Fischer, Steven M CIV USCG D13 (USA)

From: D13-SMB-D13-BRIDGES
Sent: Thursday, March 31, 2022 9:12 AM
To: Fischer, Steven M CIV USCG D13 (USA)
Cc: Harris, Brendan J CDR USCG D13 (USA); Moriarty, John F CIV USCG D13 (USA); Smith, Carl F CTR (USA)
Subject: FW: [Non-DoD Source] Comments on Columbia River Bridge - Tunnel
Attachments: USCG Clearance.pdf; USCG .pdf

FYI

Danny Mc
X7234

From: Bob ortblad [redacted]
Sent: Wednesday, March 30, 2022 2:00 PM
To: D13-SMB-D13-BRIDGES <D13-SMB-D13-BRIDGES@uscg.mil>
Subject: [Non-DoD Source] Comments on Columbia River Bridge - Tunnel

B. J. HARRIS, Commander
Chief, Waterways Management Branch
Coast Guard District Thirteen
By direction of the District Commander
U.S. Coast Guard

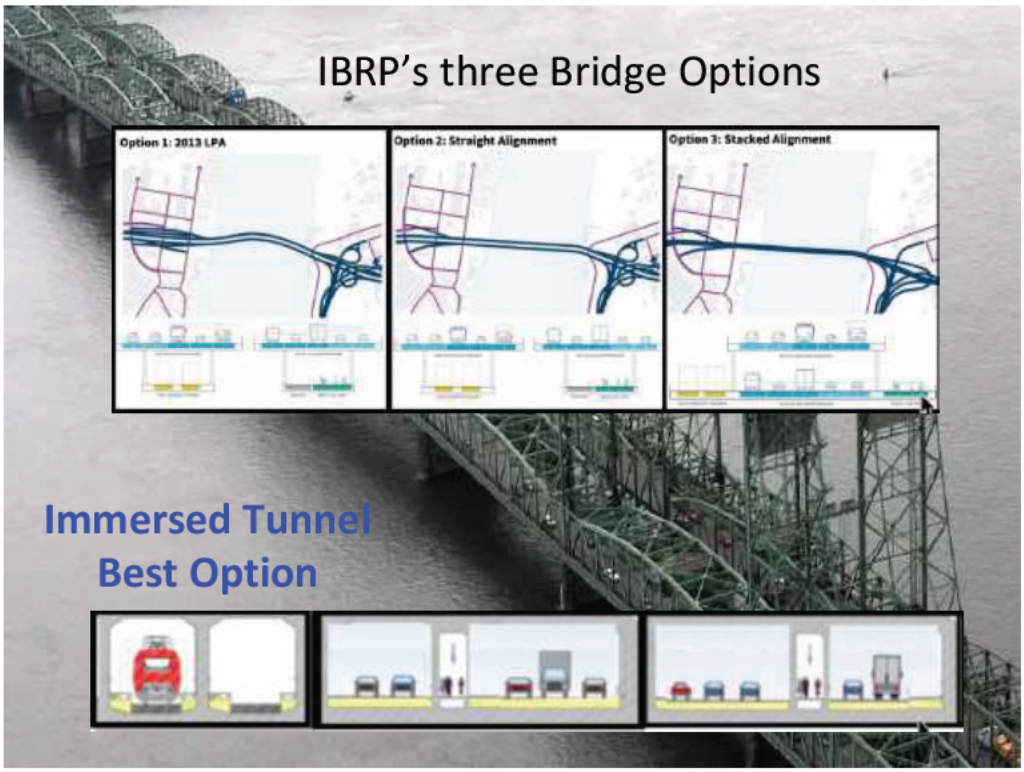
Comments on Columbia River Bridge - Tunnel

Please review the attached comments.

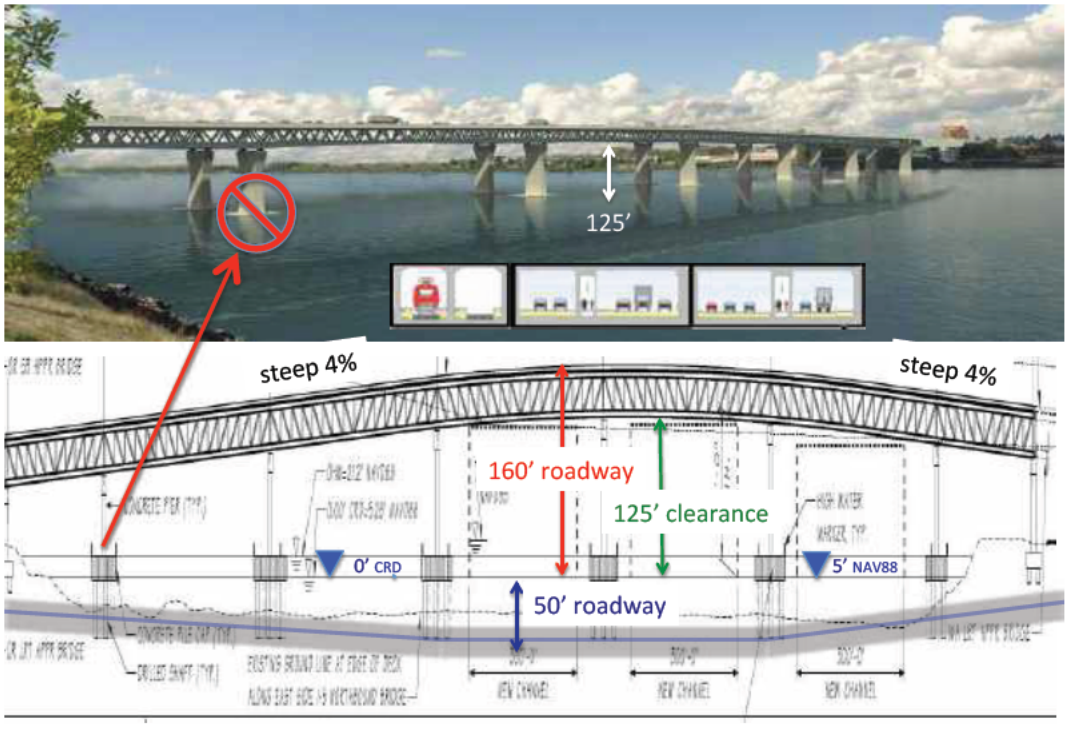
Other comments can be reviewed at [redacted]

Respectfully
Bob Ortblad MSCE, MBA

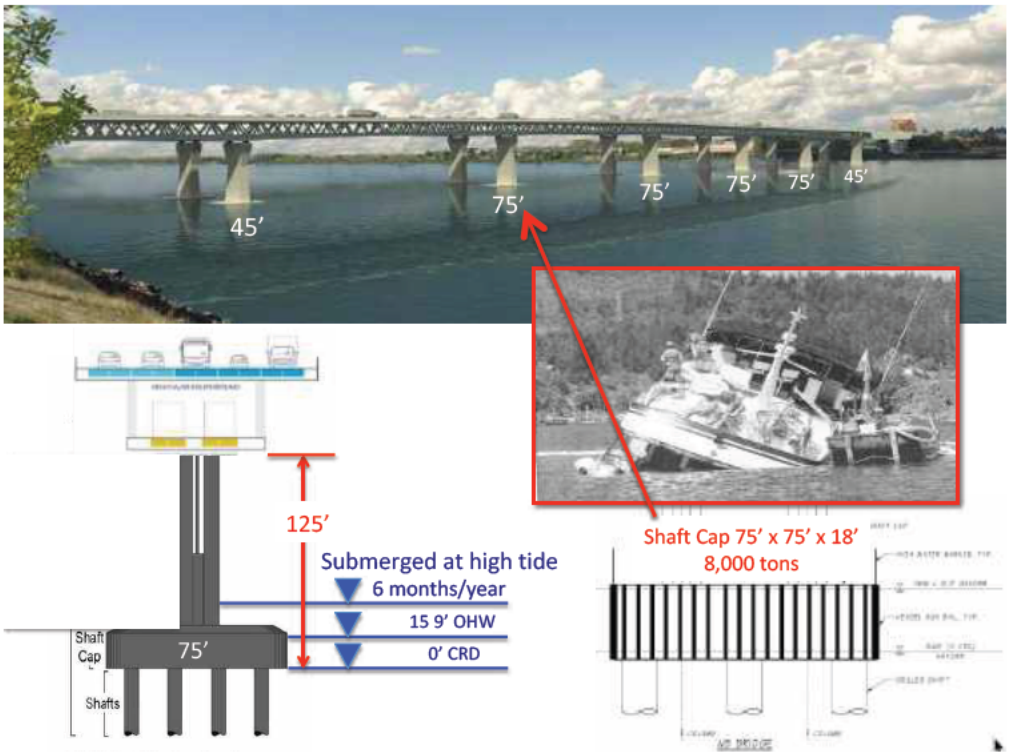
Please call if you have any questions.
[redacted]



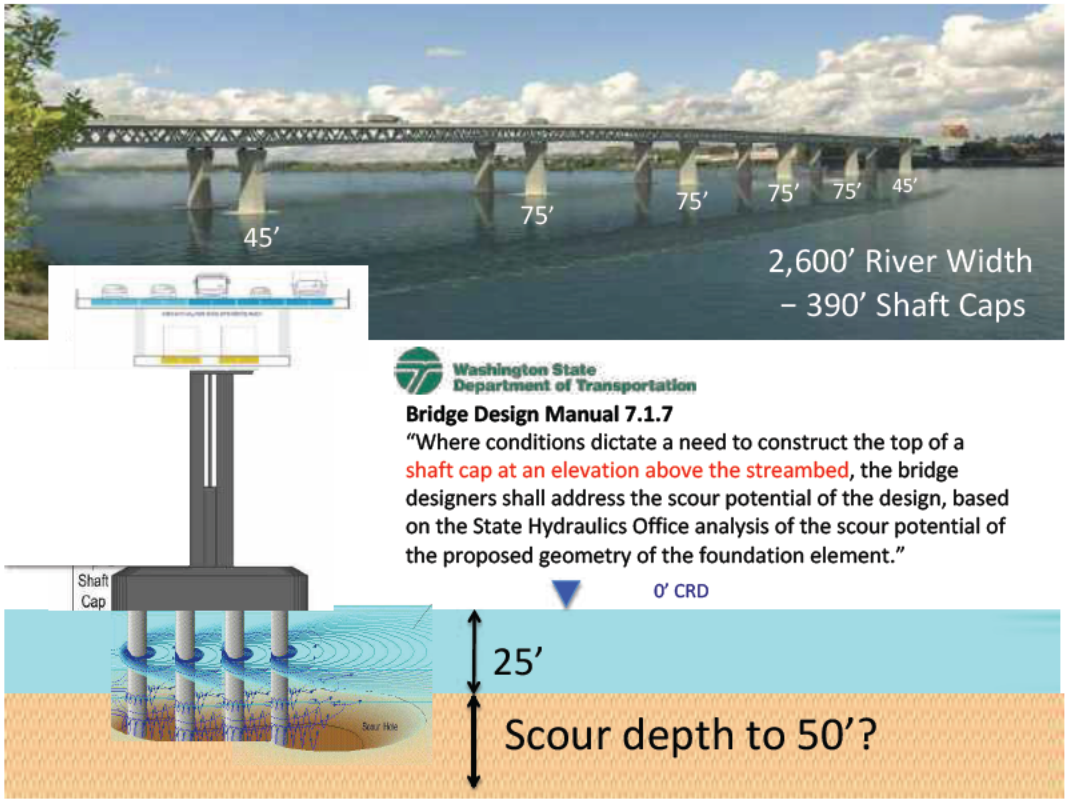
A new bridge will have two navigations hazards, the vertical clearance and the sometimes-submerged shaft caps. An immersed tunnel will have no navigation hazards.

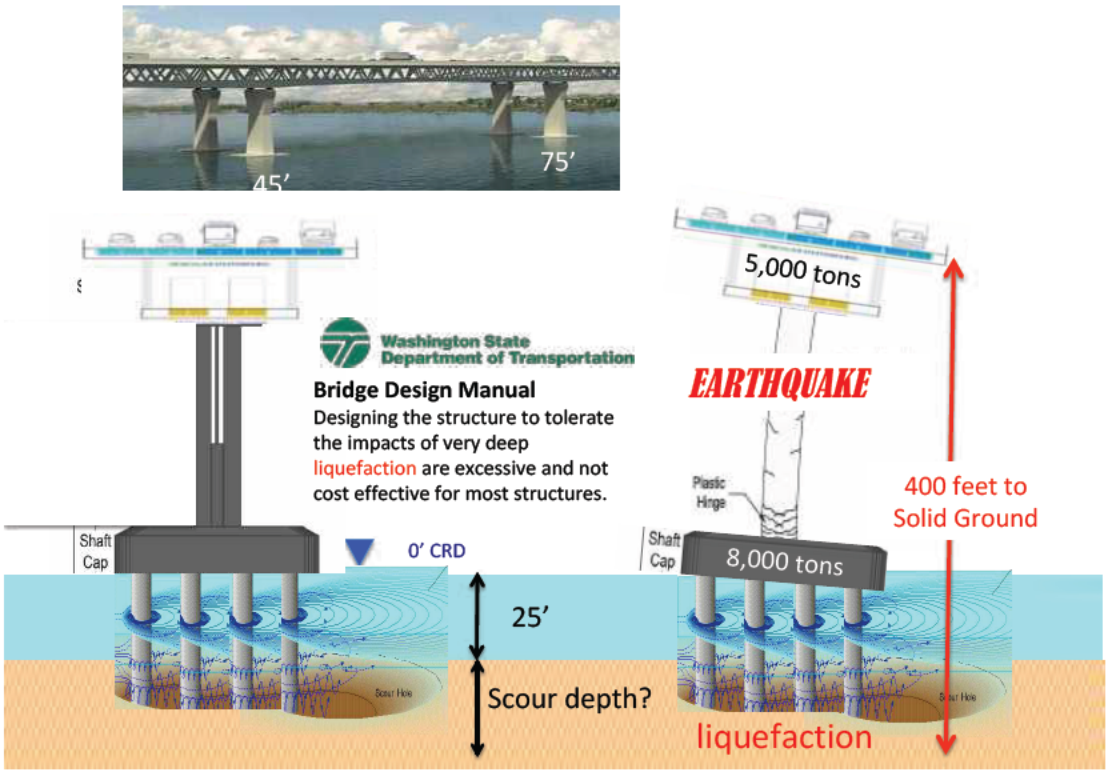


Immersed Tube Tunnel

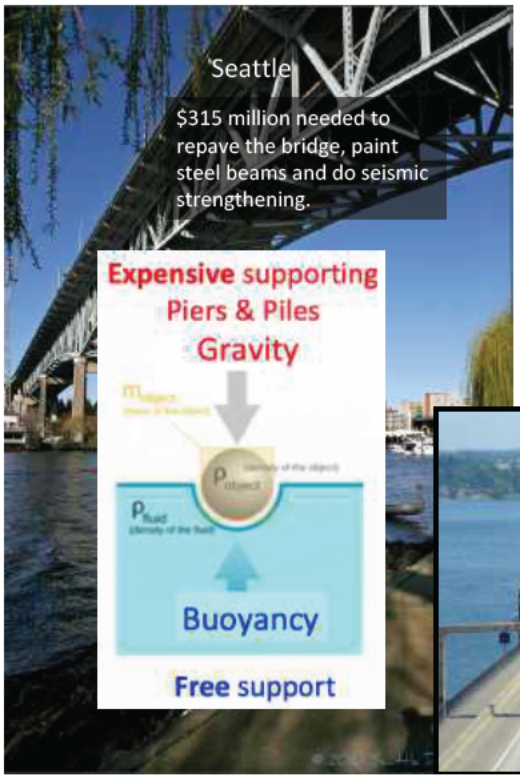


Shaft caps will be submerged at high tide 6 months of the years and a danger to navigation. These caps and drilled shafts (piles) will also narrow the river width by 390 feet (15%) and potentially create deep scour holes under flood condition.



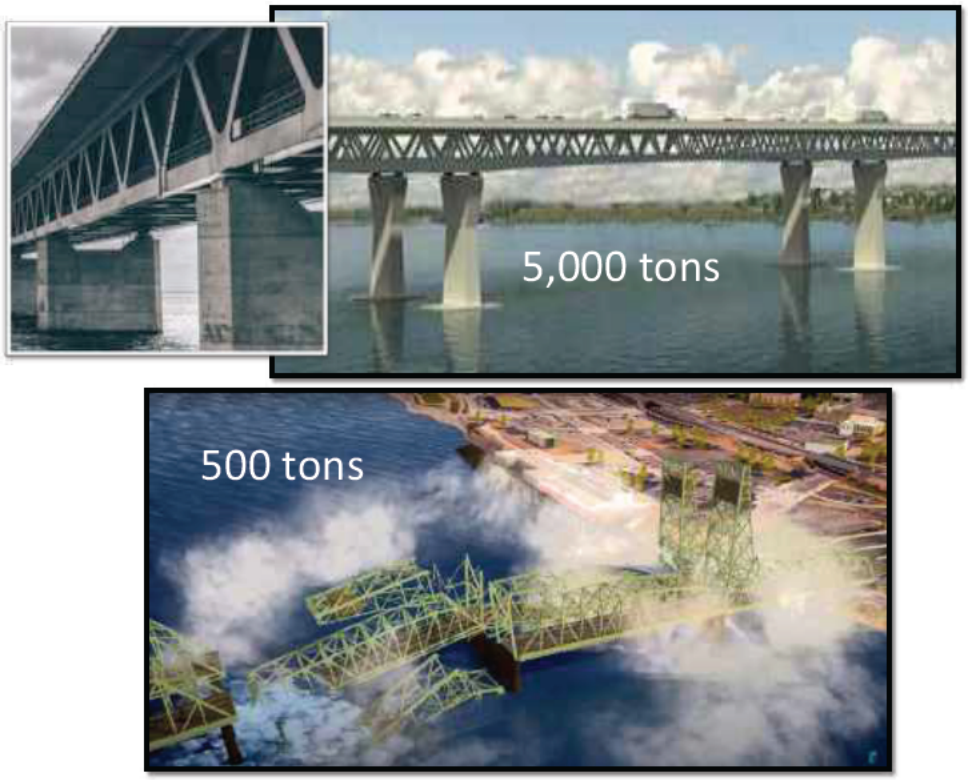


A 9.2 earthquake will sway massive bridge trusses 400 feet from solid ground. Combined with scour a worst case could be bridge failure.



A steel truss bridges are expensive to build or upgrade for earthquake resistance and are costly to maintain.

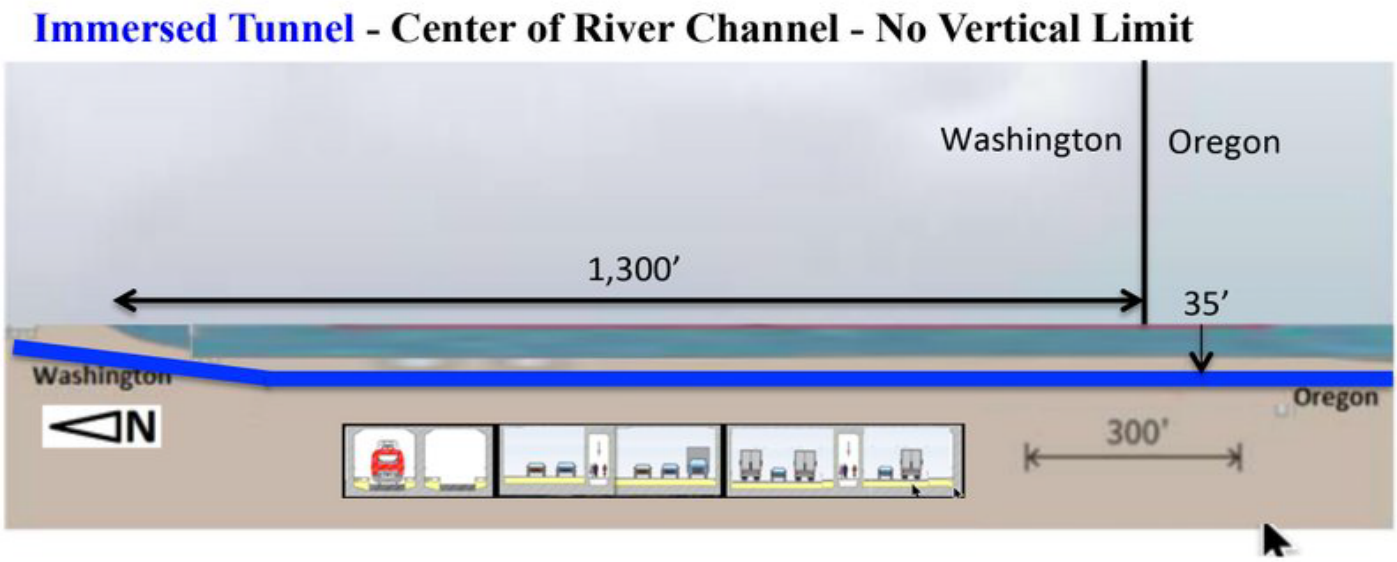
Buoyancy makes floating bridges & immersed tunnels almost earthquake proof.

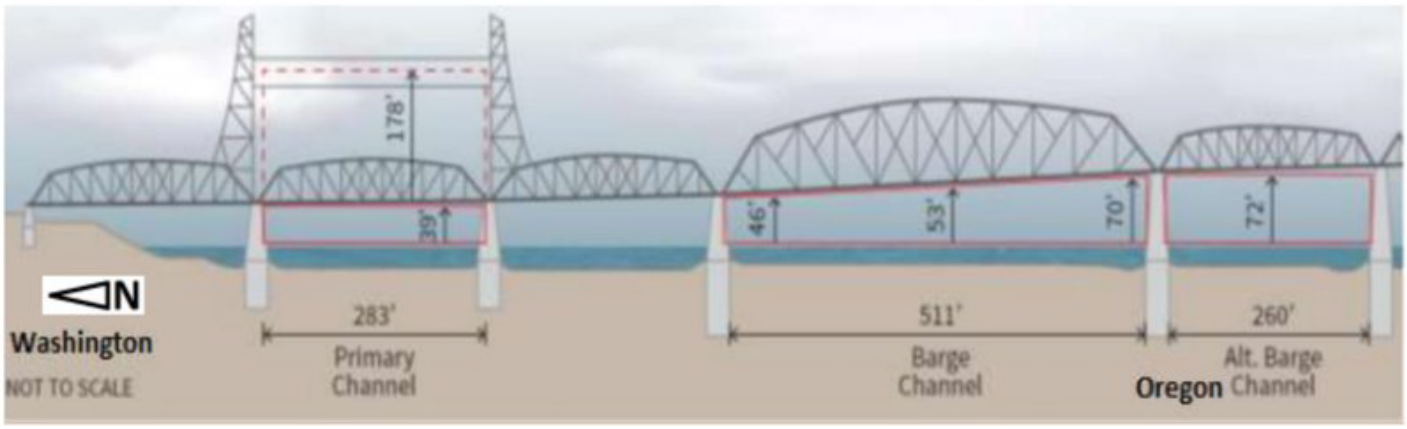


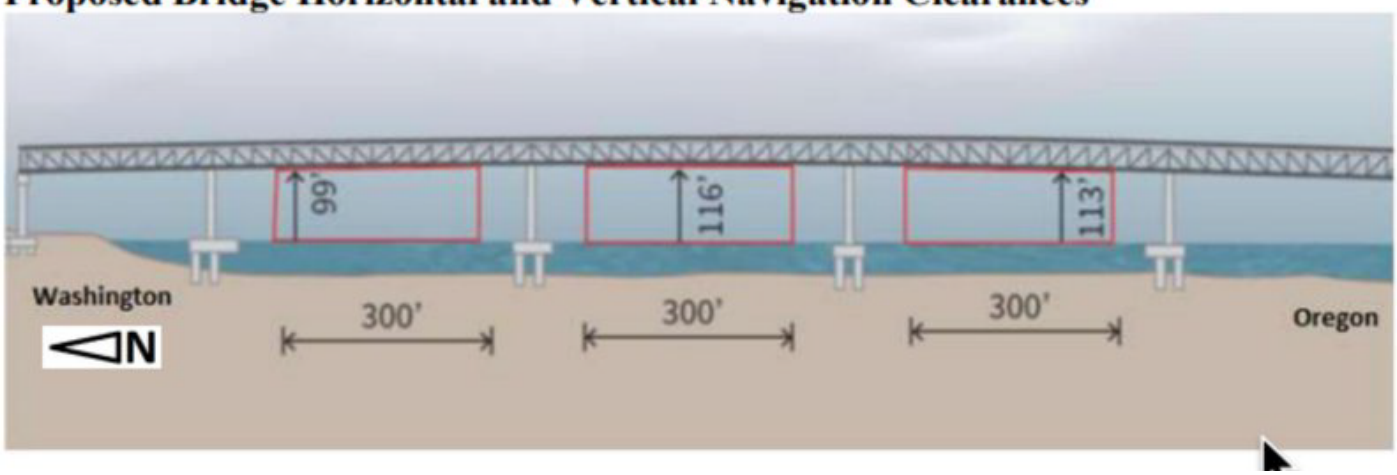
Why build a new bridge with trusses ten-time heavier and more difficult to support in a 9.2 earthquake?
https://www.columbian.com/news/2021/nov/09/video-shows-what-earthquake-would-do-to-interstate-5-bridge/

Bouyancy make an immersed tunnel ten-time more earthqauke resistant.
https://www.youtube.com/watch?v=h19TQzw8H1w

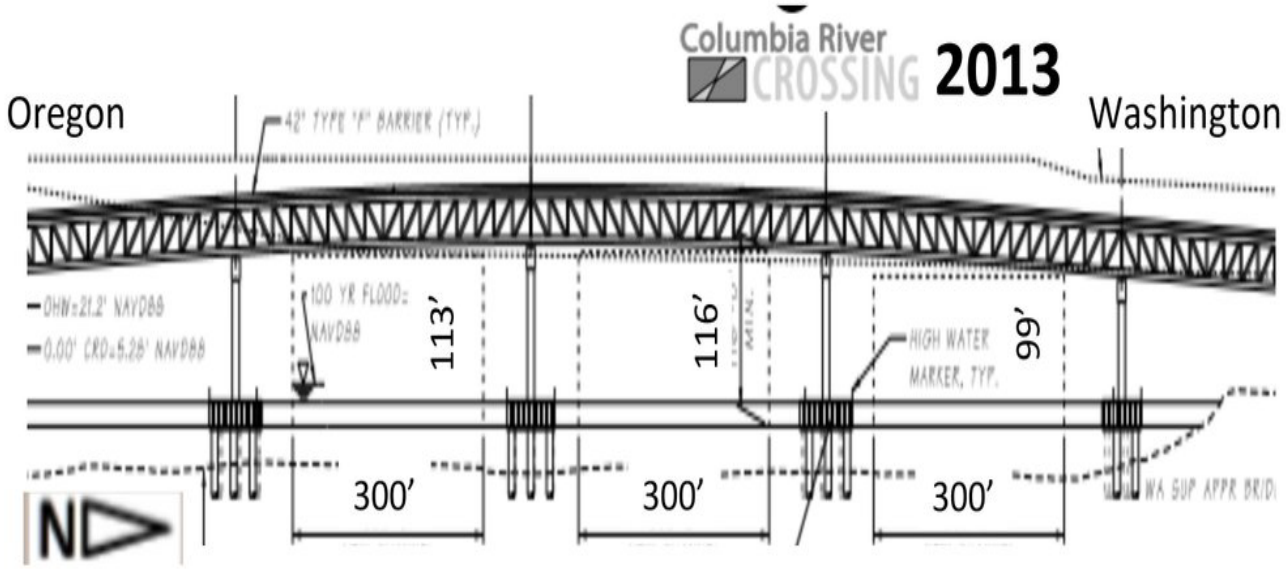
An immersed tunnel gives unlimited vertical clearance and a single channel in the center of the river.

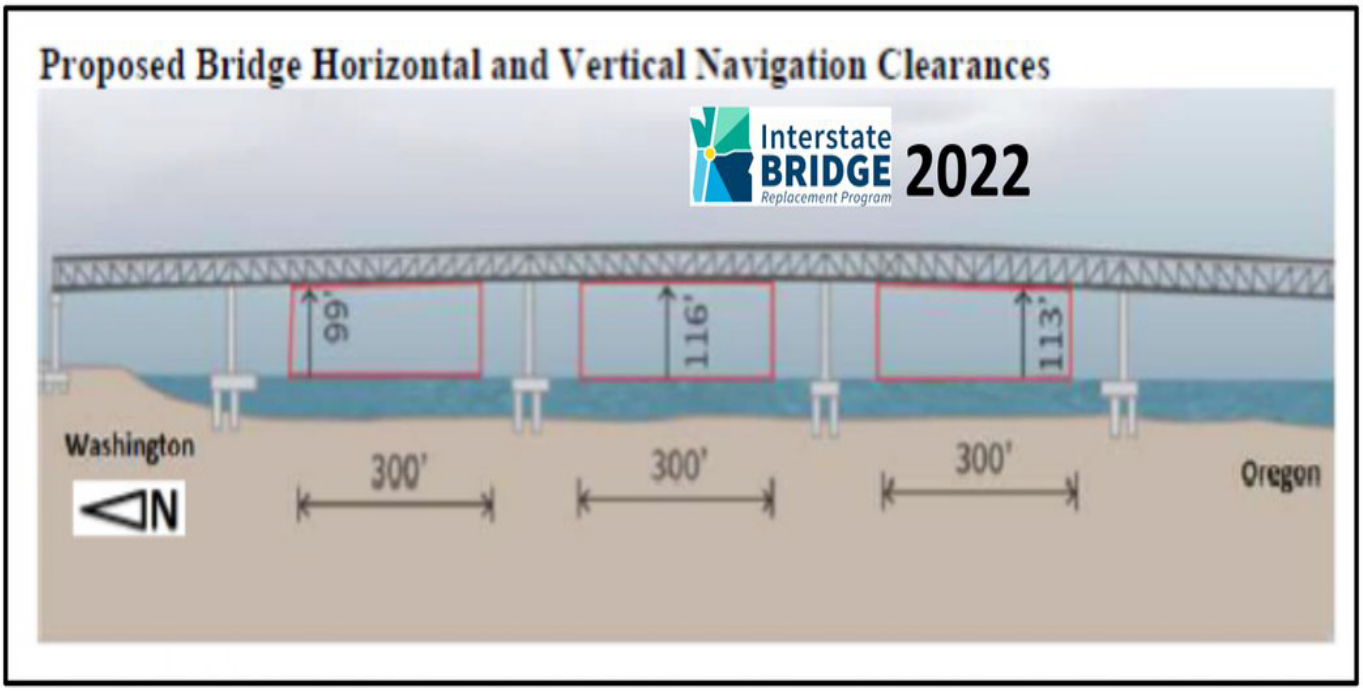






The IBR has spent $35 million resurrecting the CRC design. Bridge clearance submitted to the US Coast Guard is exactly the same as the 2013 CRC design.

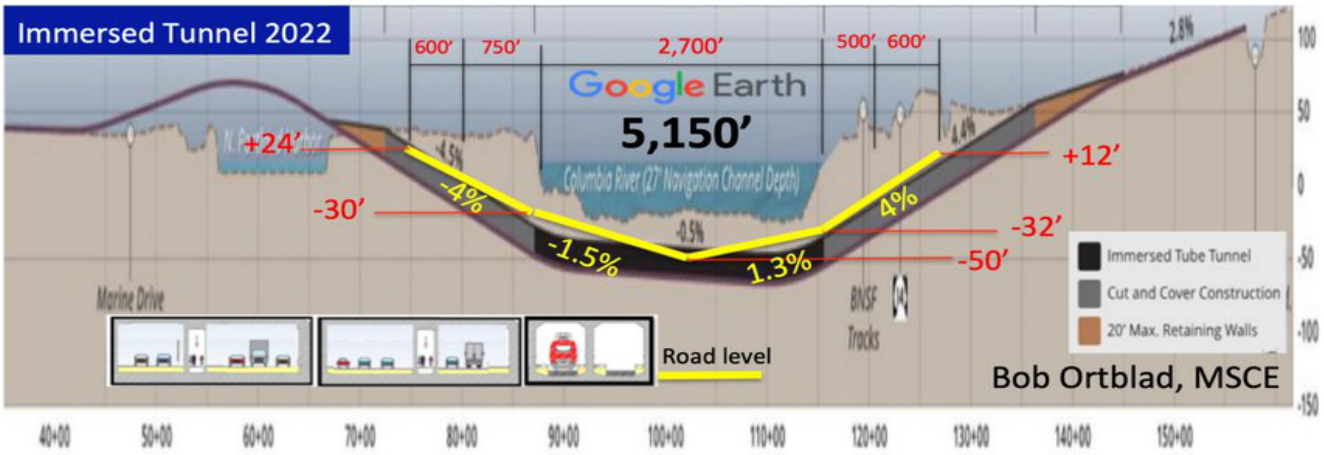




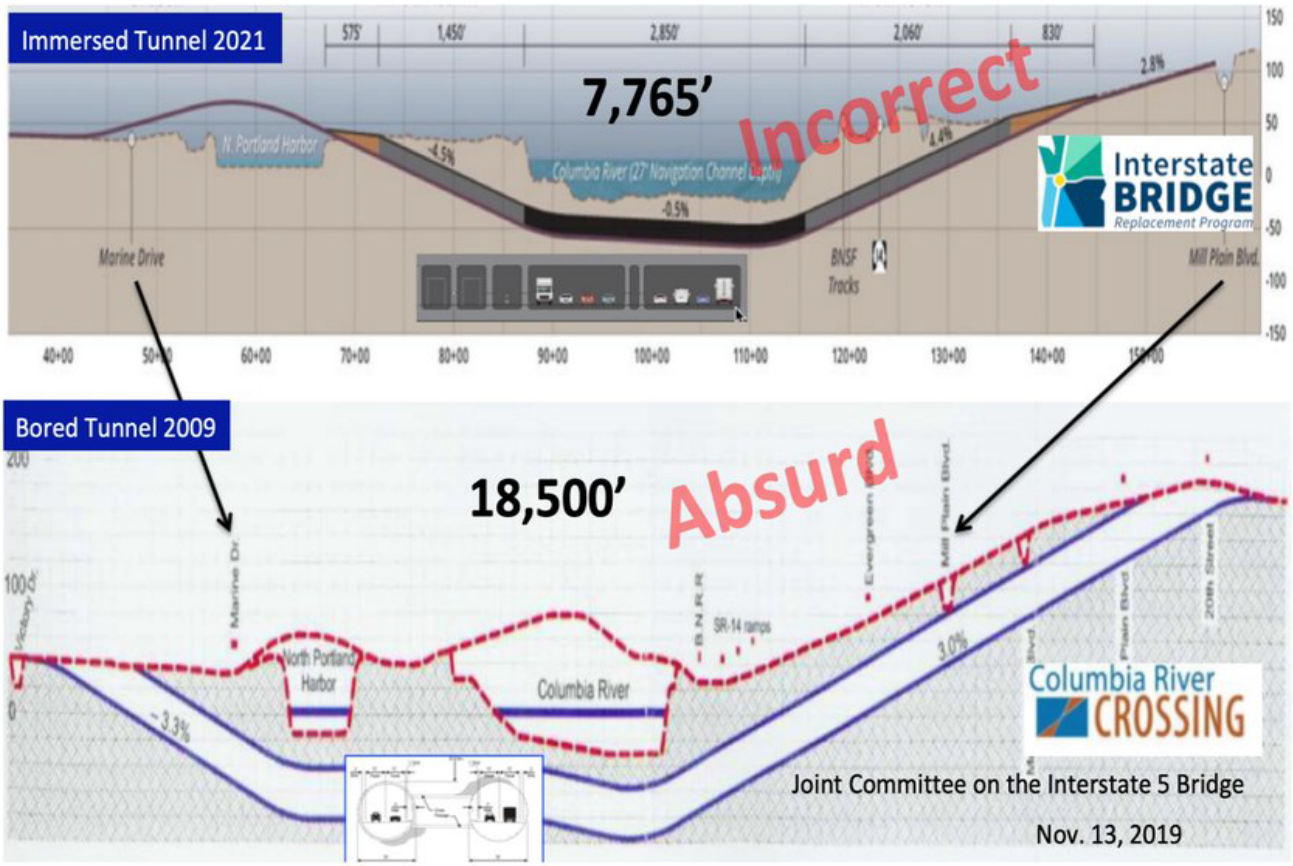
The CRC disqualified a tunnel with an absurd bored tunnel.

The IBR dismissed an immersed tunnel that goes under a channel location that is a 1,000 feet from the correct location at the center of the river.

An immersed tunnel can be 35% shorter, 65% less cut & cover, and connect to current interchanges.



Negligent engineering or intentional deception



B. J. HARRIS, Commander
Chief, Waterways Management Branch
Coast Guard District Thirteen
By direction of the District Commander
U.S. Coast Guard

Comments on Columbia River Bridge - Tunnel

The Columbia River is shallow (27 feet) but has 250 feet of soft riverbed. It is a difficult site to build a seismic resistance bridge, but an ideal site for an immersed tube tunnel. Unfortunately, the IBR is recycling a 10-year-old bridge design called the “Columbia River Crossing”. The IBR has issued a misleading “Tunnel Concept Assessment” to disqualify an immersed tunnel. The “Tunnel Concept Assessment” is worthless because it evaluated a tunnel under the **bridge lift channel** that would become redundant. An immersed tunnel allows a **center river channel**, plus excavation quantities 80% less than IBR’s misleading estimates.

Please review the attached file and more analysis at Twitter @BOrtblad.

Bob Ortblad MSCE, MBA
[redacted]

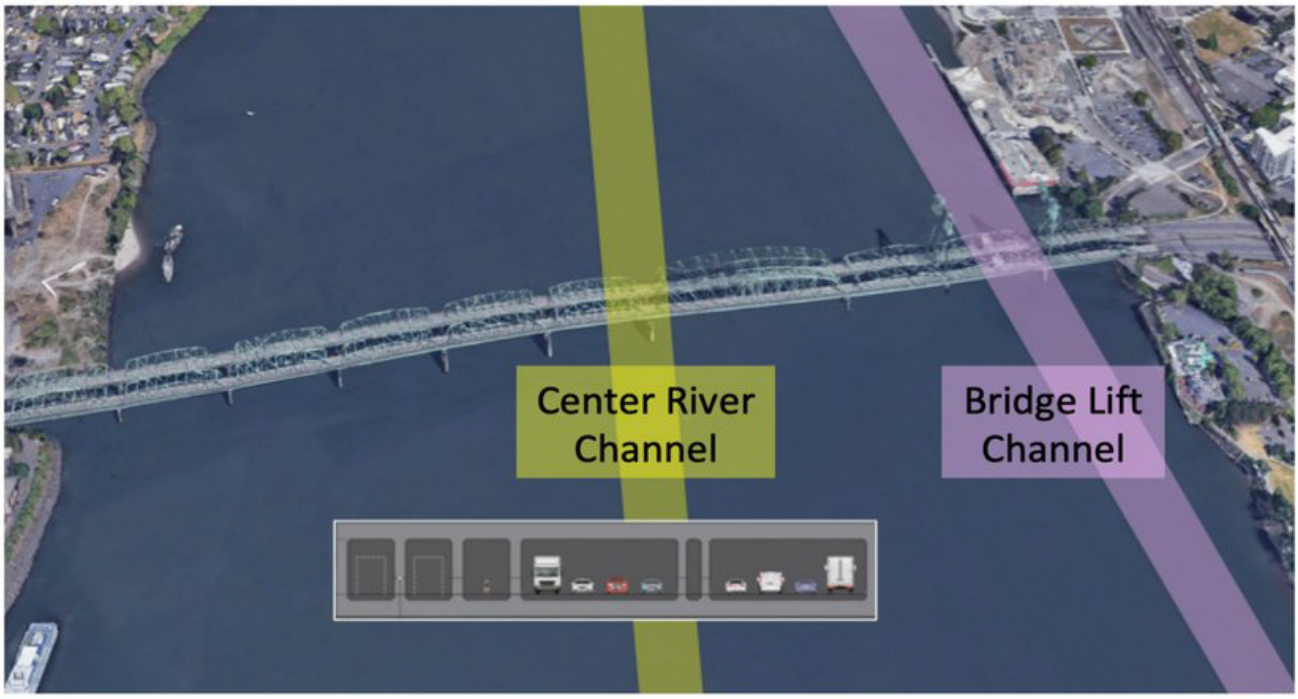
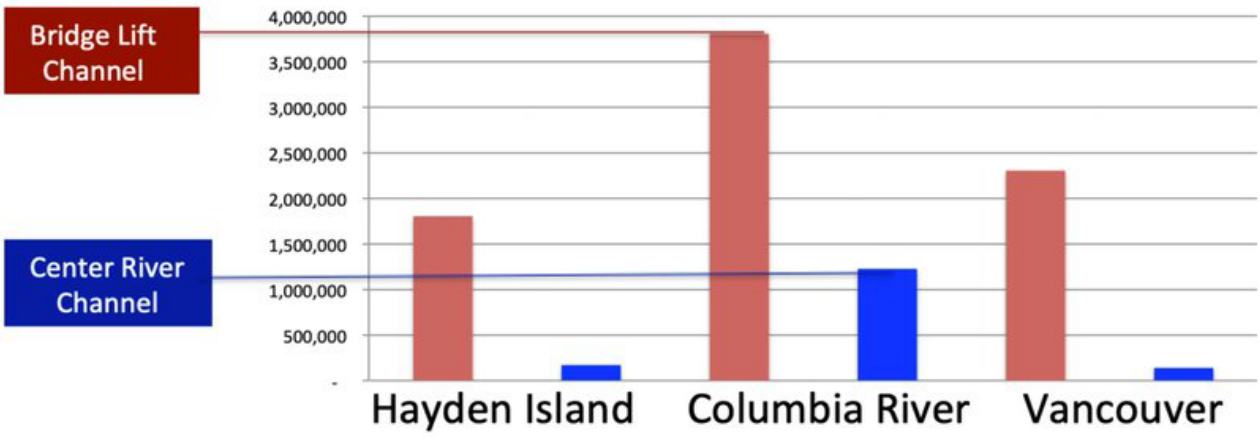


Table 1. Preliminary Tunnel Excavation Quantities **Upstream Alignment**

Location	Bridge Lift Channel	Center River Channel
Hayden Island (on land)	1,800,000 yd^3	169,000 yd^3
Columbia River (in water)	3,800,000 yd^3	1,223,000 yd^3
Vancouver (on land)	2,300,000 yd^3	138,000 yd^3
Total	**100% 7,900,000 yd^3**	**19% 1,530,000 yd^3**



Fischer, Steven M CIV USCG D13 (USA)

From: Bob ortblad [redacted]
Sent: Tuesday, April 26, 2022 2:48 PM
To: D13-SMB-D13-BRIDGES
Subject: Re: [Non-DoD Source] Comments on Columbia River Bridge - Tunnel

Steve Fisher

Attached is a little 1958 history I hope you find interesting.

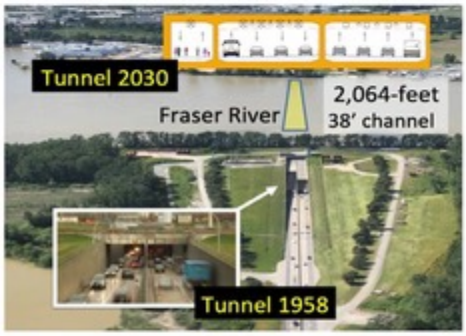
Best
Bob Ortblad

[redacted].

The shallow Columbia River is an ideal immersed tunnel site.

In **1958** Washington and Oregon celebrated the opening of the second Columbia River Bridge, a twin of the first 1917 steel-truss bridge. (**27-foot** river depth)

In **1958** British Columbia opened a four-lane immersed tunnel under the **38-foot** deep Frasier River ship channel. A new eight-lane tunnel (two for BRT) will replace this tunnel in 2030.



In **1958** Havana, Cuba opened a four-lane immersed tunnel under its **45-foot** deep port channel.

*Note both 1958 tunnels are much deeper than the Columbia River's **27-foot** depth.*

Bob Ortblad MSCE, MBA

On Apr 26, 2022, at 1:51 PM, D13-SMB-D13-BRIDGES <D13-SMB-D13-BRIDGES@uscg.mil> wrote:

Thanks for the comment Bob.

Respectfully

Steve Fischer
Bridge Administrator
U.S. Coast Guard
Thirteenth District