PUBLIC COMMENTS FOR IBR PROGRAM EXECUTIVE STEERING GROUP

Received between July 14 – September 13, 2021

Stephen A. Fesler

7/15/21

Our states need to stop obsessing with highway expansion. It's killing us financially, in public health, and our environment. We ought to be looking at tolls on the I-5 bridge, very wide pedestrian and bike paths, light rail, and a smaller roadway footprint for cars. The road-building and sprawl era must end.

Bob Ortblad

9/10/21

ESG Public Comment
Letter: Tunnel would be safer than bridge

By Bob Ortblad, Seattle

The Columbian, published: August 24, 2021

On Sunday, Feb. 14, 2021, Antonio Amaro Lopez on his way home from work plunged off the Interstate 205 Bridge into the Columbia River. Antonio was driving less than 50 mph, hit an ice patch, skidded and jumped a Jersey barrier.

Ice and the bridge's 2.7 percent downgrade extended his stopping distance more than 10 times. The I-205 Bridge is curved, so Antonio slid across four lanes before hitting a snow ramp that launched his SUV over a Jersey barrier into the river.

Go Safe Labs ranked the I-205 Bridge as the eighth most accident-prone site in the country, with an accident every three days.

A new I-5 Columbia River bridge will be even more dangerous. The 10-year-old $200 million Columbia River Crossing bridge design has a 4 percent downgrade, curvature similar to the I-205 Bridge, a shaded northern exposure that will retain black ice, and sight distances much shorter than stopping distances in foggy, wet or icy conditions.

The Interstate Bridge Replacement Program administration is eager to recycle the Columbia River Crossing bridge design. The IBR has spent hundreds of thousands of dollars on bridge engineering consultants to discount the possibility of a much safer river crossing design: an immersed tube tunnel.

Attachments included

* ADA compliant versions of the attachments can be made available upon request

David Rowe

9/10/21

I am attaching a comment for the Executive Steering Committee to review.
Dave Rowe

* ADA compliant versions of the attachments can be made available upon request

Sarah Iannarone

9/13/21

Attachments included

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Bob Ortblad

9/13/21

ESG public comment

IBR's "Tunnel Concept Assessment"

"I skate to where the puck is going, not where it has been". Wayne Gretzky

The Interstate Bridge Replacement (IBR) authority has wasted hundreds of thousands of dollars evaluating where the puck has been, not where it is going. Namely, it has made an outdated assumption about where the Columbia's barge channel would be located. It is this channel that an Immersed Tube Tunnel (ITT) must be submerged beneath as part of planning a new Columbia crossing. The IBR report lists 17 consultants and not one asked this most basic question!

Mistakenly, the IBR's ITT assessment evaluates the use of the existing Primary Channel under the current I-5

bridge lift span. But this channel is 200 yards closer to the river bank on the Vancouver side than it needs to be. A design based on this location necessitates a tunnel diving at an unusually steep grade from the Vancouver side. Thus, the IBR's use of such a mistaken location leads to its greatly inaccurate prediction of extra cost.

An ITT designed for a New Primary Channel nearer to the center of the river would be one third shorter portal to portal, have half the total grade, and require two-thirds less cut & cover construction. The IBR's ITT design is estimated to cost a whopping $3 billion. A more realistic estimate of an ITT at the right location would be $1 billion.

In fact, when planners designed a new bridge for a Columbia River Crossing, they used exactly this New Primary Channel location 200 yards closer to the center of the river.

Thus, IBR has wasted money evaluating an ITT at the wrong site. The IBR should invest a few more thousand evaluating where the tunnel (puck) is going. The IBR staff and consultants should avoid the trap of being prisoners of their experience, decades of bridge-building. Vancouver, Canada, hired international ITT experts to evaluate a new Fraser River ITT. The IBR should hold to world-class design competition between teams of bridge engineers and ITT engineers. Let the best solution win.

As a background to my role, I am a concerned citizen with a lengthy career in engineering and cost accounting. I have sought to give input to planners in a transparent process. I was encouraged when Greg Johnson, IBR administrator, asked for a meeting recently to discuss a Columbia River ITT. However, I was informed that IBR was simply to give me a 35-minute presentation of why an ITT will not work. The IBR administrator, his assistant, and six consulting engineers would then take my questions, but I would have no time allotted for my presentation. The IBR team also refused my request to include on my side an international ITT expert and environmental attorney to add to the discussion.

In my solo role during the actual meeting, I questioned the IBR presentation findings. However, I was told categorically that IBR would make no further evaluation of an ITT! Participants explained that IBR had "spent hundreds of thousands of dollars on experts" and the decision against an ITT was firm. This step appears to be an attempt to choke off any further discussion. However, the IBR administrator, Greg Johnson, did agree to meet in any public forum to defend this decision. I welcome this further opportunity for a fair, public debate.

Bob Ortblad MSCE, MBA

Attachments included

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The Columbian

Letter: Tunnel would be safer than bridge

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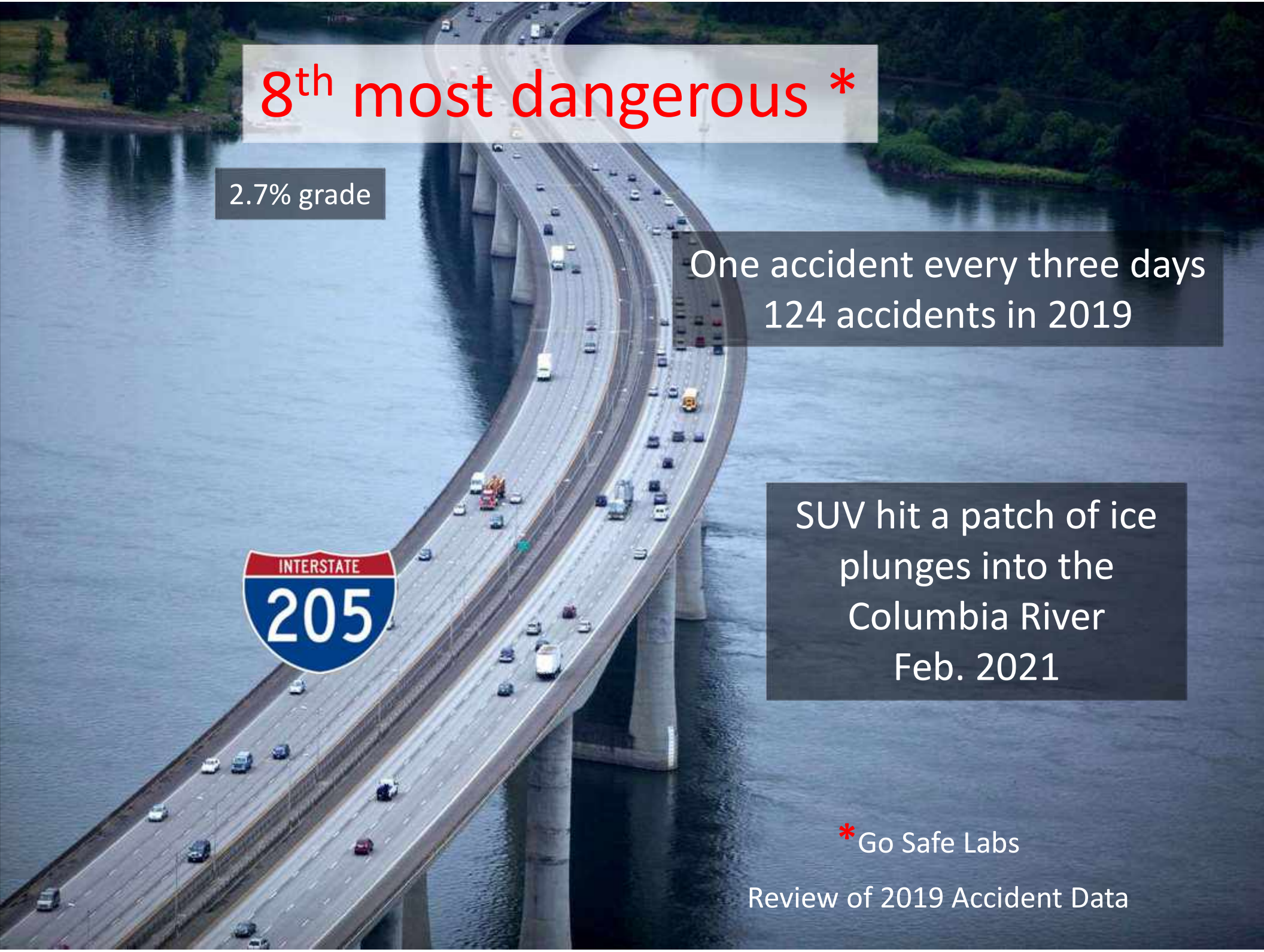
Vancouver WA
365 days
-172 frost fee days
193 possible black ice days


8th most dangerous *
2.7% grade
One accident every three days
124 accidents in 2019
INTERSTATE
205
SUV hit a patch of ice
plunges into the
Columbia River
Feb. 2021
*Go Safe Labs
Review of 2019 Accident Data

BLACK ICE

Freezing
Fog
Snow
Rain

-4% grade

Curvature

Shaded northern exposure

Limited sight distance

CRC High Bridge

Black Ice

-4% grade

Curvature

Shaded northern exposure

Limited sight distance

INTERSTATE 5

CRC High Bridge

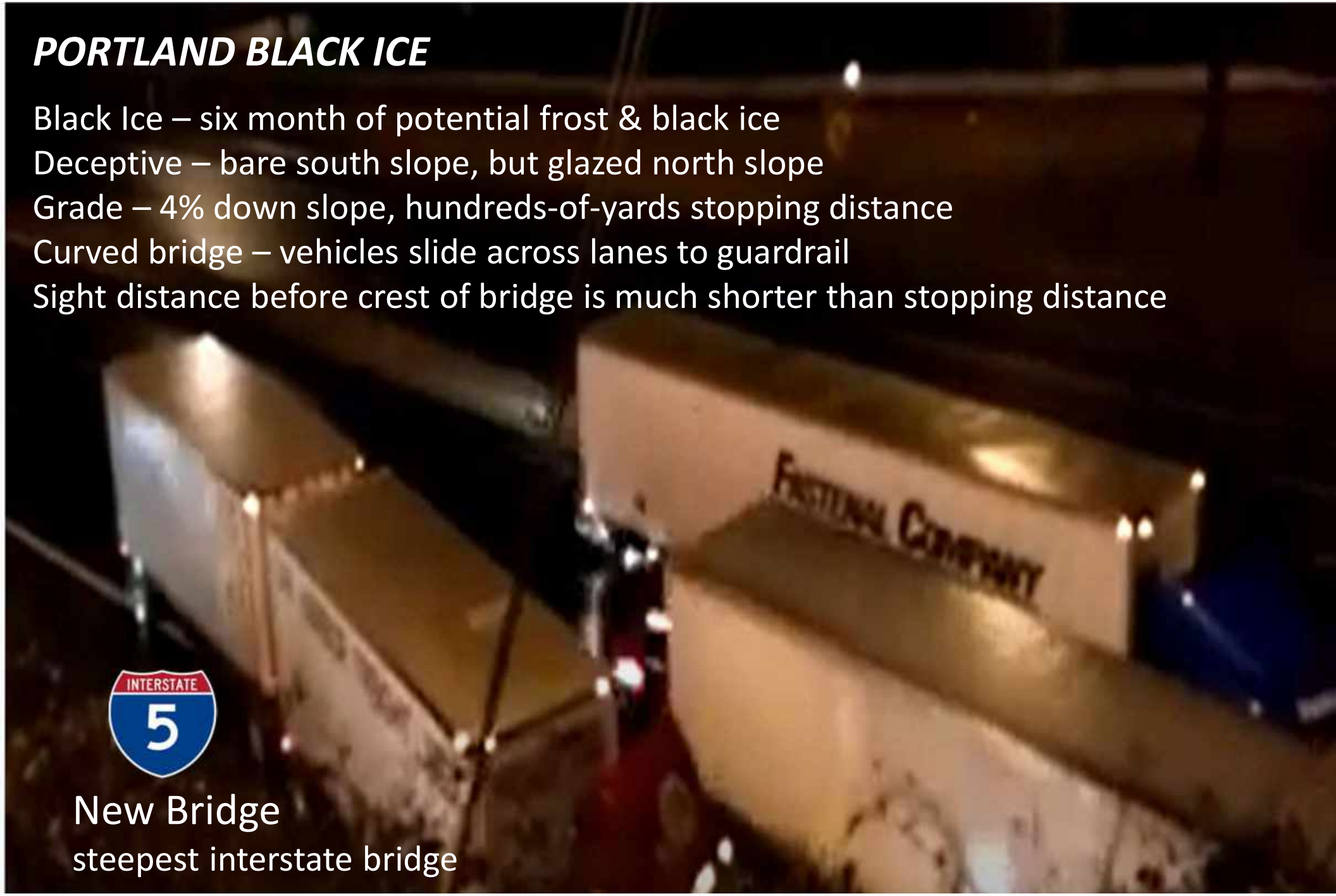
BLACK ICE

Northern exposure

https://www.youtube.com/watch?v=HEbYPAOVt8Q

PORTLAND BLACK ICE

Black Ice – six month of potential frost & black ice
Deceptive – bare south slope, but glazed north slope
Grade – 4% down slope, hundreds-of-yards stopping distance
Curved bridge – vehicles slide across lanes to guardrail
Sight distance before crest of bridge is much shorter than stopping distance



New Bridge
steepest interstate bridge

South Side of Bridge

North Side of Bridge

Required stopping distance

Unsafe – sight distance less than stopping distance

Sight distance

Vertical curve radius

Hazard

-4%

Winter sun rays melts southern exposure

Numbers show Glenn Jackson Bridge a hot spot for accidents

https://katu.com/news/local/numbers-show-glenn-jackson-bridge-a-hot-spot-for-accidents

Family fears loved one crashed off I-205 bridge during winter storm

https://www.kgw.com/article/news/local/portland-oregon-crash-glenn-jackson-bridge-ice-storm/283-d41bcc69-2b8d-459c-b9c7-e27ddb6fef36

ODOT report
“crossed four lanes of traffic
and struck the barrier”


BLACK ICE
- VERY HARD TO SEE
- SLICK CONDITIONS
- ESPECIALLY ON BRIDGES/OVERPASSES


Fog


Wind


Rain
Hydroplaning

Immersed Tube Tunnel
Weather Protected

Wind, Fog,
Rain & Snow

Trelleborg - How to build an immersed tunnel
https://www.youtube.com/watch?v=2Xkyyc9PlQA

Trip through Tingstad Tunnel, Gothenburg
https://www.youtube.com/watch?v=KoEBbmecd88

Trip through Marieholm Tunnel before its Dec. 16 opening, Gothenburg
https://www.youtube.com/watch?v=BT9s2Pf9Wms&feature=youtu.be

Construction of the Marieholm Tunnel, Gothenburg
https://www.youtube.com/watch?v=2kcAIBFCz8w&feature=youtu.be

Launch of the Marieholm Tunnel elements, Gothenburg
https://www.youtube.com/watch?v=JC4mRIgwXU0

Elizabeth River Tunnel, Norfolk, VA.
https://www.youtube.com/watch?v=NsNBdPFMuQY

George Massey Crossing Tunnel Concept, Vancouver, Canada
https://www.youtube.com/watch?v=8At88ti-yFA

Immersion Tunnel Coatzacoalcos by Volker Construction International, Mexico
https://www.youtube.com/watch?v=VFWkoZMja0k

DERSA - Santos Guarujá Immersed Tunnel Project, Brazil
https://www.youtube.com/watch?v=du8KZob7Pkw

Busan-Geoje Fixed Link in South Korea
https://www.youtube.com/watch?v=-aykpUulHJo

Immersed Tube Tunnel better than a New High Bridge

David Rowe September 10, 2021

Regarding Interstate Bridge Replacement Program

A low profile I-5 draw bridge would be more visually appealing for Vancouver waterfront businesses and restaurants than a **tall** double deck bridge as proposed by the IBR Program. This year Vancouver waterfront was voted #13 in Fodor's Travel website. I cannot imagine Vancouver would keep that rank if a tall Portland type Marquam Bridge was built on the waterfront. A lower profile I-5 bridge would be vastly more appealing. The tall CRC designed bridge was to avoid many bridge lifts. Just changing the BNSF bridge would reduce over 90% of the bridge lifts and improve tow boat safety. The modification to the BNSF bridge was recommended in 2002 by the US Coast Guard for safety reasons.

At this time the IBR design options show light rail transit included in the new bridge into downtown Vancouver. Light Rail Transit would be a good addition to the city of Vancouver. Future light rail extensions would need costly and disruptive construction in Vancouver to expand into Clark County.

I asked the IBR Executive Steering Committee on July 15 if the existing railroad owners in Clark County have been included in the IBR study.

The Vancouver-Portland freight rail line intersection is the most congested rail intersection on the West Coast. Do you ever wonder why the freight locomotives idle for hours in Vancouver?

Burlington Northern-Santa Fe and Union Pacific might be open to solutions to this bottleneck. Passenger rail and freight movement have common solutions. Regional passenger rail service is needed for crossing the Columbia River to reduce climate change. And would reduce highway travel on the I-5 Bridge and Rose Quarter. ***The Cascades*** train is a 15 minute train ride from Vancouver to Portland every day. High Speed Rail can also be a future transportation solution for I-5 freeway congestion. Adding additional rail capacity to existing rail corridors is less costly than adding freeway lanes or expanding light rail. A public-private solution is possible and IBR program should study this reasonable solution.

A solution to climate change is to add electric passenger trains to the existing rail corridors from Battle Ground, Ridgefield and Camas. The reduction of fossil fuel is enormous. A 40 passenger diesel bus consumes one gallon of diesel to go about 5.5 miles. An electric bus uses 2.3 KWH per mile, which is equivalent to 27 mile per gallon. A 150 passenger electric rail car uses about 3.5 KWH of electricity per mile. Stadler battery powered rail cars are running in Germany where they are moving away from fossil fuel economy. Electric passenger rail service needs to be studied by the Interstate Bridge Replacement Program.

Dave Rowe

9/13/2021

To: Executive Steering Group
Interstate Bridge Replacement Program

Dear Members of the Executive Steering Group,

I want to point you toward a letter submitted to you recently from Oregon's leading environmental groups - 1000 Friends of Oregon, Climate Solutions, Oregon Environmental Council, and Oregon League of Conservation Voters - which outlines their goals for a future river crossing. The Street Trust supports their letter. They were leading Oregon's environmental revolution four decades ago when we managed to reach a bipartisan consensus to protect our place for future generations and we are grateful for their activation at this critical juncture today. We truly are all in this moment together - the climate justice movement, transportation advocates, organized labor, business and industry, BIPOC and other at-risk and local communities, and government.

I'd like to reiterate a few of their demands of significant importance to The Street Trust and our members as well as respond to the "Memorandum: Context for Review of Dismissed Alternatives" released last week.

1) At this pivotal moment, we have a unique opportunity in Oregon to change trajectory and start constructing a different future for our residents and next generations. If we hope to reduce vehicle miles traveled (VMT) and reduce greenhouse gas emissions (GHG) then we must invest in a complete **multimodal mobility network that is safe, affordable, accessible, and low-carbon**.

2) The ongoing impacts of systemic racism have resulted in significant displacement in our region. We also know that Black, Brown and Indigenous communities are more reliant on walking, biking and public transit to get where they are going. **Prioritizing safe, affordable,**

accessible routes for non-motorists across this bridge will support vulnerable and trauma-impacted communities and increase equitable access to our region's transportation network and the connectivity and opportunity it brings.

3) Leadership and coordination are important, not just for effective project delivery (as the Urban Mobility Office is tasked with for highway building projects) for better outcomes from fiscal, social, and environmental perspectives. This is why **we cannot design a replacement interstate crossing and roadway expansion before we implement equitable system-wide pricing as a region, including the Columbia River crossing;** we need an accurate picture of what demand will actually be so we can right-size and fund the project equitably and with an eye toward fiscal responsibility.

4) This is also why **we must account for air pollution and GHG emissions of this project now at the planning stage, not only to ensure our investments are aligned with our climate action goals but to secure future prosperity.** Colorado's Transportation Commission is considering a planning rule that would require their state DOT and NPOs to measure and potentially offset the harmful climate effects of transportation projects. Their cost-benefit analysis found that a multimodal shift would not only be good from climate and safety perspectives but economic, as well, potentially yielding their state as much as $40B in economic benefit.[1]

5) **Don't dismiss rail too soon.** There may be growing pressure to move away from Light Rail Transit (LRT) as a viable mode alternative. We need to make our decisions boldly, based on best practices and good data, not in a spirit of retrenchment. Further, TST recently joined a compelling group of signatories that moved lawmakers to add $10B into the bill for High Speed Rail (HSR) which won support from the White House. I-5 through our region is a prime corridor for investment. It is unwise to dismiss HSR at this point as you've done in your Memorandum of Understanding, while there's so much legislation still being written.

[1]https://www.cpr.org/2021/09/09/climate-friendly-transportation-planning-economic-benefits/

We know that chaos that ensues in a leadership void. We need you collectively to step up with one voice on behalf of the better future we know is possible. Now is the time for us to invest in cleaner, more sensible mobility options along with more equitable, sustainable, transparent ways of paying for them. Now is the time for us to muster the same courage and bipartisan commitment that we once had for stopping urban sprawl and apply it to averting the climate crisis on our doorstep. Now is the time for you, the leaders of our region, to lead us in this work.

Onward in community,

Sarah Iannarone

Executive Director, The Street Trust

www.thestreettrust.org

Interstate BRIDGE Replacement Program

Immersed Tube Tunnel

Conceptual Assessment

July 2021

Meeting July 14, 2021

1 - Citizen
6 - WSP Consultants
2 - IBR Administrator & Assistant
3 – WSTC, two Staff, one Commissioner

Tunnel Concept Assessment

Interstate BRIDGE Replacement Program

Myth vs. Fact

Myth: A replacement bridge has already been designed.

Myth: A third bridge would eliminate the need to replace the Interstate Bridge.

Myth: Light rail transit has already been decided.

Myth: A tunnel can solve the Interstate Bridge transportation problems just as easily as a bridge.

Fact.

A tunnel cannot be feasibly built within the footprint of I-5 without eliminating important connections to Hayden Island, downtown Vancouver, and SR-14. It also comes with significantly more operational, environmental and historical resource impacts, and would cost more than a replacement bridge.

For more information about the suitability of an immersed tube tunnel, view the Tunnel Concept Assessment.

1 click

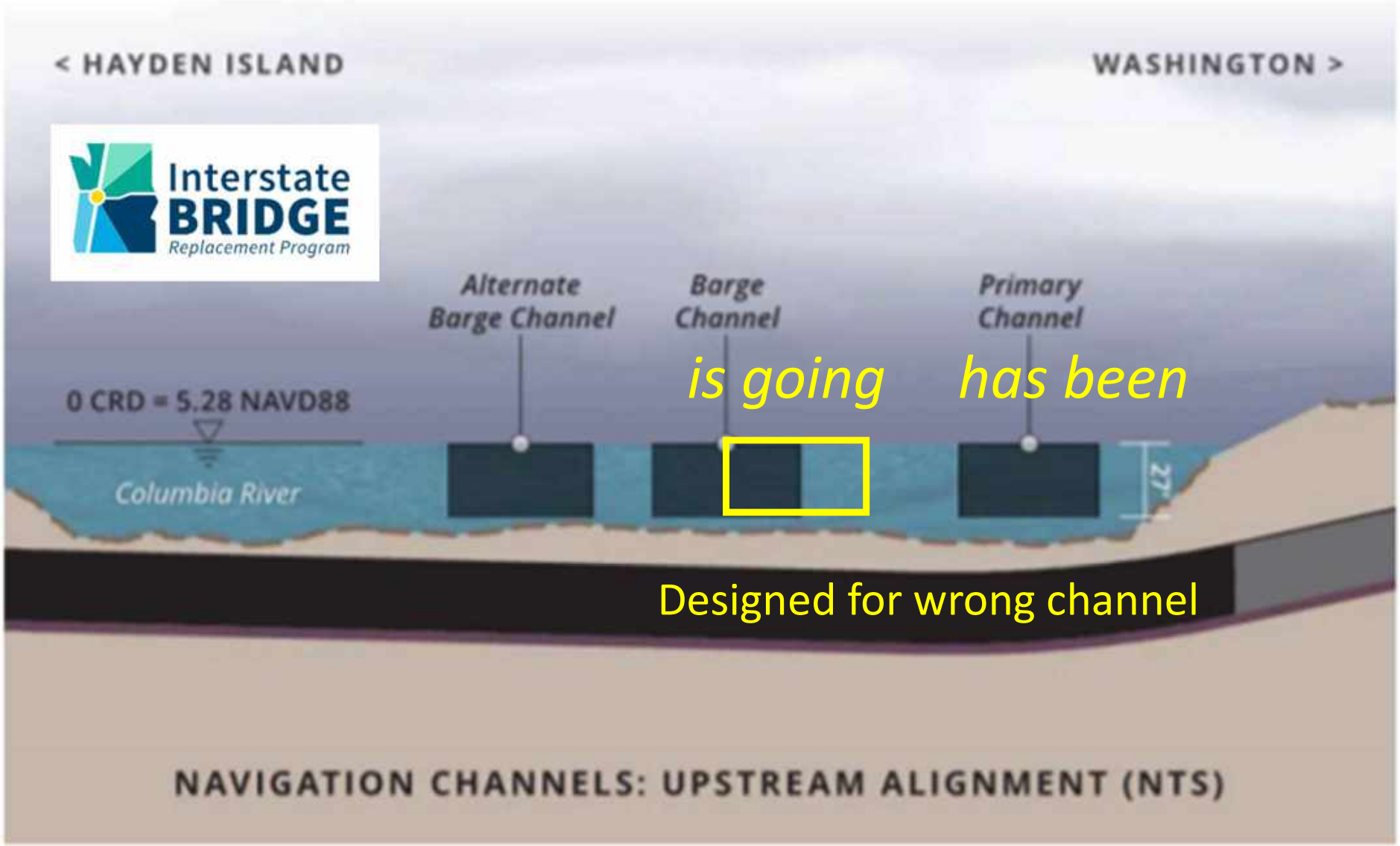
2 click

view the Tunnel Concept Assessment.

https://www.interstatebridge.org/media/4ivnpz3n/2021-03-03-final-itt-v2-48-_remediated.pdf

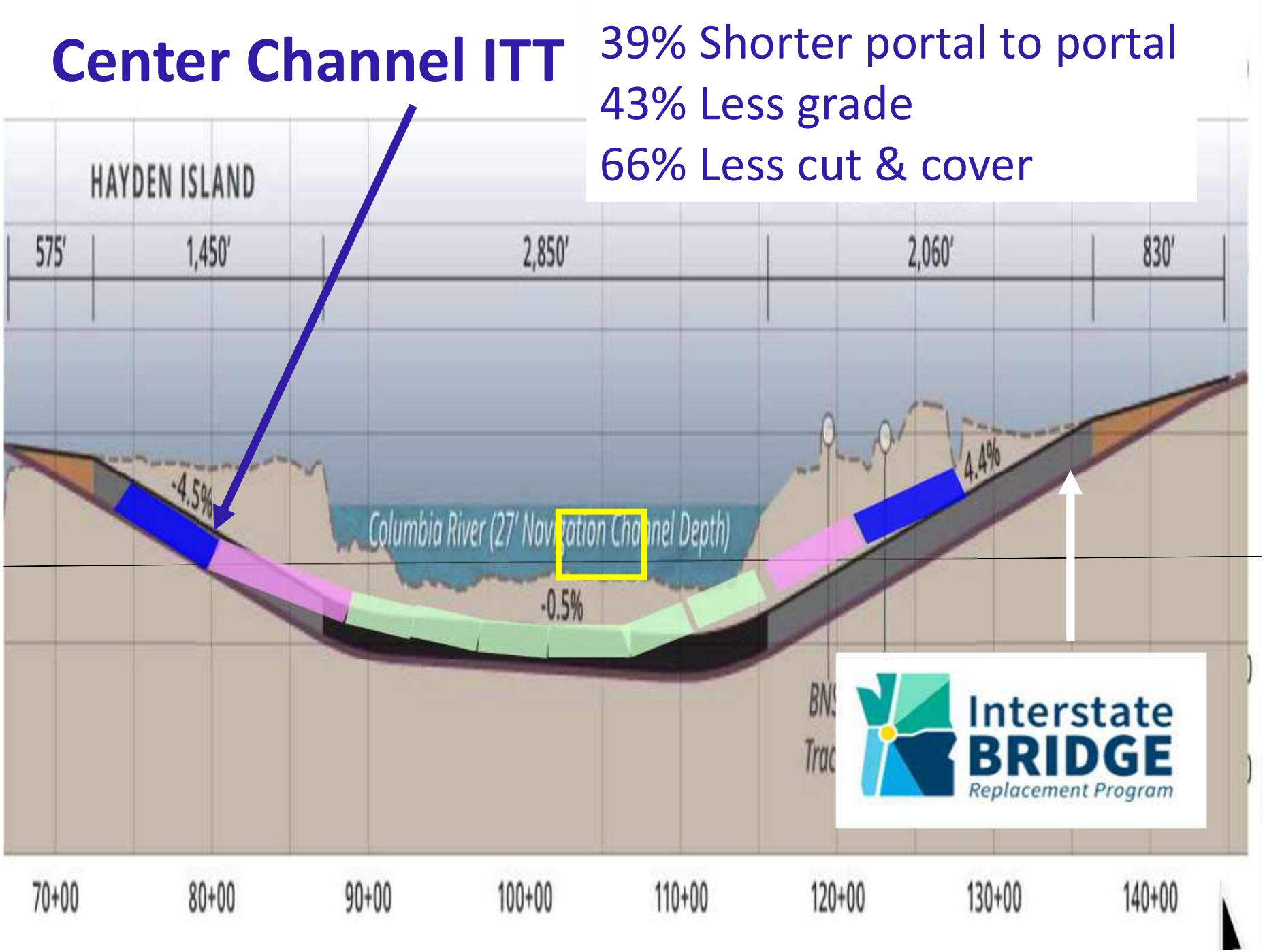
"I skate to where the puck is going, not where it has been".

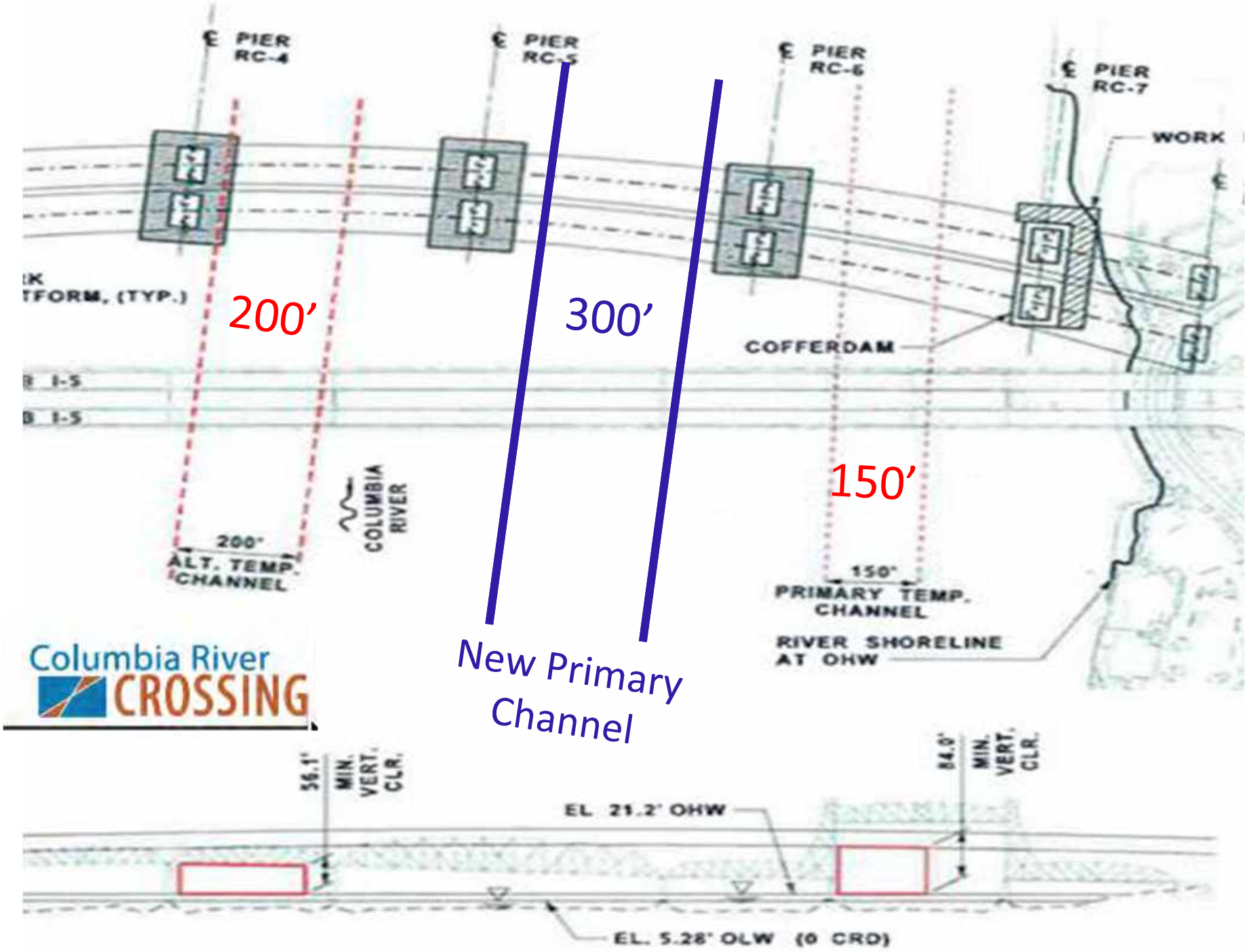
Wayne Gretzky

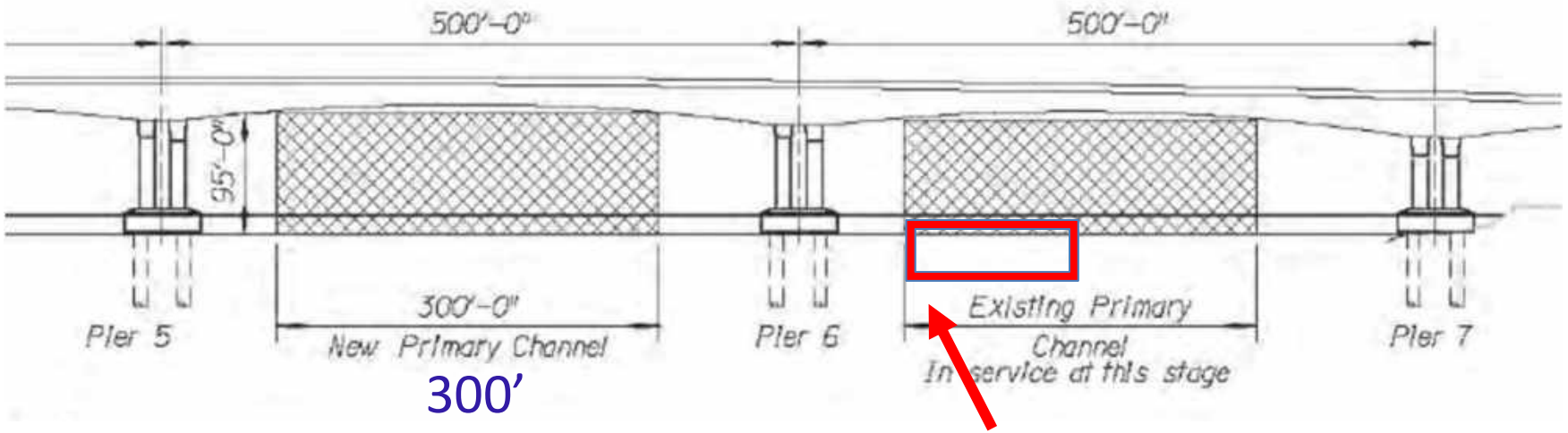


Center Channel ITT

39% Shorter portal to portal
43% Less grade
66% Less cut & cover




℄ PIER RC-4
℄ PIER RC-5
℄ PIER RC-6
℄ PIER RC-7
WORK
200'
300'
150'
COFFERDAM
I-5
I-5
COLUMBIA RIVER
200' ALT. TEMP. CHANNEL
150' PRIMARY TEMP. CHANNEL
RIVER SHORELINE AT OHW
New Primary Channel
Columbia River CROSSING
56.1' MIN. VERT. CLR.
84.0' MIN. VERT. CLR.
EL 21.2' OHW
EL. 5.28' OLW (0 CRD)



300’

New Primary Channel

150’ 17’ deep

Primary Temp. Channel

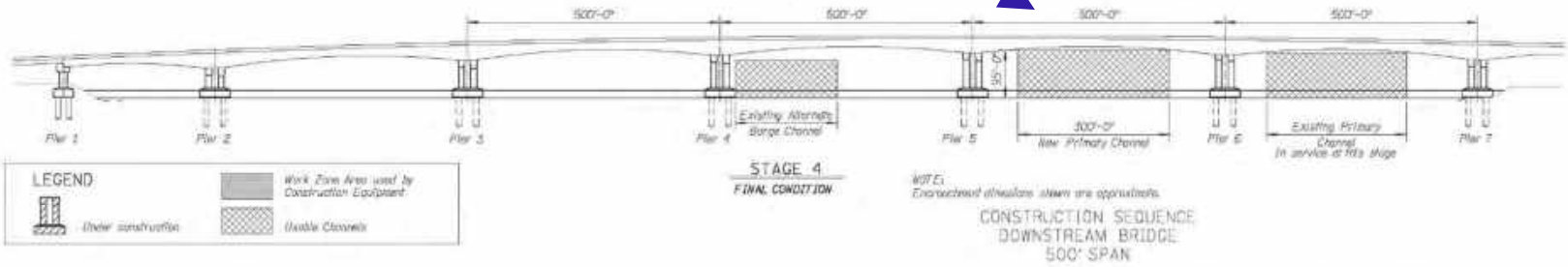
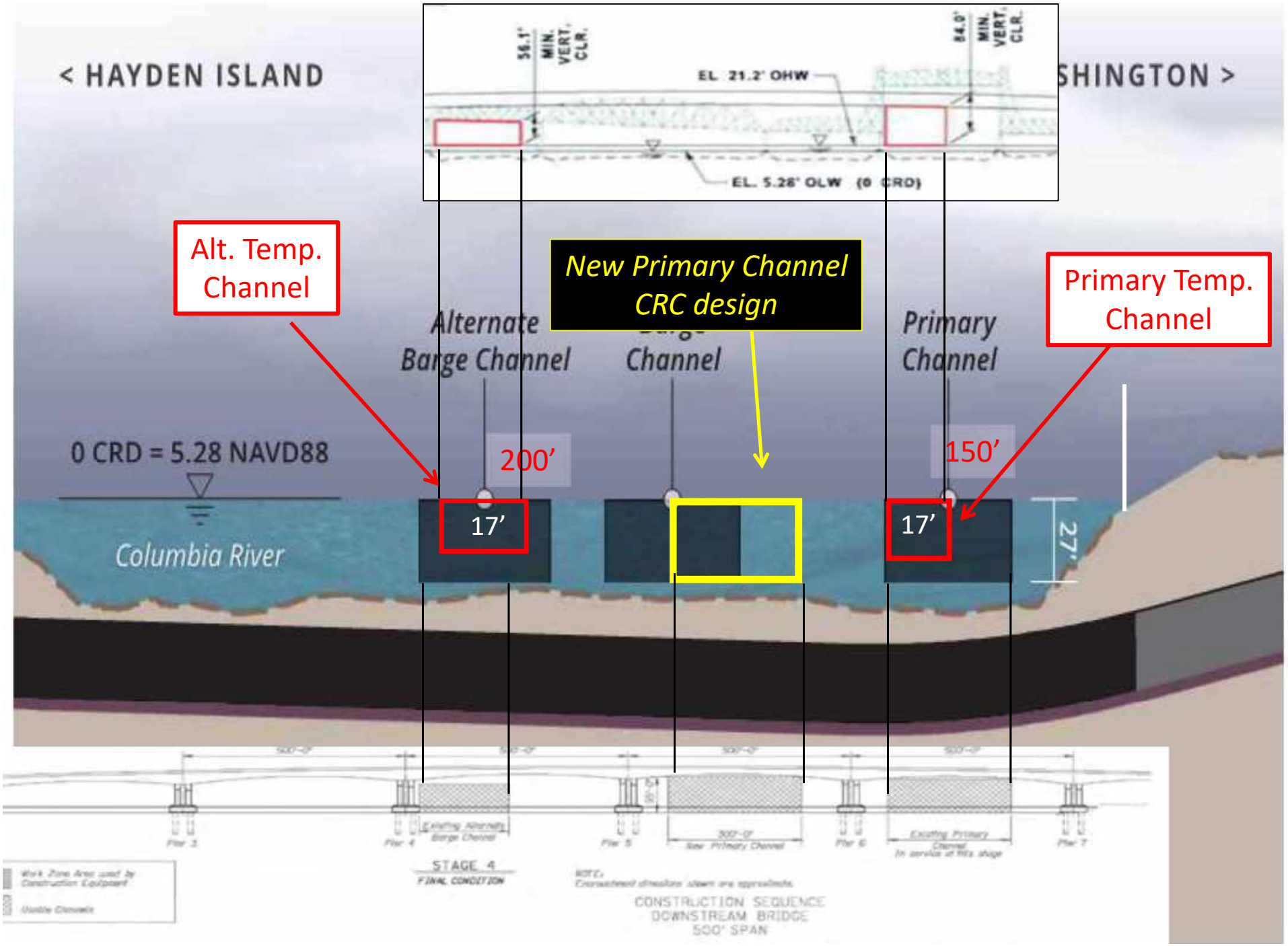
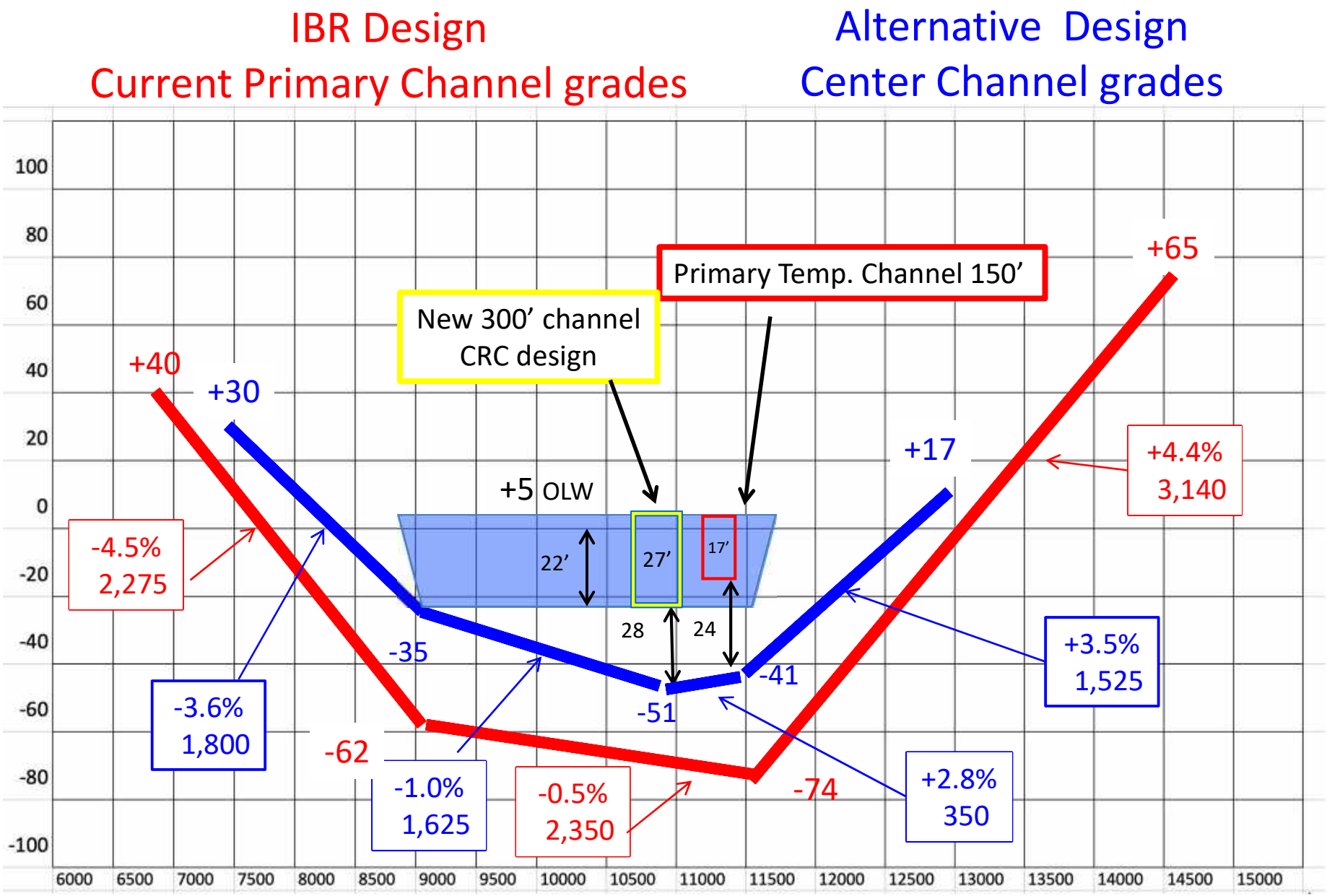


Exhibit 9.3-1
Proposed Replacement Columbia River Bridge Construction Sequence

Columbia River CROSSING


< HAYDEN ISLAND
SHINGTON >
56.1' MIN. VERT. CLR.
84.0' MIN. VERT. CLR.
EL 21.2' OHW
EL. 5.28' OLW (0 CRD)
Alt. Temp. Channel
New Primary Channel CRC design
Primary Temp. Channel
Alternate Barge Channel
Channel
Primary Channel
0 CRD = 5.28 NAVD88
200'
150'
17'
17'
27'
Columbia River
STAGE 4
FINAL CONDITION
CONSTRUCTION SEQUENCE
DOWNSTREAM BRIDGE
500' SPAN


IBR Design
Current Primary Channel grades
Alternative Design
Center Channel grades
Primary Temp. Channel 150’
New 300’ channel
CRC design
+40
+30
+65
+17
+5 OLW
22’
27’
17’
28
24
-4.5%
2,275
-3.6%
1,800
-35
-51
-41
-62
-74
-1.0%
1,625
-0.5%
2,350
+4.4%
3,140
+3.5%
1,525
+2.8%
350
100
80
60
40
20
0
-20
-40
-60
-80
-100
6000
6500
7000
7500
8000
8500
9000
9500
10000
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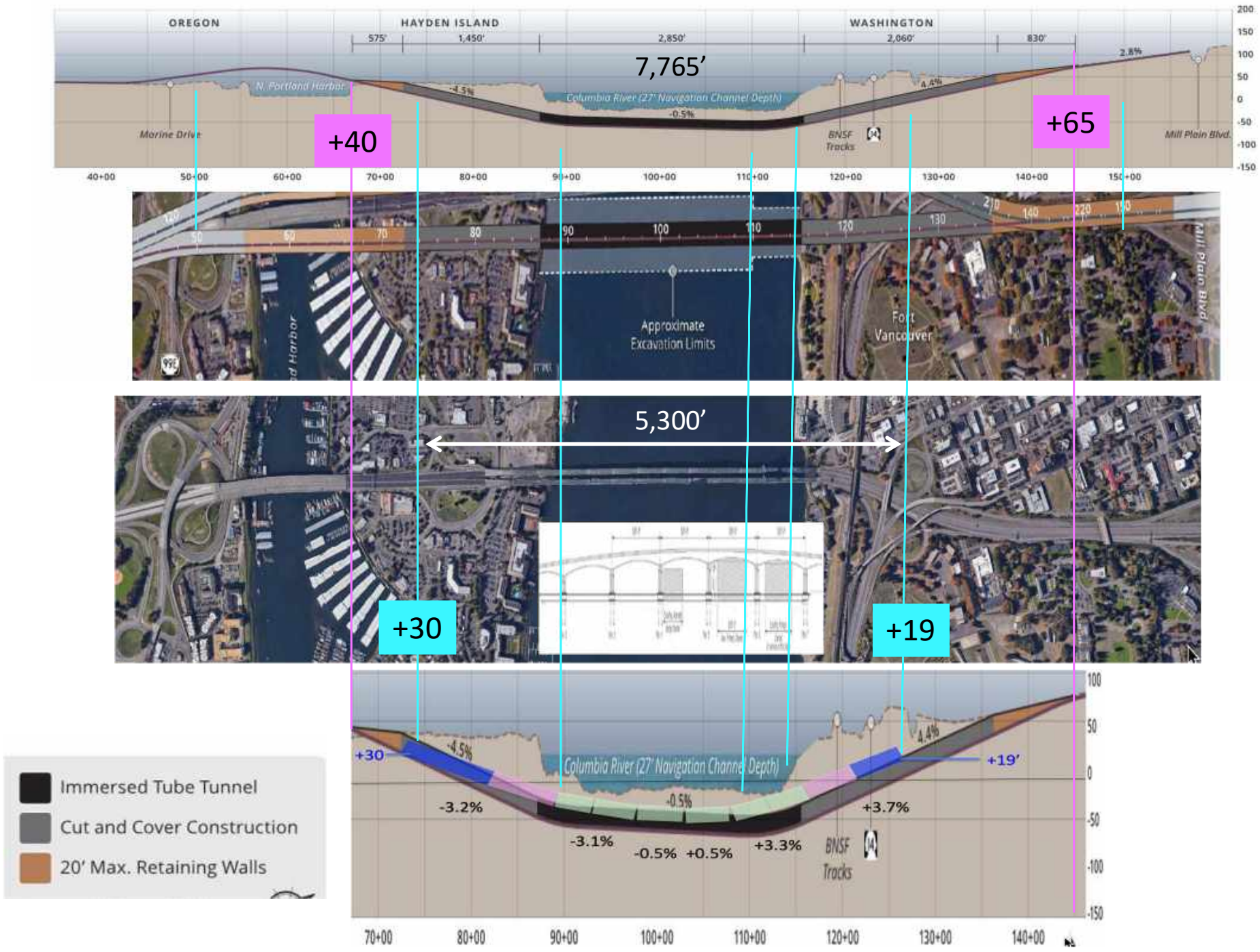
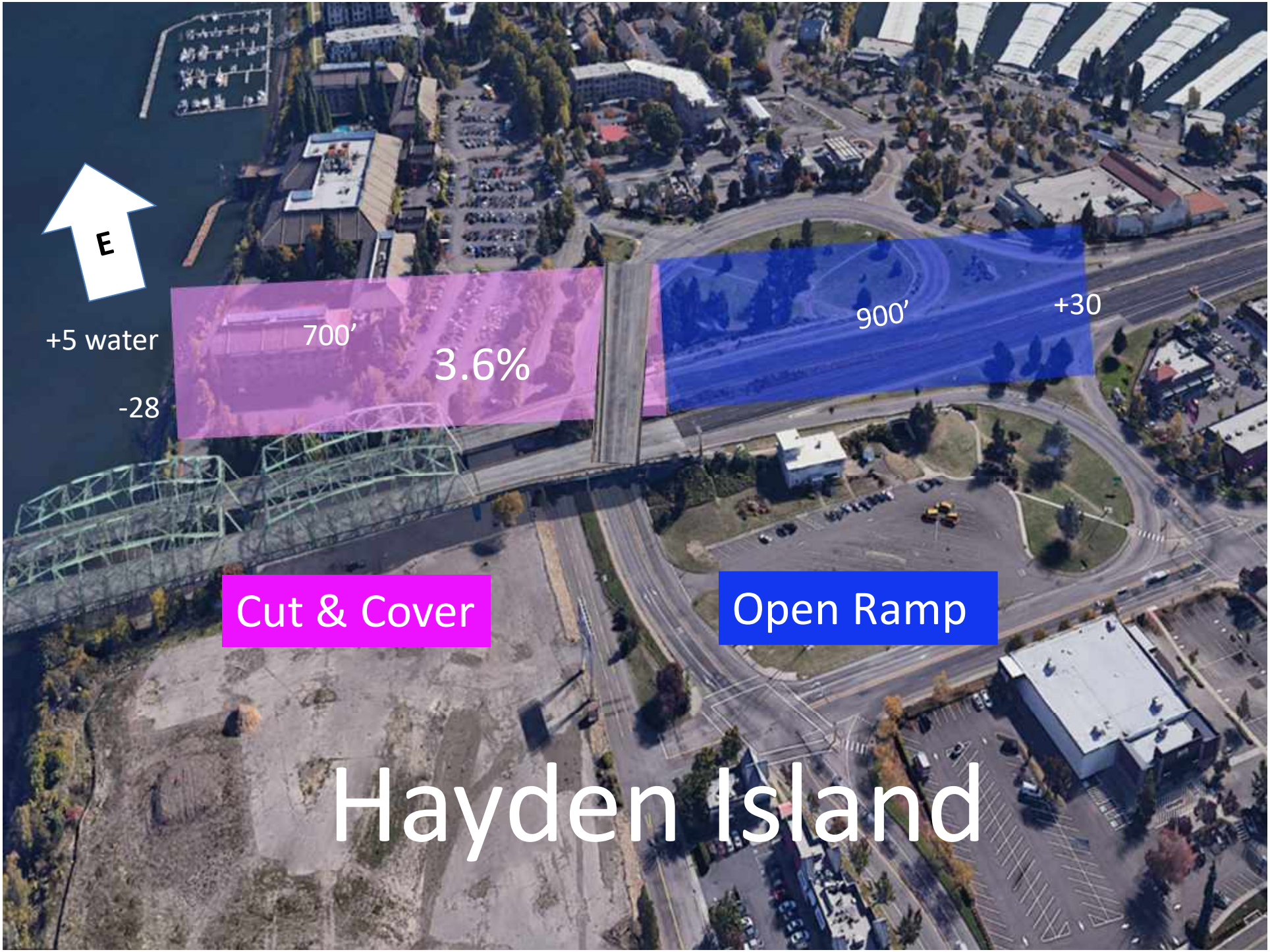
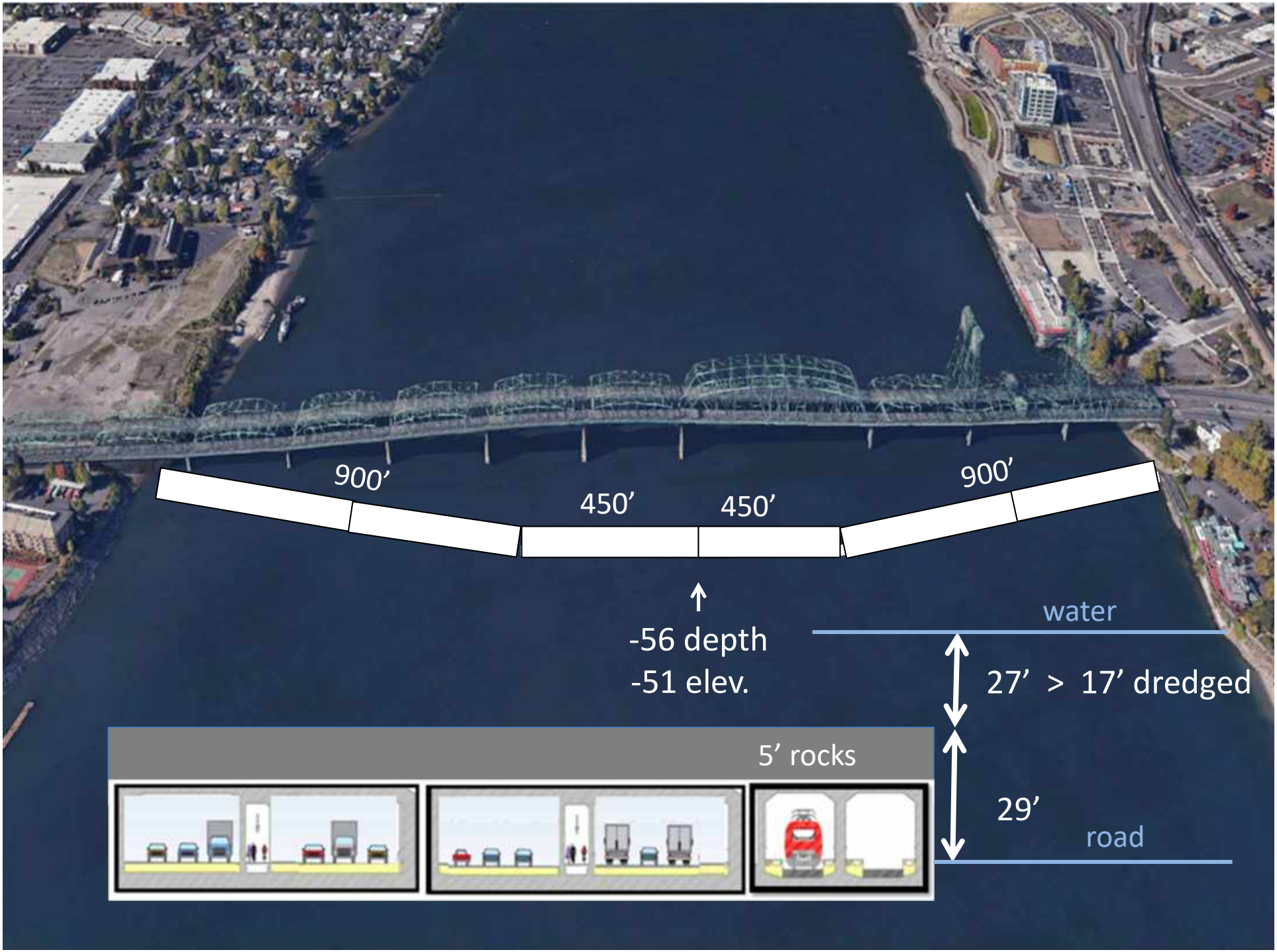
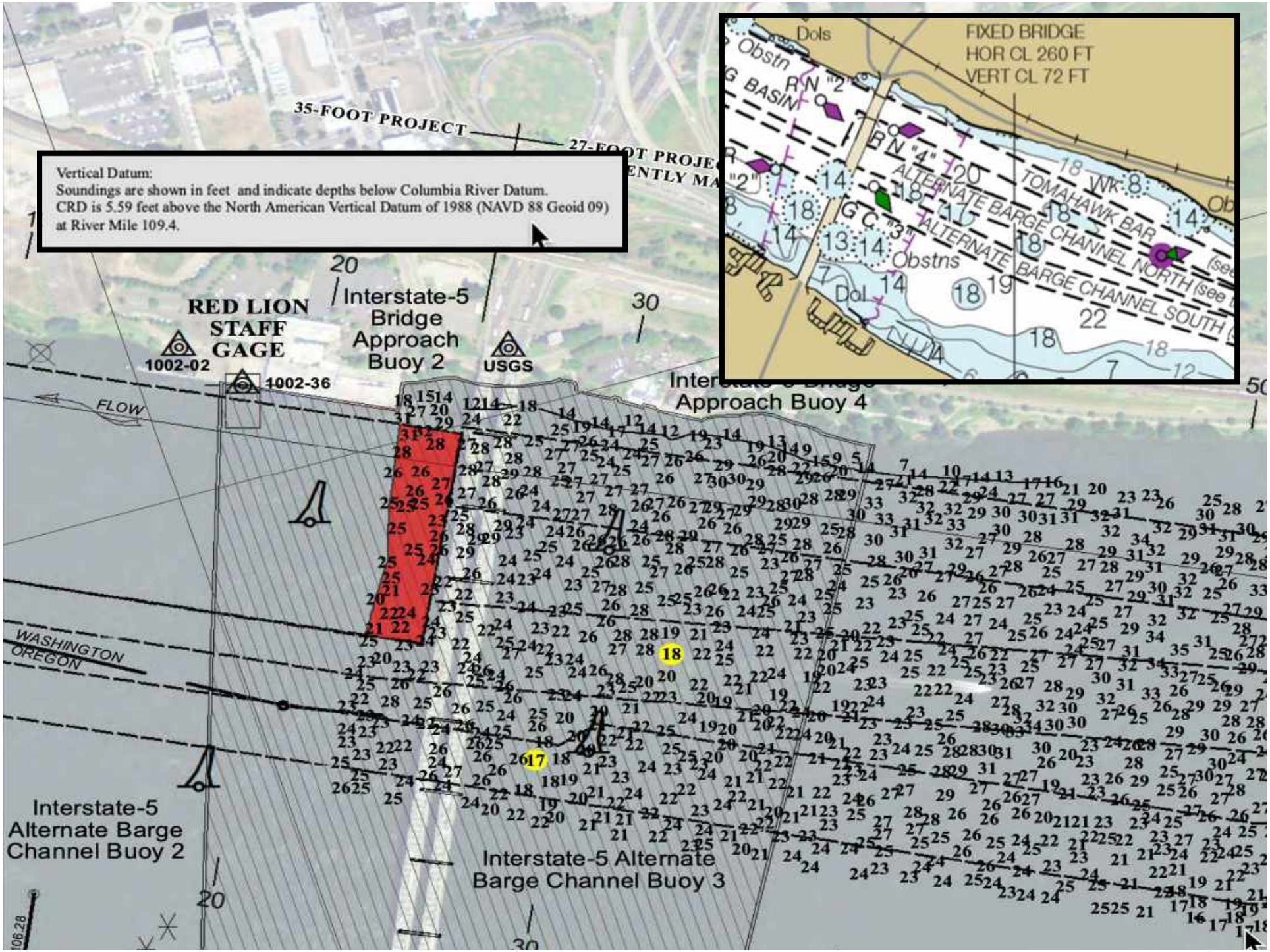

OREGON
HAYDEN ISLAND
WASHINGTON
575'
1,450'
2,850'
2,060'
830'
7,765'
N. Portland Harbor
Columbia River (27' Navigation Channel Depth)
Marine Drive
BNSF Tracks
Mill Plain Blvd.
+40
+65
Approximate Excavation Limits
Fort Vancouver
5,300'
+30
+19
+30'
+19'
-4.5%
-3.2%
-0.5%
-3.1%
+3.7%
+3.3%
4.4%
2.8%
Immersed Tube Tunnel
Cut and Cover Construction
20' Max. Retaining Walls


E
+5 water
-28
700’
3.6%
900’
+30
Cut & Cover
Open Ramp
Hayden Island


Saves current highway and ramps
+17’
Open Ramp
500’
3.5%
EXIT
500’
Cut & Cover
14
+6 water
-18


900’
450’
450’
900’
-56 depth
-51 elev.
water
27’ > 17’ dredged
5’ rocks
29’
road


Vertical Datum:
Soundings are shown in feet and indicate depths below Columbia River Datum.
CRD is 5.59 feet above the North American Vertical Datum of 1988 (NAVD 88 Geoid 09) at River Mile 109.4.
35-FOOT PROJECT
RED LION STAFF GAGE
1002-02
1002-36
USGS
Interstate-5 Bridge Approach Buoy 2
Interstate-5 Bridge Approach Buoy 4
FLOW
WASHINGTON
OREGON
Interstate-5 Alternate Barge Channel Buoy 2
Interstate-5 Alternate Barge Channel Buoy 3
FIXED BRIDGE
HOR CL 260 FT
VERT CL 72 FT
Dols
Obstn
BASIN
R N "2"
B N "4"
G C "3"
ALTERNATE BARGE CHANNEL NORTH
ALTERNATE BARGE CHANNEL SOUTH
TOMAHAWK BAR
Obstns
Dol