1973 – Fremont Bridge

Description

Meta Fields
Other Related Url 0 Other Related Link : http://www.oregon.gov/ODOT/HWY/BRIDGE/
Abc Construction Equipment : Strand jacks; Float in
Miscellaneous Prefabricated : Arch span w/deck
Prefabricated Bridge Elements : Orthotropic deck
Contracting : Full lane closure
Project Delivery : Design-bid-build
Decision Making Tools : State Process
Longitude : -100
Latitude : 45.5342789
Nbi # : 2529
State Id # : 2529
Construction Equipment : Other ABC Method
Total Bridge Length Ft : 2152
Max Span Length Ft : 1255
Beam Material : Steel
Spans : Three-span
Location : Urban
Owner : State
State : OR
Year Abc Built : 1973
Other Related Url : 1
Funding Source : Federal and State
Costs : Insufficient records to reconstruct exact cost information. Published record listed $82 million as the total cost, but the main structure alone is about half that amount. In 1973, the bridge cost per sq ft was under $140.
Contacts : Bruce V. Johnson, P.E. State Bridge Engineer Oregon Department of Transportation bruce.v.johnson@odot.state.or.us 503-986-3344
Stakeholder Feedback : This is a proven and common construction method for prefabricated long-span bridges over navigable waterways. Floating a fully erected span accelerates the construction schedule and reduces the workers' exposure over the waterway, thus increases workers' safety. It also reduces the window time of the river closure and impact to shipping traffic.

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Construction Method : The arch span was built in California and floated 1.7 miles downstream of the bridge site at Swan Island, where it was assembled. It was then floated on barges to the bridge site and lifted into position using strand jacks. This construction method was selected to minimize cost and the impact on navigation.
Replacement Or New Bridge : The bridge has an upper and lower deck, each carrying four 12-ft-wide traffic lanes and two 10-ft-wide shoulders. The cross-section consists of a steel tied arch welded box girder supporting an orthotropic steel upper deck and a concrete lower deck system. The concrete piers were on concrete footings founded on deep foundations.
Dimensions : 2,152-ft-long, three-span continuous, semi-through steel tied arch main structure (451.83 ft side deck arch span – 1,255 ft drop-in tied arch center span (ABC) – 451.83 ft side deck arch span); 6,000-ton drop-in tied arch raised 175 ft into place
Primary Drivers : reduced onsite construction time; improved site constructability; minimized environmental impacts; reduced traffic impacts – least impact on navigational traffic; reduced life-cycle cost – least cost to build; improved work-zone safety – reduced worker exposure over waterway
Impact Category : Tier 6 (longer but reduced by months/years)
Project Location :

I-405 / US 30 over the Willamette River in the city of Portland in Multnomah County

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