

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

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**Stakeholder Feedback :** This is a proven and common construction method for prefabricated longspan bridges over navigable waterways. Floating a fully erected span accelerates the construction schedule and reduces the workersâ€<sup>™</sup> exposure over the waterway, thus increases workersâ€<sup>™</sup> safety. It also reduces the window time of the river closure and impact to shipping traffic.

Page 1

**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-ftwide 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  $\hat{a} \in 1,255$  ft drop-in tied arch center span (ABC)  $\hat{a} \in 451.83$  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