



交通部臺灣區國道高速公路局  
Taiwan Area National Freeway Bureau

## 國道高速公路後續路段橋梁耐震補強工程 (區段1-1)規劃設計及後續擴充(監造)

### 第一次專家學者座談會

附件A：國外斷橋緊急應變臨時橋梁案例

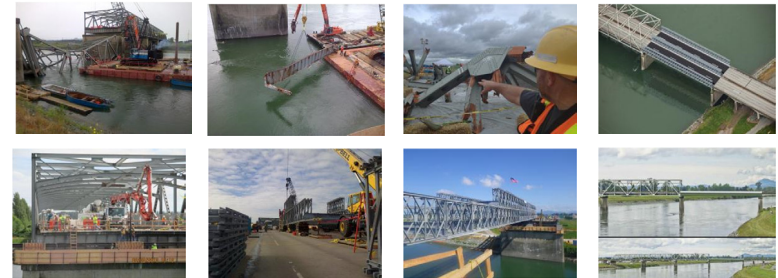
簡報人：彭康瑜 計畫主持人

TYLIN INTERNATIONAL TAIWAN BRANCH  
美商同校國際工程顧問股份有限公司 台灣分公司

中華民國 105 年 8 月 9 日

## 附件A：國外斷橋緊急應變臨時橋梁案例

### WSDOT I-5 Skagit River Bridge Collapsed on May 23, 2013



彭康瑜 8/8/2016

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## 華盛頓州 塌橋地點



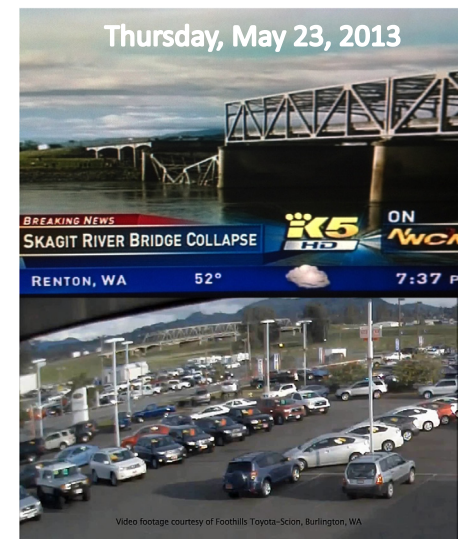
資料來源：綜合外電



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## What caused the bridge to collapse?

- State officials and the National Transportation Safety Board (NTSB) has confirmed that an **oversized load struck** the trusses that supported the bridge causing the collapse.



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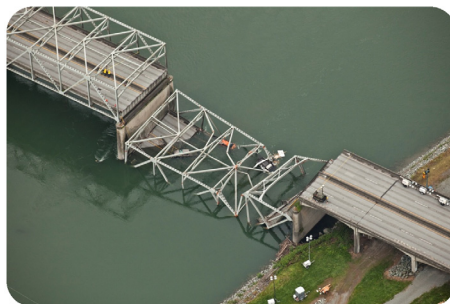
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## 美國Skagit河川橋塌橋事件之啟示

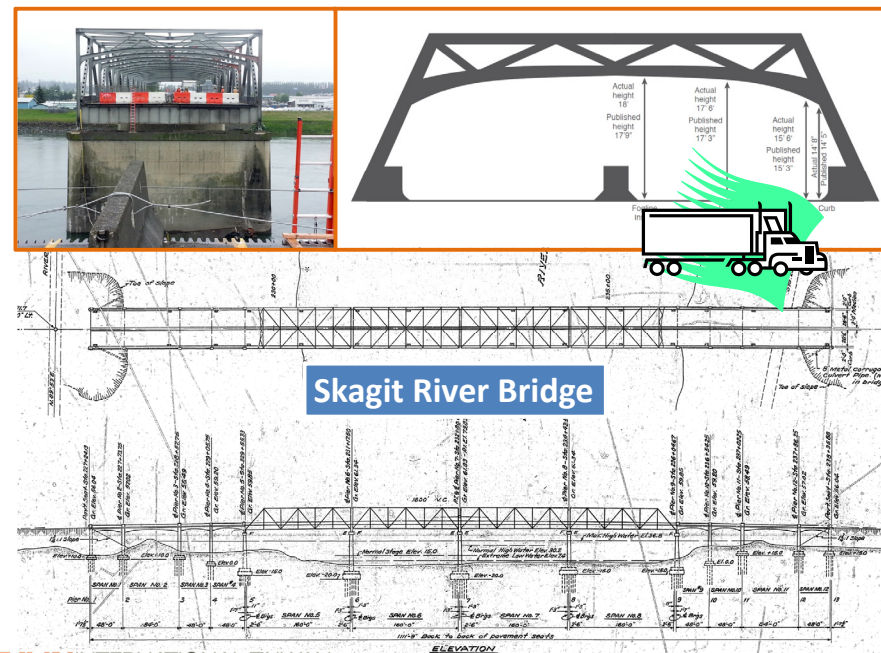
- 5月23日超高車輛撞擊橫撐門架
- 造成一系列破壞控制構件(FCM)破壞而塌橋
- 交維應變：27天內架設緊急橋梁

### 華盛頓州 塌橋地點



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## Temporary Bridge Installation

### Temporary Bridge Installation

- May 23rd - Skagit River Bridge collapsed. Issued Declaration of Emergency.
- May 24th - Issued emergency contract for removal & installation of temporary bridge.
- June 19th - Temporary bridge open to traffic. (27 days)



緊急應變模組式橋梁系統



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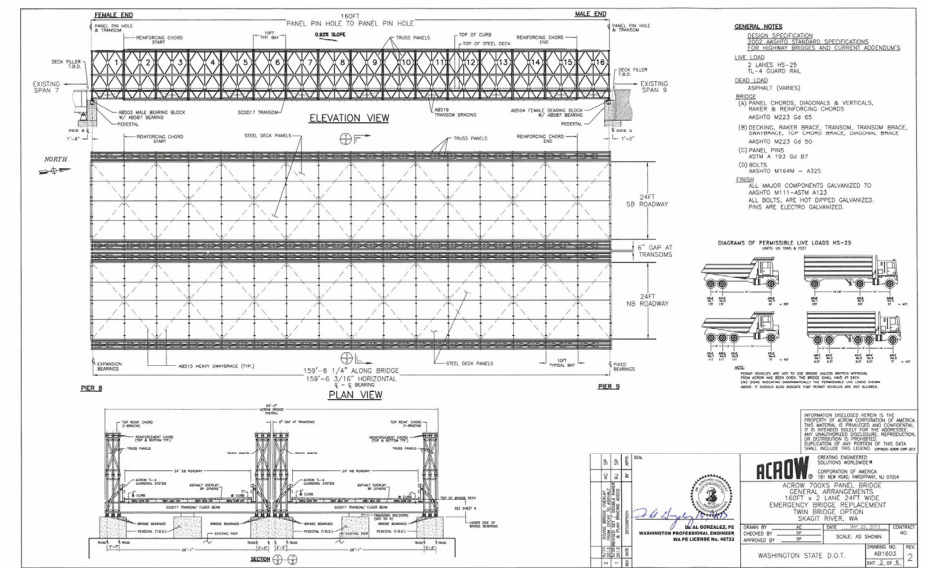
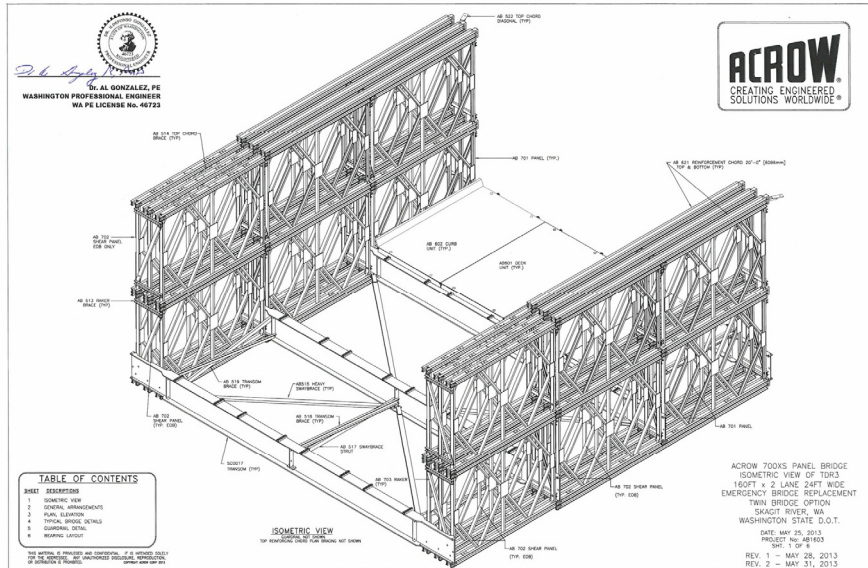




## Temporary Bridge Animation



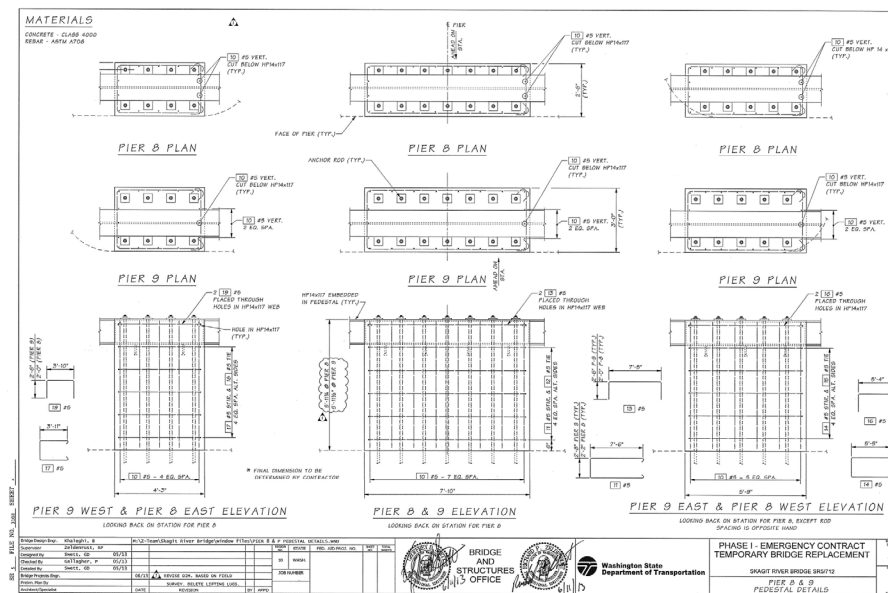
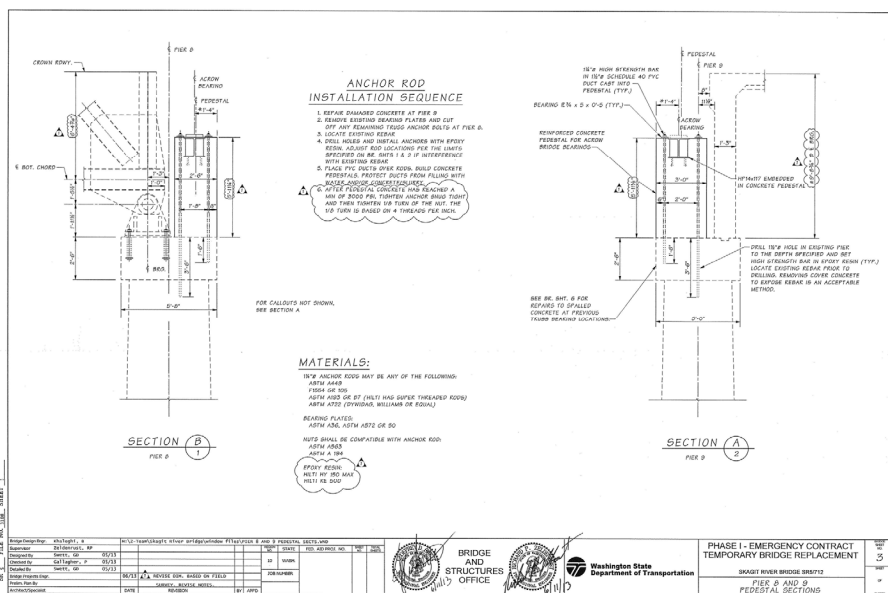
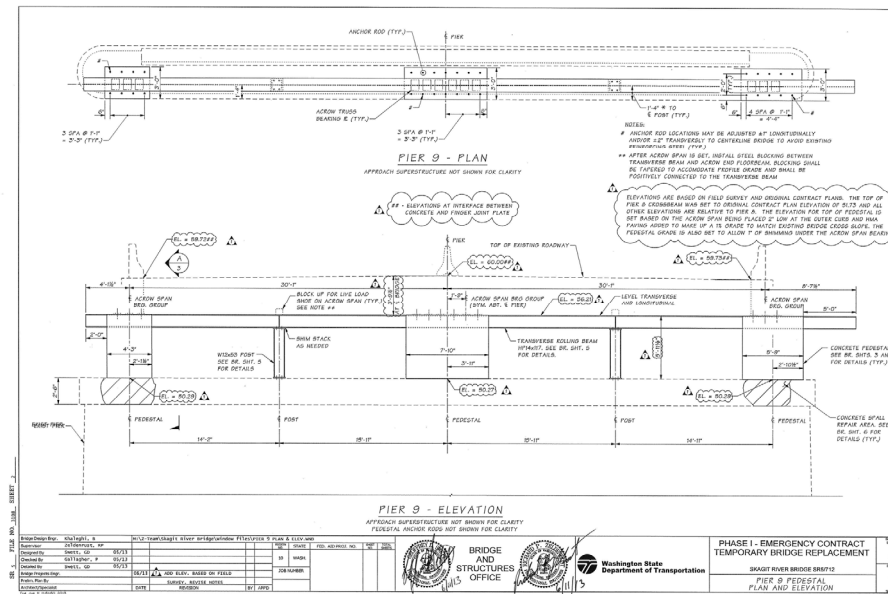
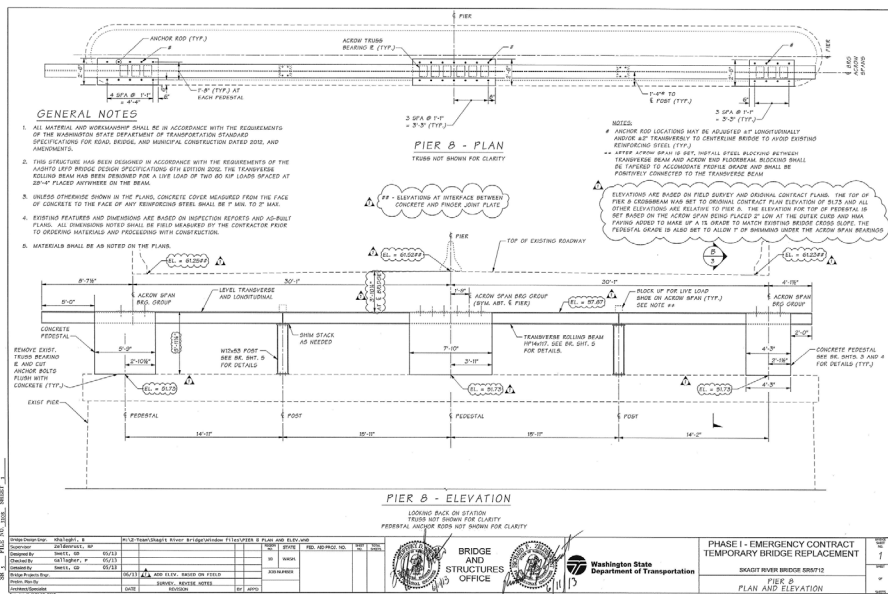




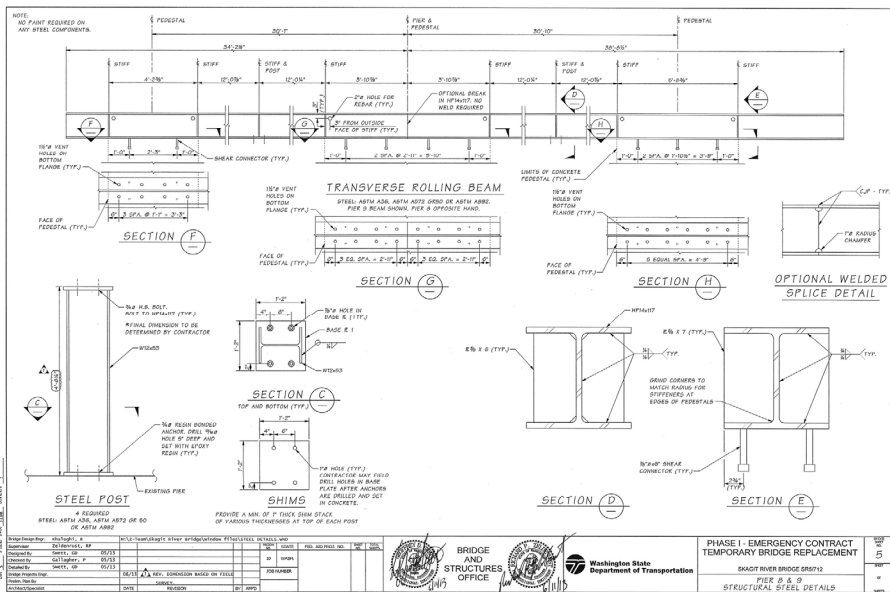






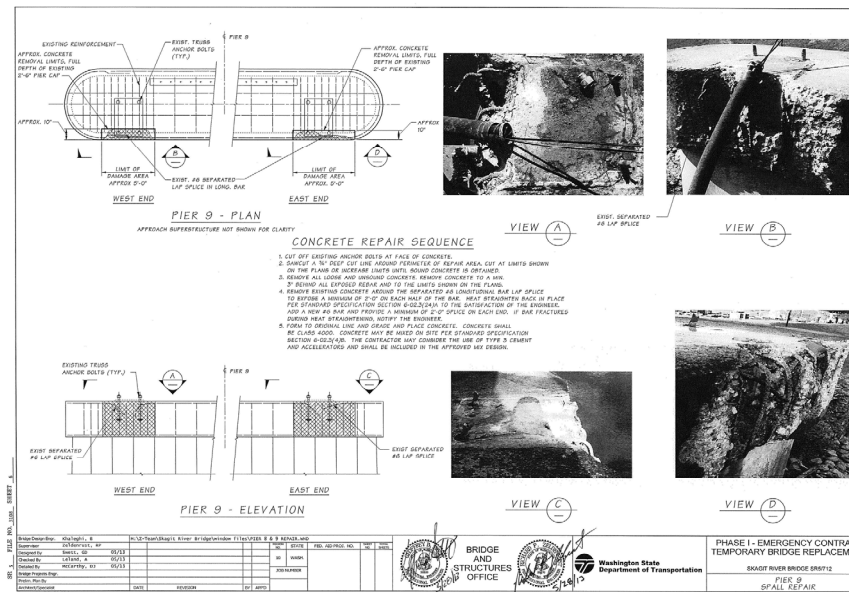






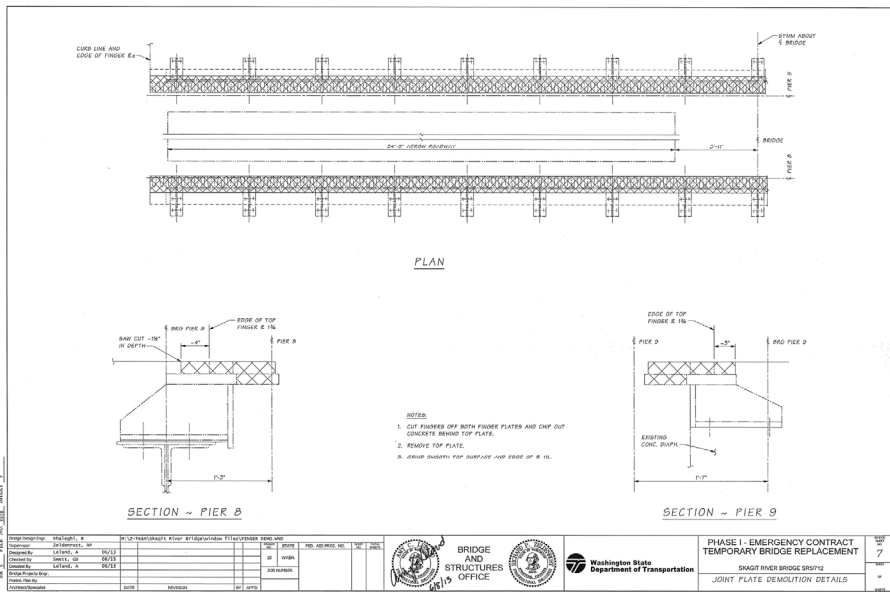
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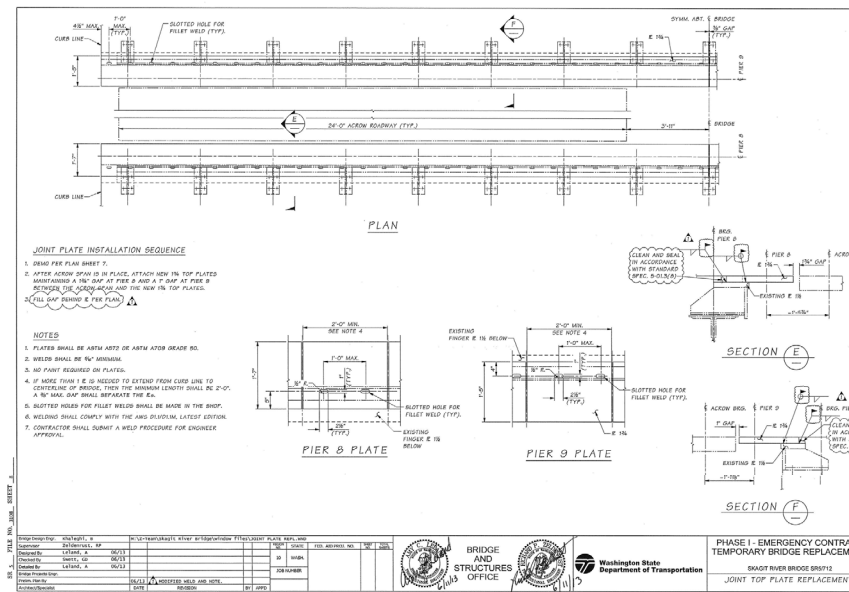
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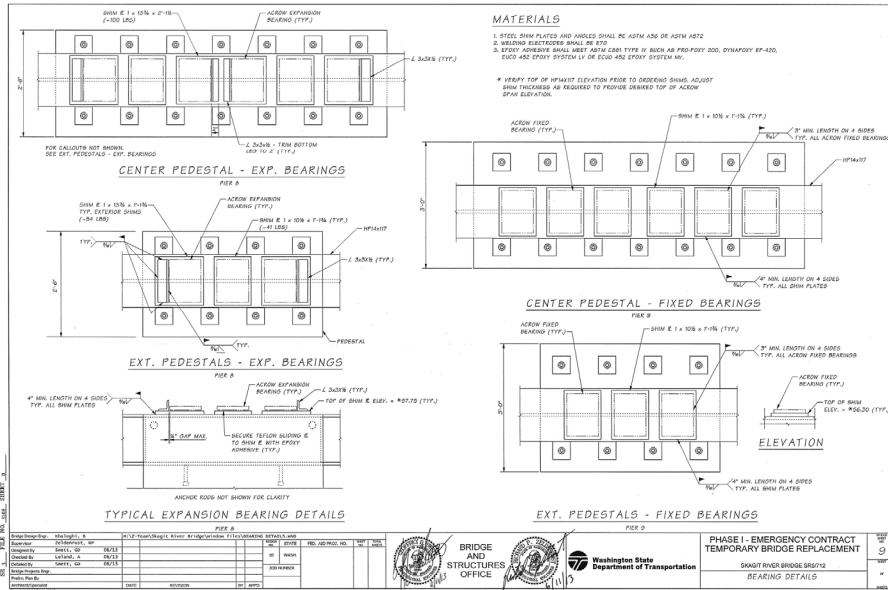
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## I-5 - Skagit River Bridge Collapse



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## Phase #1: Temporary Span (Incremental Launching)

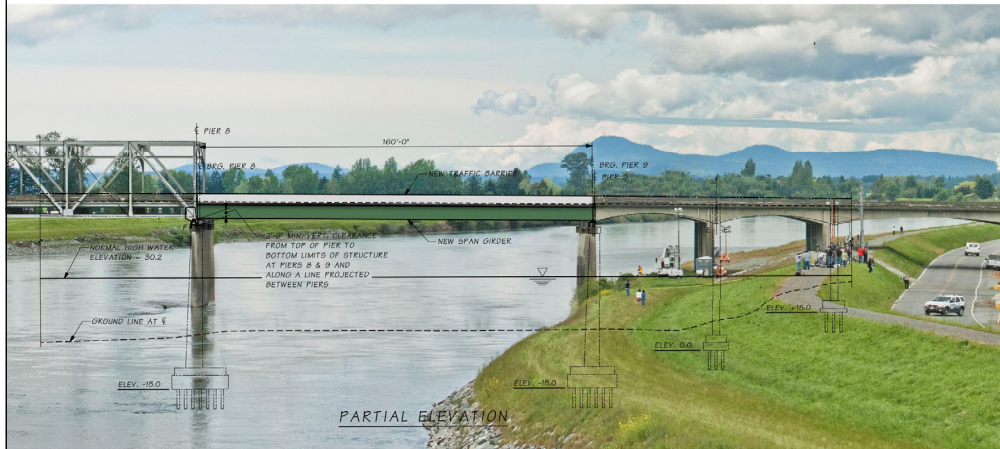


**Temporary Span –  
Completed on June 19<sup>th</sup>  
after 27 Days**





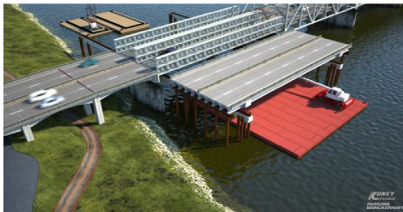
## Phase #2: Permanent Span



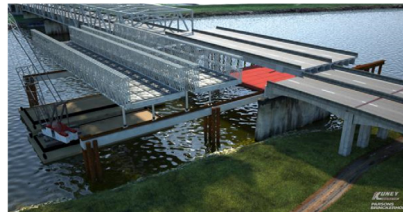
## Permanent Span - Preparation



## Next Steps – Span Slides



Overlay



Move bridge



## Temporary & Permanent Span Slides



19 Hours Road Closure

### Bridge Move Summary:

- Temporary Span out: 25 mi.
- Permanent Span in: 45 min.
- Deck Lowering: 30 mi.





## Permanent Span Completion



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Washington State  
Department of Transportation



I-5 Skagit River Bridge  
Replacement Project

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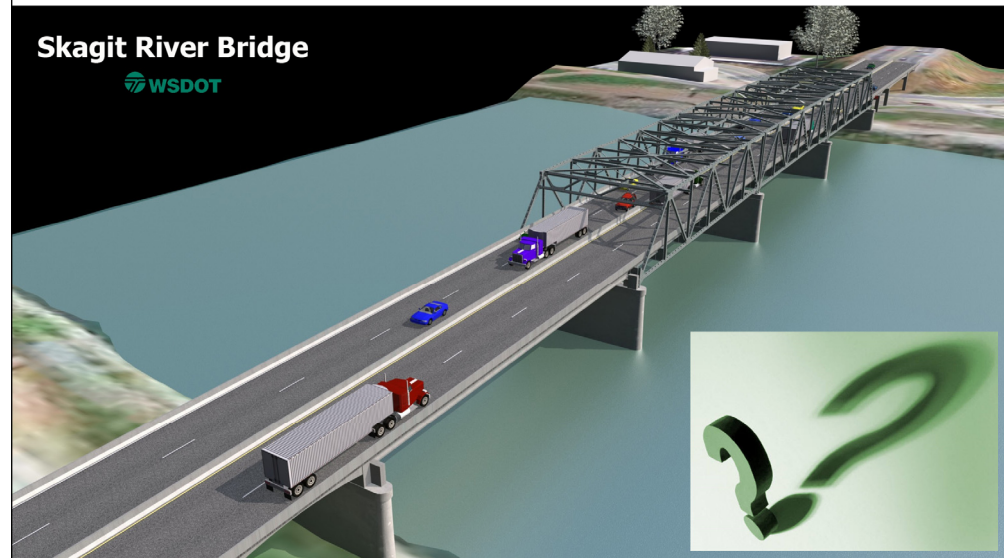


Building a Bailey Bridge Time Lapse Video

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Skagit River Bridge



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