



2009 I-80 Bridge over 2300 East

Description

Meta Fields

Project Location :

Salt Lake City

Mobility Impact Time : ABC: Partial slides on Friday nights reduced I-80 from 3 to 2 lanes during day on Saturday; I-80 closed 8 hrs; 2300 East on-ramp closed 14 days; bridges were slid into place over two weekends; total construction time was 4.5 months; Conventional: 6 to 7 months of I-80 reduced lanes and traffic shifts with phased construction

Impact Category : Tier 2 (within 3 days)

Dimensions : 80-ft long and 62.83-ft wide single-span bridge slide-in; 650-ton self-weight

Average Daily Traffic At Time Of Construction : 26630

Traffic Management : Traffic management alternative, if constructed conventionally: shift lanes to eastbound bridge for westbound bridge replacement, and vice versa

Existing Bridge Description : The twin single-span three-lane eastbound and westbound bridges were each 80-ft long and 62.83-ft wide. Built in 1965, they were deteriorated and required replacement.

Construction Method : The replacement superstructure spans each consisted of nine 36-inch-deep AASHTO Type II prestressed girders at 7.08-ft spacing with an 8-inch-thick cast-in-place lightweight concrete deck. The spans were constructed, complete with approach slabs, adjacent to the existing bridge on elevated shoring towers. A steep grade combined with ramp access to I-15 on the north side of the westbound bridge resulted in the need to build the new westbound span five feet higher in elevation. Substructures for the replacement bridges were built low enough underneath the existing bridges, while traffic was maintained, to act as permanent slide guides for the new spans. To replace the two spans, I-80 was closed from 10 pm on Saturday until 6 am the next day on two consecutive weekends in October 2009. The existing bridges were demolished conventionally. Cast-in-place post-tensioned concrete abutments were constructed under the existing bridges prior to the bridge slide. The new spans were then slid off the temporary abutments and onto the new abutments, with the new westbound span jacked down from its elevated location before being slid into place.

Stakeholder Feedback : The design-build method with selection based on lowest bid was selected for this project to benefit from contractor innovation. The contract allowed an I-80 maximum closure of 18 hrs and a 2300 East on-ramp maximum closure of 14 days. UDOT imposed incentives and disincentives of \$7,500 per 15-minute period, with a maximum incentive of \$150,000. The 2300 East Bridge required completion in less than 13 hrs to receive the maximum incentive. I-80 was closed for 8 hours. A partial slide occurred on the Friday night which reduced the three lanes down to two lanes all day on Saturday. This enabled the contractor to shorten the Saturday night closure. It was a balance of reducing risk and minimizing the impacts to traffic.

High Performance Material : Lightweight concrete deck

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Costs : \$5 million construction cost. The contractor priced the risk and staff hours into the bid for accelerated construction. The estimated cost of accelerated techniques is approximately \$1.0 million.

Funding Source : Federal and State

Incentive Program : Other: ARR Act (ARRA - American Recovery and Reinvestment Act)

Contract Plans : 1

Other Related Url : 2

Year Abc Built : 2009

State : UT

Owner : State

Location : Urban

Spans : One-span

Beam Material : Concrete

Max Span Length Ft : 80

Total Bridge Length Ft : 80

Construction Equipment : Lateral Slide

