovations to accomplish the Fast construction of Efficient and safe highways and bridges.
Summary

• I-15 CORE Project
• Utah ABC
• SPMT Bridge Moves
• Sam White Lane Construction
• Sam White Lane Bridge Move
• One of the largest roadway projects in Utah’s history
• Rebuilding or widening 24 miles
• Construction begins Spring 2010 and completed December 2012
• Design-Build Project
UDOT

ABC = Accelerated Bridge Construction
UDOT has recently adopted themes used as the basis of all projects in Utah:

- Accelerate Delivery – Design and Construction
- Decrease and minimize MOT
  - Reduce user costs associated with delays
- Encourage Innovation
- Get a good price
UDOT ABC

Precast Deck Panels, Abutments, & Approach slabs, Self Propelled Modular Transports (SPMT)

- ABC decreases impact to traveling public, increases quality, and increases safety
- UDOT has an initiative to make ABC the standard for all projects
- UDOT has developed typical details for ABC components and techniques
SPMT = Self Propelled Modular Transporter
SPMT and the U.S.A.

- Total number of states deploying SPMT technology = 8
  - Florida, Illinois, Louisiana, Massachusetts, New York, Rhode Island, Utah, and Washington

- Utah has completed more SPMT bridge moves than all other states combined. Sam White Lane Bridge was Utah’s 24th Bridge move.
UDOT SPMT

- Perform scanning tours
- Conduct pilot project
- Identify a program of projects
- Get involved nationally
Sam White Lane Bridge Location
Sam White Lane Bridge

- Length = 345 ft; Width = 76.83 ft
- 48° Skew; 7.3 % Grade
- Two Span – steel plate girder
  - 6 girders at 13.5 ft spacing, 4.67 ft overhang
  - Structure depth including deck = 7.083 ft
- 10 in Lightweight concrete deck
- Each girder sits on a 4 ft square column
- Foundation: 12 in concrete filled pipe piles driven ~ 100 ft
Sam White Bridge

- **Key Statistics**
  - Superstructure weight = 3.83 million lbs
  - Structural Steel = 1.02 million lbs
  - Lightweight Concrete = 1,134 CY
  - Area of Bridge = 27,500 SF
Sam White Lane Bridge Construction
Construction Execution

• Grading and layout
• Temporary abutment construction
• Demolition
• Conventional style super structure
• Conventional style sub-structure
• Deck pour and screed elevation
• Final grading
• Underground utilities in travel path mitigation
• Travel path construction
• One-night transport, placement, and alignment
May 7, 2010 – Crews remove the remains of the bridge
Demolition
July 13, 2010 – Center columns for new bridge under construction
Aug 2, 2010 – Center columns finished
Sept 28, 2010 – Temp supports installed adjacent to I-15

The Bridge was built approximately 300 ft from final location
Temporary Abutment Construction – H-pile supports
Oct 20, 2010 – Erecting steel girders on temp supports
Oct 20, 2010 – Erecting steel girders on temp supports
Conventional Style Superstructure
Girders are erected in a similar fashion as conventional construction with **3 notable differences.**

1. Structures erected offline
2. Improved Contractor accessibility and safety by erecting girders offline during the day in a secure and flat location
3. Substructure and Superstructure can be built simultaneously allowing the contractor to accelerate the schedule

Oct 20, 2010 – Erecting steel girders on temp supports
Nov, 2010 – Temp supports installed between steel girders
Nov, 2010 – Abut walls and center support columns are underway while new bridge is being built
Dec, 2010 – Crews build new bridge. Prep of abut and center columns continues
Jan, 2011 – Support columns and abut are being prepared for the new bridge
Jan 17, 2011 – New bridge constructed next to I-15
Jan, 2011 – Aerial view of Sam White Lane Bridge on temp supports
Jan, 2011 – Aerial view of Sam White Lane Bridge on temp supports

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Feb, 2011 – Plastic sheeting protects curing concrete
Temporary supports framed together with relative bearing seat elevations matching final bearing seat elevations
Feb, 2011 – Work on the approach, supporting structure, and new bridge continues in preparation for the move
Final grading performed prior to SPMT arrival and set up
SPMT arrival and set up
Sam White Lane Bridge Move

March 26, 2011
Tour - 4:00 PM
Temporary Supports
Sam White Lane Bridge Move

Move Begins: 11 PM
March 26, 2011

Temp = 40°F
Sam White Lane Bridge Move

Preview video: http://youtu.be/c4KTOjRxUAc

Time lapse video: http://youtu.be/lqyZ1HT0yMA
Political leaders and the public support innovative efforts that result in time savings and maintaining mobility. When asked about what positive things they associate with UDOT, residents specifically mention bridge moves.

“Our Currency is the Public’s Trust.”