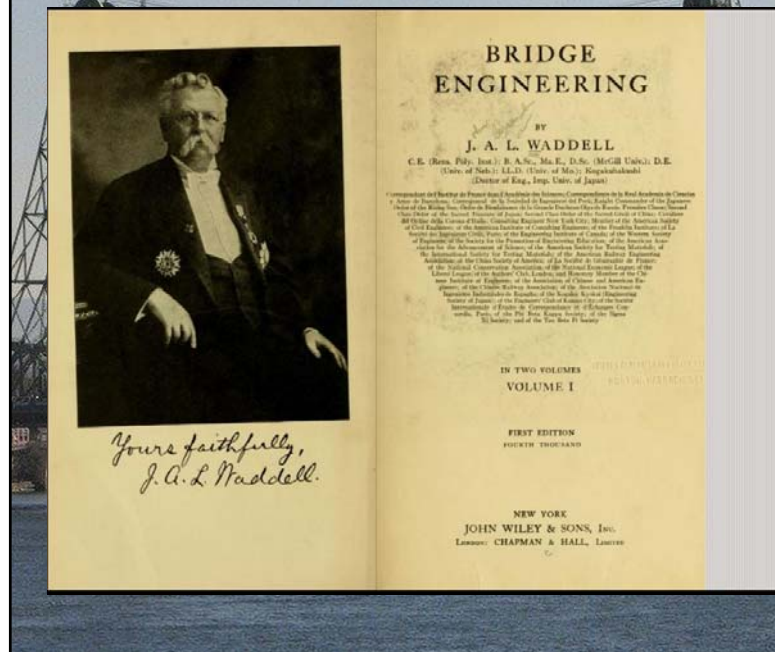


Vancouver/Portland before 1917: The Ferry Era

- Portland/Multnomah County has 100,000 population
- Vancouver/Clark County has 10,000 population
- The only roadway bridge crossing the Columbia River was built at Wenatchee in 1908.
- The Northern Pacific Railway Bridge between Vancouver and Portland was opened in 1908.

Design of the First Columbia River Bridge in 1917

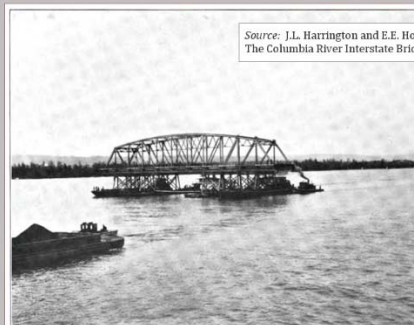


John A. S. Waddell

- Born in Port Hope, Ontario, Canada in 1854.
- Educated at Rensselaer Polytechnic Institute
- Held patents for vertical lift span design.
- Designer of the Steel and Hawthorne Bridges over the Willamette River in Portland.
- Home office in Kansas City, Missouri.
- Died in New York City in 1938.

Construction of the First Columbia River Bridge

- Eleven fixed spans and one vertical lift span totally 3,627 feet in length
- Lift span provided 176 feet vertical clearance over shipping channel
- Cost \$1.75 million, funded by Clark and Multnomah Counties
- Provided four 9-foot lanes, a sidewalk, and a trolley car track (Intermodal!)



ERECTING THE SUPERSTRUCTURE METALWORK.
Transporting one of the spans from the launching ways on shore to its piers by floating. The span is 272 ft. long and weighs 500 tons. Its lowest part is about 25 ft. above the water. Four barges and two steamboats, besides tugs, were used for moving.



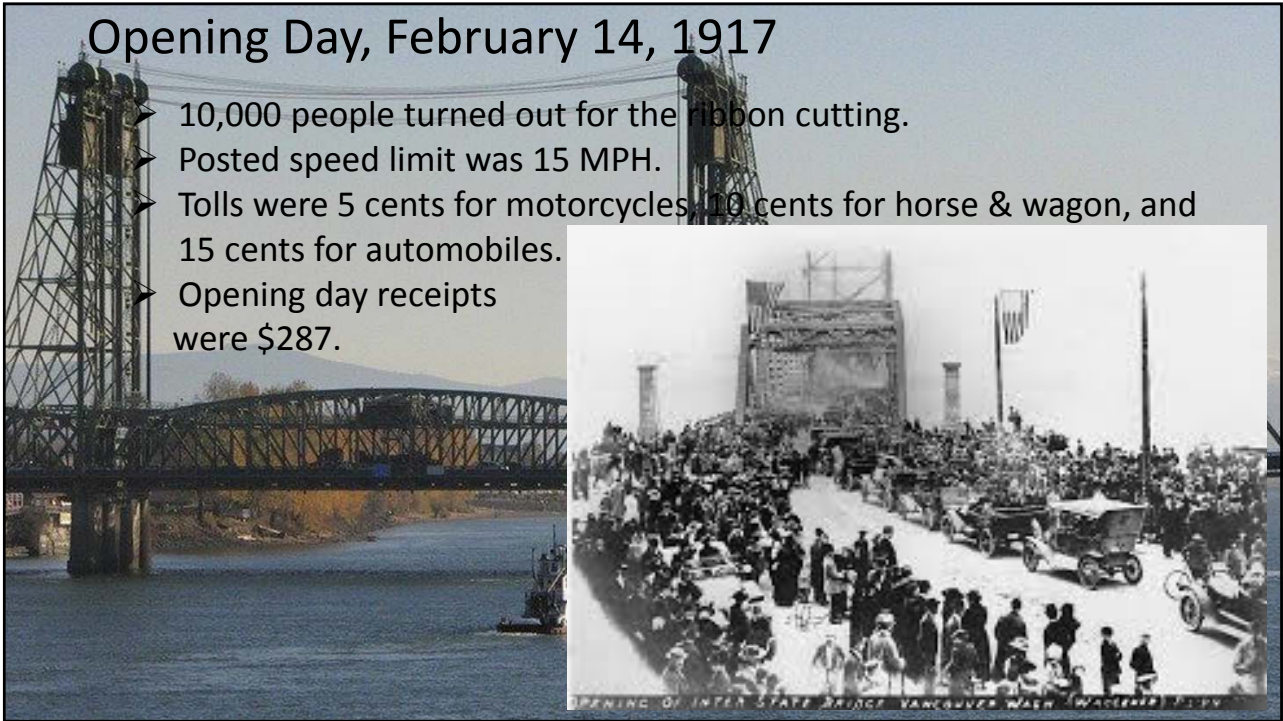
MANUFACTURING THE STEEL.
View taken at Gary, Ill. All of the trusses were assembled at the shop, as shown lying on the ground here, all the holes for field rivets framed, and the different members match marked so they could be erected in Vancouver in just the same positions. This insured perfect matching of holes for the field rivets.

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

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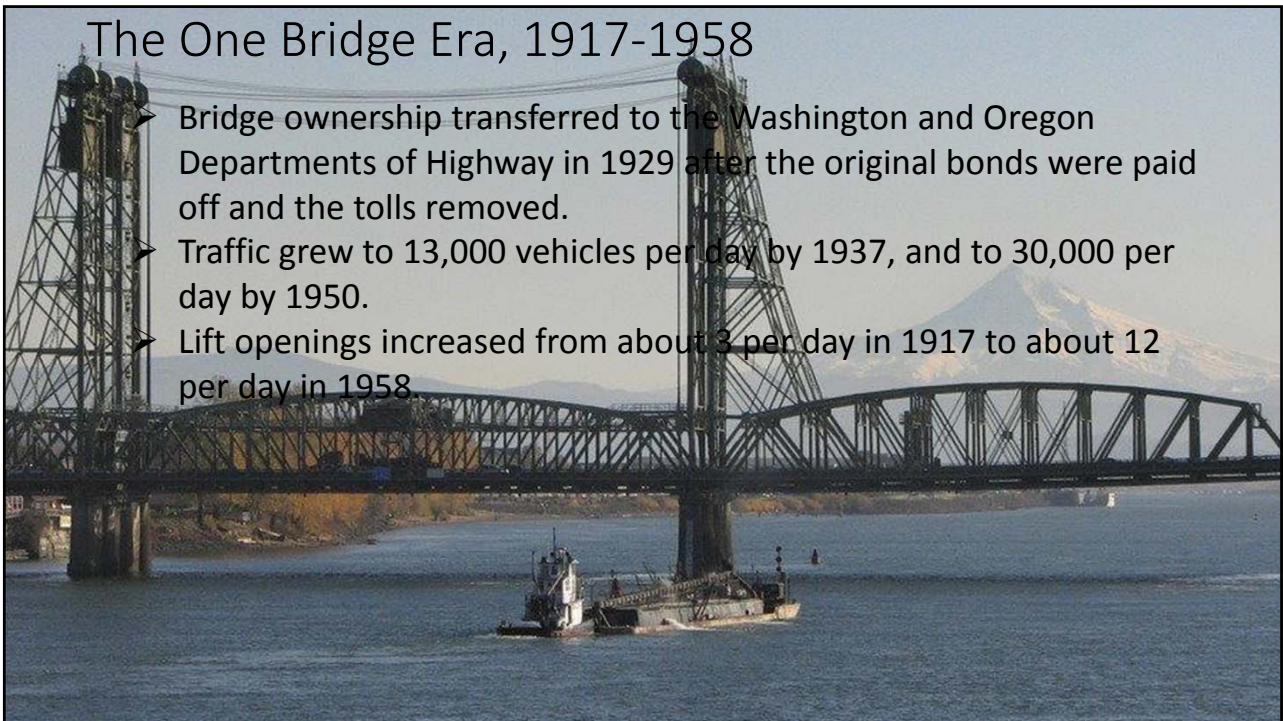
Opening Day, February 14, 1917

- 10,000 people turned out for the ribbon cutting.
- Posted speed limit was 15 MPH.
- Tolls were 5 cents for motorcycles, 10 cents for horse & wagon, and 15 cents for automobiles.
- Opening day receipts were \$287.



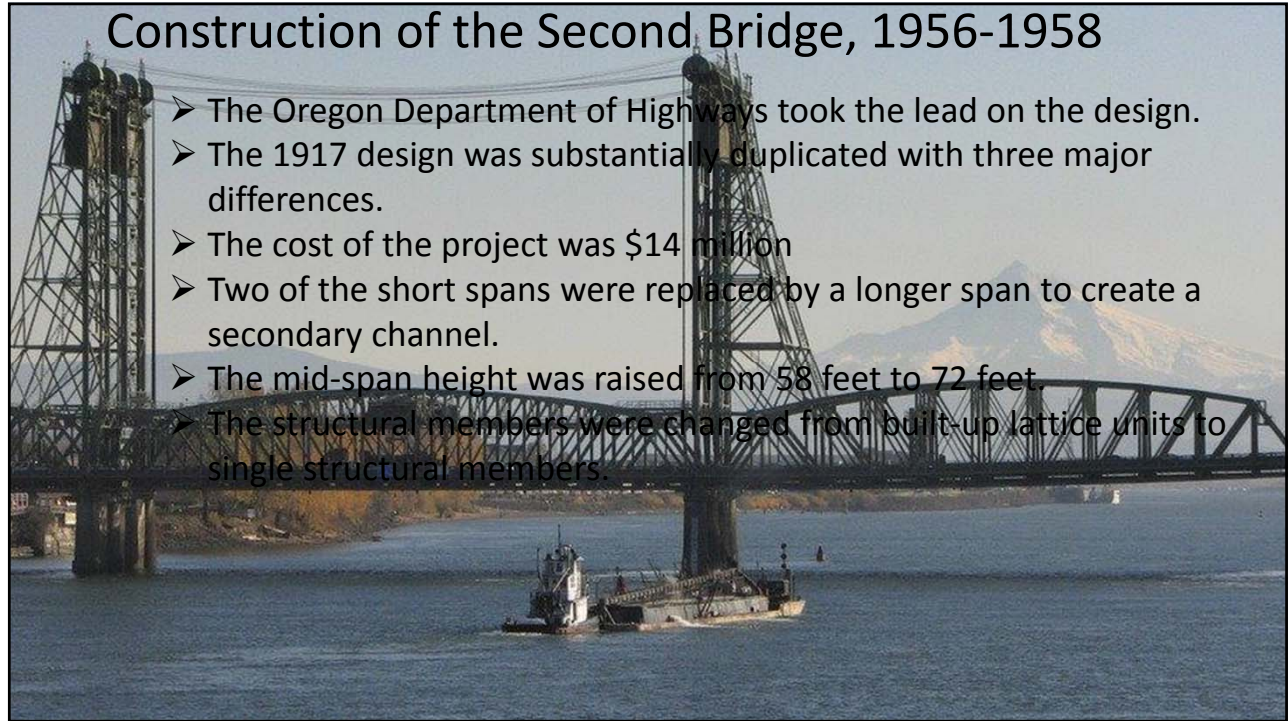
The One Bridge Era, 1917-1958

- Bridge ownership transferred to the Washington and Oregon Departments of Highway in 1929 after the original bonds were paid off and the tolls removed.
- Traffic grew to 13,000 vehicles per day by 1937, and to 30,000 per day by 1950.
- Lift openings increased from about 3 per day in 1917 to about 12 per day in 1958.



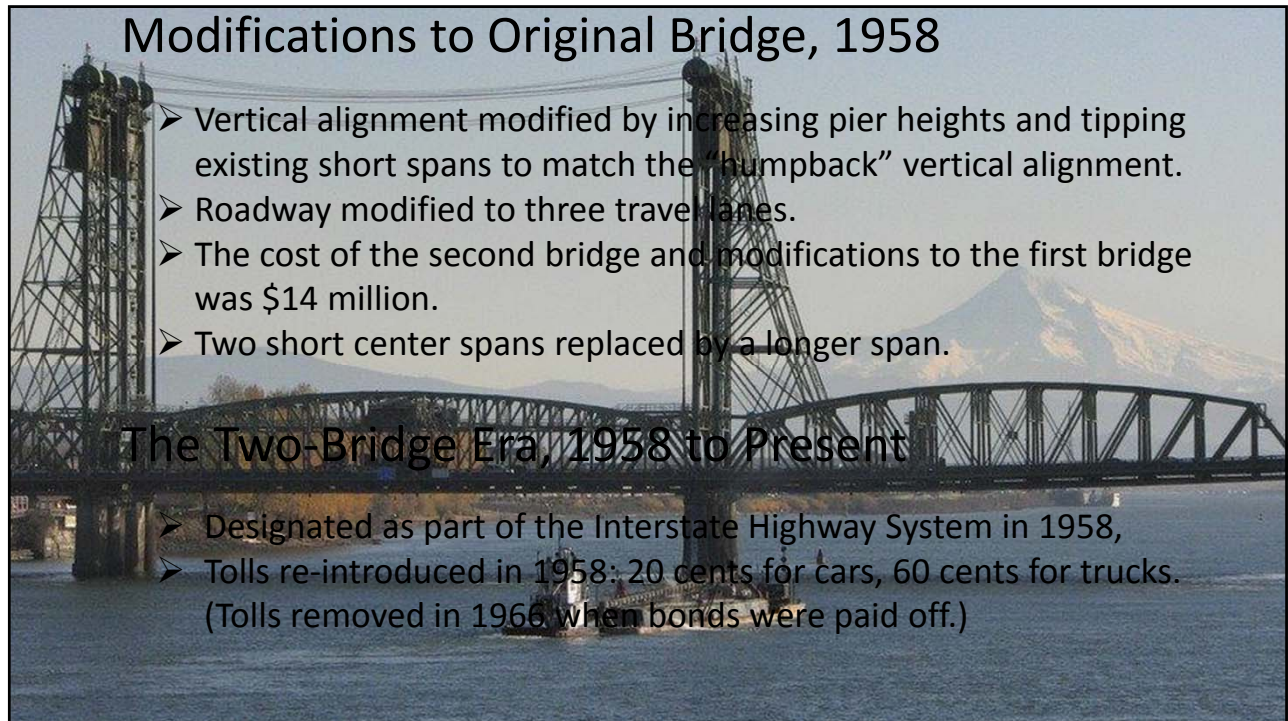
Construction of the Second Bridge, 1956-1958

- The Oregon Department of Highways took the lead on the design.
- The 1917 design was substantially duplicated with three major differences.
- The cost of the project was \$14 million
- 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.



Modifications to Original Bridge, 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.
- The cost of the second bridge and modifications to the first bridge was \$14 million.
- Two short center spans replaced by a longer span.

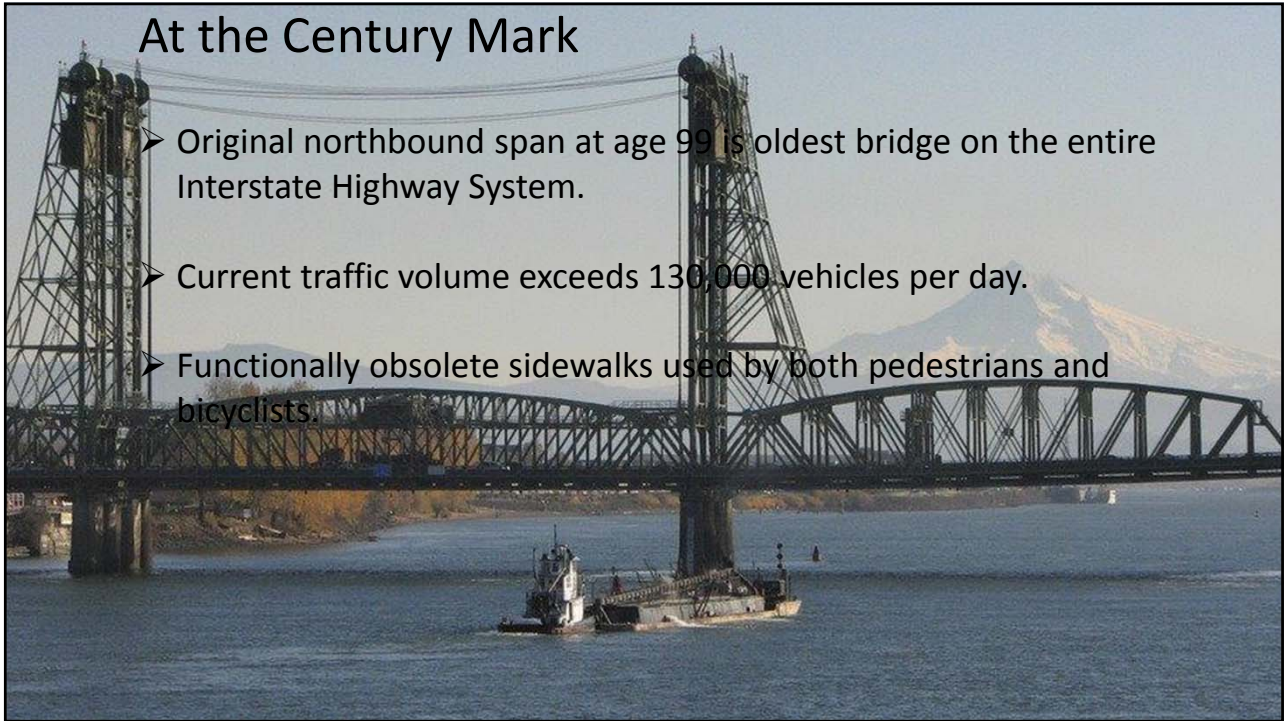


The Two-Bridge Era, 1958 to Present

- 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.)

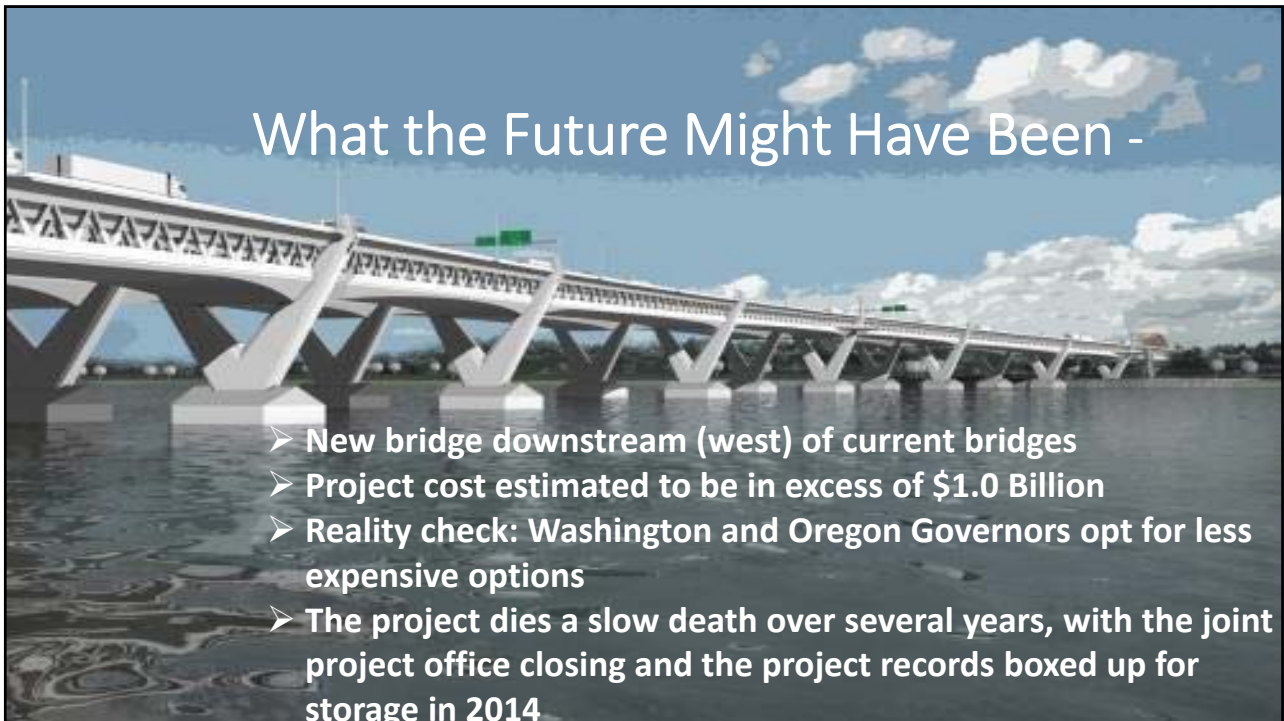
At the Century Mark

- Original northbound span at age 99 is oldest bridge on the entire Interstate Highway System.
- Current traffic volume exceeds 130,000 vehicles per day.
- Functionally obsolete sidewalks used by both pedestrians and bicyclists.



What the Future Might Have Been -

- New bridge downstream (west) of current bridges
- Project cost estimated to be in excess of \$1.0 Billion
- Reality check: Washington and Oregon Governors opt for less expensive options
- The project dies a slow death over several years, with the joint project office closing and the project records boxed up for storage in 2014



What happens if the 100-year old structure fails?

- Nearest detour crossings are 6 miles upstream (8-lane I-205 Glenn Jackson Bridge) and 40 Miles Downstream (2-lane SR 433 Lewis and Clark Bridge at Longview).
- Major disruption of 1400 mile long I-5 NAFTA trade corridor from Mexico to Canada.
- Greatly increased commute time in Vancouver-Portland metropolitan area.



Breaking News

Bob Moorhead is retiring!!!

- APWA- WA President - 2003
- James Robertson Awardee – 2004
- (Last) President-Elect – Public Works Historical Society
- Committees
 - Awards
 - Transportation Committee
 - History Committee Chair for eons
- Faithful Prayer Breakfast Attendee
- *Building Washington* history book committee



Quick Bio

- Grew up in New York City in Archie Bunker's (fictional) neighborhood in the Flushing section of Queens
- Graduated with a Bachelor of Engineering from The Cooper Union School of Engineering, New York City in 1970
- Emigrated to northern Idaho in 1970
- Career Path
 - Northern Idaho Positions
 - Colfax Public Works Director
 - City of Olympia
 - Transportation Improvement Board
 - County Road Administration Board



Quick Bio

- Bob's Year as Chapter President Included Two Joint Conferences
 - Spring Conference in Blaine – with ACEC
 - Fall Convention in Penticton, British Columbia – with the BC Chapter
- Married to Joy Phillips since 1984
- Two great children -David and Jane
- Lifelong railroad buff

