

# Bridging the Columbia: I-5



2024 Spring  
Conference

## HISTORY COMMITTEE

Susann Babaei | Eli Zehner | Ken Hash | David Rowland | Sean McDermott



# Bridging the Columbia: I-5

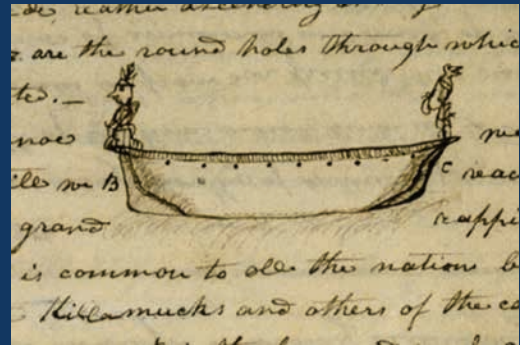
- Before Settlement
- The Ferry Era
- The One Bridge Era Begins: 1917
- The Two Bridge Era Begins: 1956-58
- The Replacement Era:  
Columbia River Crossing



# Before Settlement

- Banks of the Columbia River were major trading and fishing grounds for Indigenous people from all over what is now the NW United States and SW Canada
- Area was a major regional center of trade and cultural exchange
- Large winter villages were present along the Columbia and tributary rivers
- There was extensive trade among villages on both sides of the Columbia and with tribes in Eastern Washington

Native Chinookians had no problem crossing the Columbia in Dugout canoes made from a single western red cedar



## Quirky sites along the Way



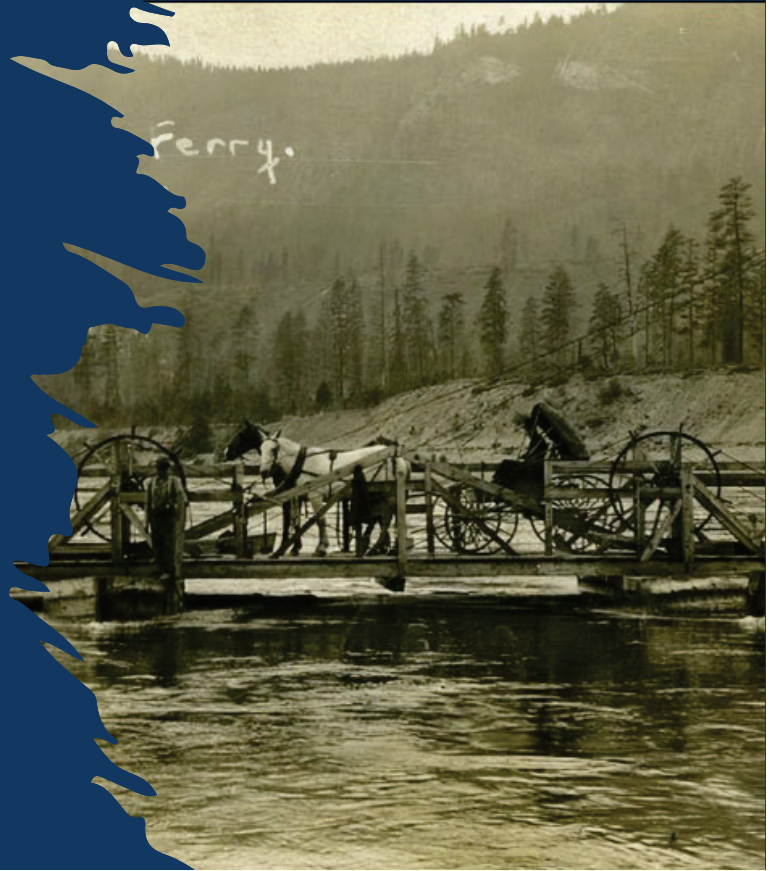
### Vista House





# The Ferry Era

- First ferry service between Vancouver and Portland started in 1846 — seven years before the Washington Territory was incorporated
- Ferry mainly carried foot traffic, operating sporadically for about a decade.
- In 1855, the fee to cross was 50 cents for a pedestrian, and fees increased depending on what animals were accompanying.
- Eventually, more ferries began service: at least three short-lived operations shuttled people between Vancouver and Portland



# The Ferry Era

- The *Vancouver* began service in 1893.
  - It caught fire and was nearly destroyed in 1899.
- The *City of Vancouver* ferry replaced the *Vancouver* in 1909.
  - Served until the first interstate bridge was completed in 1917



Several other ferries and companies provided ferry services from other locations along the river.

# Kalama –Goble Train Ferry and First RR Bridge

- Kalama, 12 miles downstream from Vancouver became an important port and crossing.
- The *Tacoma*, a side-wheel steamer carried entire trains across the Columbia River, starting in 1883.



A train crossing the bridge's 467-foot (142 m) swing-span section

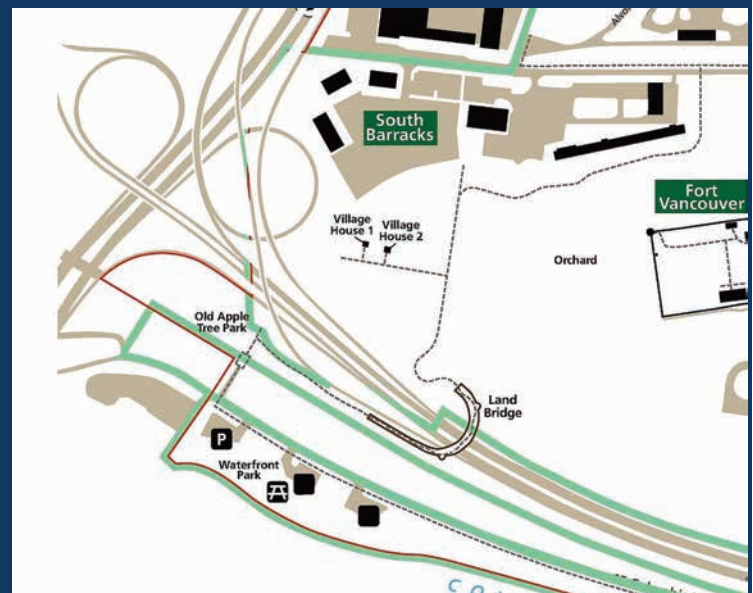
- The *Tacoma* was made obsolete by the completion of a two track RR bridge directly between Vancouver and Portland in November 1908.
- It crosses over Hayden Island which separates the Columbia into two channels
- Length across the Washington Channel is 2807 feet.
- Length across the Oregon Slough is 1466 feet.

## Quirky sites along the Way



## Old Apple Tree Park

Bridging the Columbia: I-5





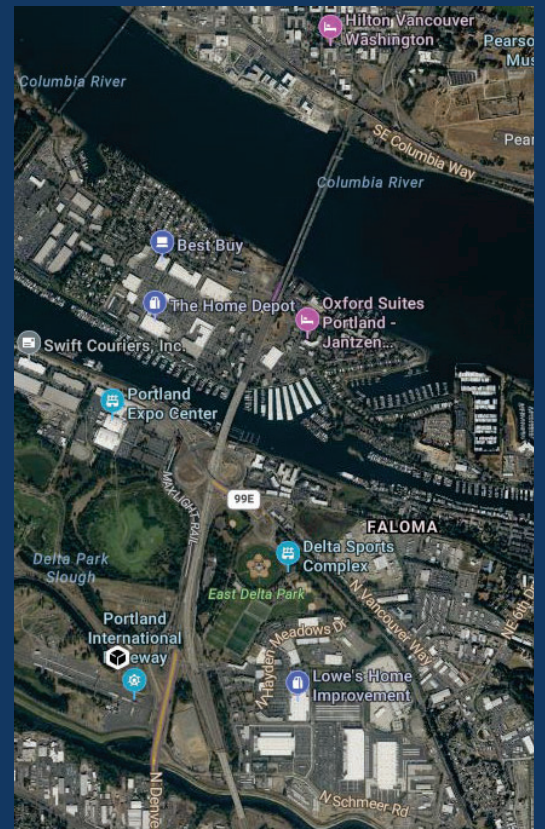
## The One Bridge Era Begins: 1917

- Multnomah and Clark Counties approved bond measures to fund a bridge directly connecting Portland and Vancouver in 1913.
- Design completed in January 1915 and bids opened from 24 contractors in March 1915.
- Completion was set for October 1916 with a \$1.75M (\$40M today).
- Opened to traffic in February 1917 and was under budget.
- Bridge roadway 38 feet wide, with two lanes for vehicles, with two sets of streetcar tracks running between them.
- A five-foot-wide sidewalk was on the upstream (east) side of the bridge.



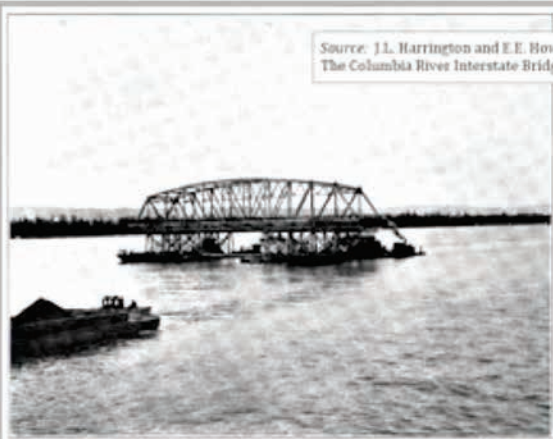
## The One Bridge Era Begins: 1917

- Entire project included three bridges and approaches, totaling approximately 3.75 miles in length.
- Going north from Portland, there is a 300-foot-long bridge over the Columbia Slough.
- A mile north is the Columbia River, split into two channels by Hayden Island.
- The smaller south channel, known historically as the Oregon Slough, is crossed by a 1,137-foot-long bridge to the south side of Hayden Island.
- The 3,500-foot Interstate Bridge spans from the north side of Hayden island across the main channel of the river to Vancouver.





Source: J.L. Harrington and E.E. Howard, 1918,  
The Columbia River Interstate Bridge, Final Report.



**ERECTING THE SUPERSTRUCTURE METALWORK.**

Transporting one of the spans from the launching ways on shore to its piers by floating. The span is 215 ft. long and weighs 500 tons. Its lowest part is about 25 ft. above the water. Four barges and two sternboats, besides tugs, were used for moving.



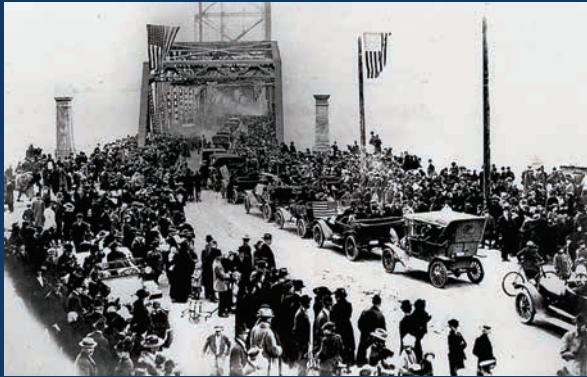
Source: J.L. Harrington and E.E. Howard, 1918,  
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**ERECTING THE SUPERSTRUCTURE METALWORK.**

The spans were erected back on shore, to the left, and as each was completed it was rolled out over the water on the ways. The steel storage yard, the launching ways and five nearly completed spans are seen.



# The One Bridge Era Begins: 1917



## Opening Ceremony

- February 14, 1917
- Official opening at 12:30 PM

Ten-year-old Elanor Holman  
and seven-year-old Mary  
Kiggins cut the ribbon



# The One Bridge Era Begins: 1917

## Tolls charged from 1918 to 1929

- Three-and-a-half cents for streetcar passengers (about 75 cents in 2020)
- five cents for one person in an automobile or on a bicycle or horse (the horse cost an extra nickel).
- Light trucks were charged a 10-cent toll while heavy trucks (more than two tons) were charged 50 cents.
- Children under age 7 crossed free.

## Quirky sites along the Way



## Chkalov Transpolar Flight Monument



## John A. L. Waddell

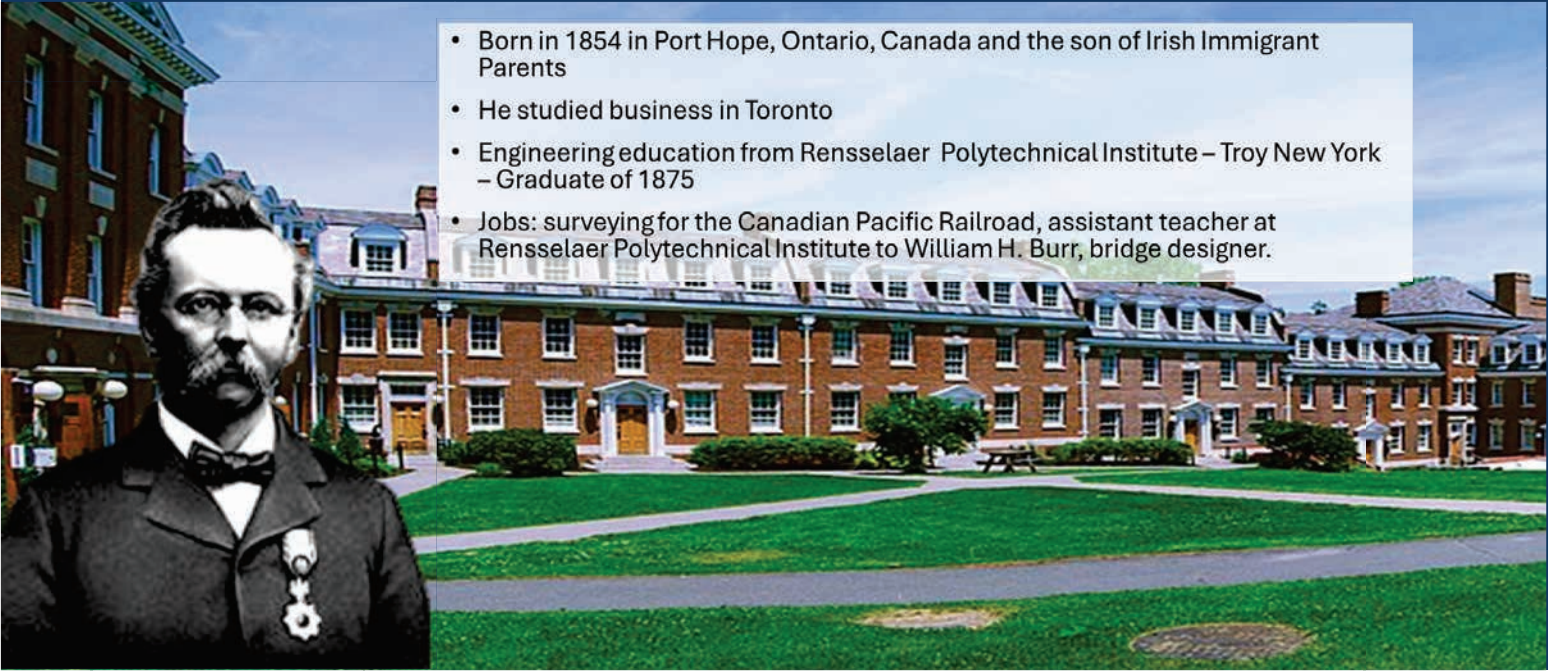
Genius behind the design of the Interstate Columbia River Bridge





# John A. L. Waddell – Early Life and Education

- Born in 1854 in Port Hope, Ontario, Canada and the son of Irish Immigrant Parents
- He studied business in Toronto
- Engineering education from Rensselaer Polytechnical Institute – Troy New York – Graduate of 1875
- Jobs: surveying for the Canadian Pacific Railroad, assistant teacher at Rensselaer Polytechnical Institute to William H. Burr, bridge designer.



# John A. L. Waddell – Accomplishments

- Worked with the Canadian Pacific railroad building roads through the most difficult part of the Rocky Mountains.
- Principle engineer of the Trans-Alaska-Siberian Railway
- Professor at Imperial University of Japan.
- Involved in the design of over 1000 bridges in Canada, the United States, and Japan.
- Prolific author of book regarding bridge design, specifications and contracts (over 20 books).
- Originator of multiple patterns



Arroyo Seco Bridge in Pasadena, California (1913)



Twelfth Street Bridge in Kansas City, Missouri (1915)



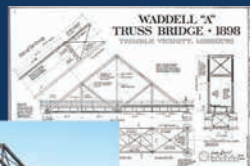
Columbia River Interstate Bridge Portland to Vancouver (1917)



Detroit-Superior Bridge over the Cuyahoga River in Cleveland Ohio (1918)



Outerbridge Crossing from New Jersey to Staten Island, New York (1928)



# John A. L. Waddell – Legacy of the Interstate Columbia River Bridge



## The Two Bridge Era Begins: 1956-58

After due consideration of alternatives, WSDOT and ODOT agreed to build a replica of the 1917 bridge.

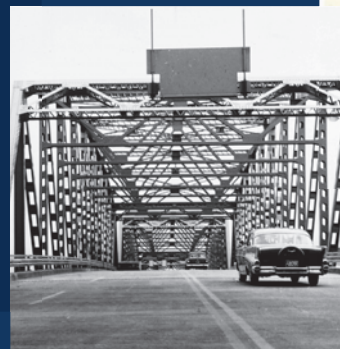
- Oregon Department of Highways took the lead on the design.
- 1917 design was substantially duplicated with three major differences.
  - Two of the short spans were replaced by a longer span to create a secondary channel.
  - The mid-span height was raised from 58 feet to 72 feet.
  - The structural members were changed from built-up lattice units to single structural members
- The cost of the project was \$14 million

Modifications to original bridge during a closure, 1958

- Vertical alignment modified by increasing pier heights and tipping existing short spans to match the “humpback” vertical alignment.
- Roadway modified to three travel lanes.
- Two short center spans replaced by a longer span.



Pillings for the second span of the Interstate Bridge. Photo from June 4, 1957.  
The Columbian archives





# The Two Bridge Era Begins: 1956-58

## New Bridge Opens on July 1, 1958

- Helen E. Kiggins McAleer and Eleanore Homan Burkitt untied ribbon to open new bridge to traffic.
- Same two women had untied the ribbon on the first bridge 41 years earlier.
- World War 1 era cars led the procession while jets zoomed overhead.
- Both bridges designated as part of the Interstate Highway System in 1958,
- Tolls re-introduced in 1958: 20 cents for cars, 60 cents for trucks.
  - (Tolls removed in 1966 when bonds were paid off.)







# Columbia River Crossing (CRC)

## Timeline

### Prior studies

- 1999 – 2002
  - Portland/Vancouver I-5 Trade Corridor Between Washington and Oregon
  - I-5 Transportation & Trade Partnership

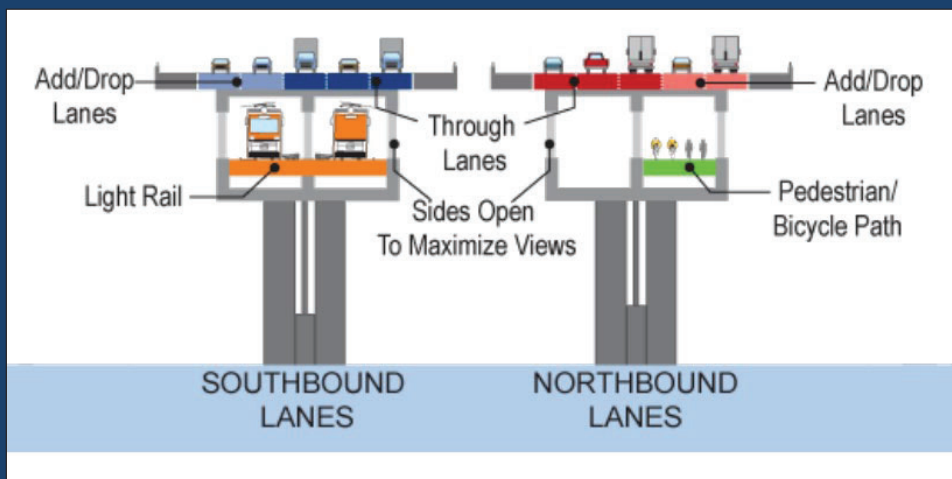
### Columbia River Crossing (CRC)

- 2005
  - Task Force formed
  - Adopted Vision and Values statement
- 2006
  - FTA and FHWA approved project Purpose and Need
  - 12 preliminary alternatives developed
  - Staff Recommendation of 3 alternatives
    - No build
    - Replacement river crossing with bus rapid transit
    - Replacement river crossing with light rail
- 2008
  - Draft EIS published
  - Preferred Alternative is replacement river crossing with light rail



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# Columbia River Crossing (CRC)



Columbia River Bridge Design

2013  
Preferred  
Alternative

- Two bridge structures to carry a total of five vehicle lanes in each travel direction.
- Structure will use a deck truss bridge type.
- Southbound bridge will carry light rail traffic under the highway.
- Northbound bridge will carry a wide bicycle and pedestrian pathway.
- Replacement bridge design does not include a lift span.

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# Columbia River Crossing (CRC)

## Timeline

### Columbia River Crossing (CRC)

- 2010
  - Bridge Review Panel convened to evaluate potential bridge types for replacement I-5 bridge
- 2011
  - Governors of Oregon and Washington accept Bridge Review Panel recommendation, choose deck truss bridge type as the replacement structure for I-5 bridge

The EIS was \$105 million

Design was costing \$1 million/month.

The official cost estimates for a phased build-out were \$2.8 billion.

For the next 2-years critics come out of the woodwork.



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# Columbia River Crossing (CRC)

## Timeline

### Columbia River Crossing (CRC)

- 2011 - 2013
  - At least 3 lawsuits are filed.
    - Thompson Metal Fab in Vancouver.
    - Residents of Hayden Island.
    - The Coalition for a Livable Future, Northeast Coalition of Neighborhoods, and Northwest Environmental Defense Center.
  - Hayden Island property impacts.
  - Controversy over bridge height.



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# Columbia River Crossing (CRC)

## Termination

### Columbia River Crossing (CRC)

- April 2013
  - \$227 million had been allocated.
  - \$175 million spent.
  - The project was terminated after the Washington State Senate failed to approve \$450 million in funding.
  - Key opponent Sen. Ann Rivers (My current boss) has been called by some, "The Bridge Killer."
  - One thing is for sure, the common objection from opponents was the inclusion of light rail.



14 years and \$175 million later ...



## What's next?

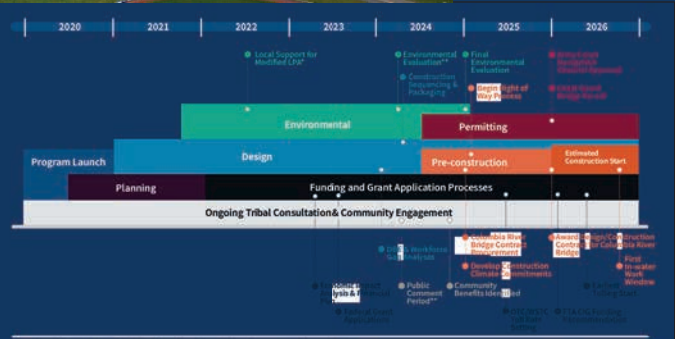
# Interstate Bridge Replacement Program (IBR)

- 2017 – the new Interstate Bridge Replacement Program was launched by WSDOT.
- Budget - \$5 to \$7.5 Billion



IBR

Award a design/build contract - 2026



Working draft, 11.27.2021. Schedule will be updated as needed to reflect program changes and timelines.  
 \*Various agencies confirmed their support for foundational program investments identified in the Modified CMAQ Locally Preferred Alternative for advance for further study in draft Supplemental Environmental Impact Statement (SEIS).  
 \*\*The public comment period will extend for 60 days following public review of the Draft SEIS; refinements will be made to address comments and a Jordan wide alternative for analysis in the Final SEIS will be published.



- Columbian Newspaper
- Overlanders in the Columbia River Gorge, 1840–1870: A Narrative History
- The Columbia River: A Photographic Journey
- OregonHistoryProject.org
- UW Special Collections
- Wikipedia
- HistoryLink.org
- ODOT & Oregon State Archives
- Historic Bridges Org
- WSDOT & Washington State Archives

Credits

