Hayden Island
Neighborhood Network

2209 N. Schofield Street
Portland, Oregon 97217

(Attachment A)

Concerns Regarding the Current I-5 Bridge Replacement Project [IBRP]

REMEDIATED 2024-07-04.

A replacement I-5 bridge would uniquely affect Hayden Island. Situated in the middle of the Columbia River, Hayden Islanders have few access choices, making us entirely dependent on the I-5 Bridge. In addition, the I-5 Bridge goes through the inhabited half of the Island, cutting it in two. The island population has now over 3,000 full-time residents, and the number is increasing due to new apartment building construction (1).

Here are some of the main concerns of many residents:

1. **LIMITED ACCESS TO VANCOUVER AND PORTLAND:**
   Limited jobs and services exist on the Island. Islanders regularly travel north via I-5 to Vancouver, WA, for groceries and essential services, which (depending on the time of day) is often less congested for islanders than the I-5 south route to Portland.

   The IBRP suggests they could add an alternative route across North Harbor for islanders to travel south into Portland. Nevertheless, because this small back road would be the main roadway for large trucks, including supply chain freight, along with residents traveling for services and jobs in Portland, we expect it would have heavy congestion and safety issues. However, such additional access would provide Hayden Islanders with a **long-needed alternative route in the event of an emergency evacuation of the Island.**

   A report prepared by the Oregon Seismic Lifelines Route identification project for ODOT (3) says that a key factor in the resilience of the transportation network is the seismic performance of bridges. Bridges are essential to the post-earthquake mobility of nearly all transportation modes, as they are relied upon to carry goods and people into and out of urban centers after natural disasters. I-5 is a major seismic or other major disaster lifeline route (4) in Oregon. *Hayden Island is completely dependent on I-5 as its lifeline.* This is why it is so important to Hayden Island residents, the businesses and visitors, that the design of the I-5 Columbia River crossing, whether bridge or tunnel, is done right!

2. **ADDITIONAL EXPENSES CAUSED BY TOLLING:**
   Since I-5 is the main roadway for islanders, the planned tolls on I-5 would be detrimental to Islanders daily. The interstate highway has been the only way on and off the Island since the 1970s. It is our neighborhood road. The Island has a large, manufactured homes park, and many lower-income residents would face economic

hardship and stress from the added expenses. There is also a concern that tolls would have strong negative impacts on the Jantzen Beach Shopping Center and numerous businesses would leave the Island. The loss of local jobs for numerous islanders, plus the loss of local stores, would have dire consequences for the whole Island community.

3. **HIGH BRIDGE SAFETY ISSUES:**
The U.S. Coast Guard (which is an arm of the U.S. Department of Homeland Security) has a **Congressional mandate** to protect river commerce. An essential aspect is **vetting all bridge construction to ensure that existing water traffic can continue to pass underneath**, as well as making allowances for industry and the historical trend towards larger vessel sizes. The most critical parameter is the VNC (vertical navigation clearance), which is 180 feet for the distance from the mouth of the Columbia River to the Burlington North Railroad (BNRR) Bridge at Vancouver. **The current I-5 Bridge lift span has a VNC of 178 feet, which the U.S. Coast Guard states must be maintained to sustain river commerce.** This height considers the shipbuilding industries east of the I-5 Bridge, **emergency river access to PDX airport,** and the trend towards larger ships.

However, because of the problems of building a bridge with a minimum VNC of 178 feet, the Coast Guard strongly recommended to the IBRP that they should build either a l**ow bridge with a Bascule lift span or an immersed tunnel** (2). HINooN strongly supports the U.S. Coast Guard and its mandate to protect Columbia River commerce! Moreover, HINooN is troubled by the IBRP's apparent promulgation of misinformation about the viability of these alternatives for improving traffic flow across the Columbia River.

Unfortunately, **IBRP's multi-modal fixed-span high bridge design** would subject I-5 traffic traveling over the Columbia River to excessive dangers from the over-steep grades to the top and down again, together with limited lines of sight caused by the bridge hump, especially during inclement weather. With a multi-modal fixed-span high bridge, the dangers experienced from fog and rain, frost, snow, sleet, hail, and ice, including the potentially grave dangers of black ice, would be much worse than on our existing I-5 bridge!

Passageway and roadway grades need to be safe and not too challenging for cyclists and pedestrians. In addition, pedestrian access needs to cater for baby strollers and people using mobility aids such as wheelchairs and walkers. Moreover, year-round, vehicular bridge access must be safe at all times of the day for heavily loaded trucks, buses, cars, and commuter light rail (which has strict grade requirements). Catering for all these modes of transportation would require extending a fixed-span high bridge to the north and south to an unacceptable degree, potentially making it several miles long and potentially destroying a valuable natural wetlands area just south of North Harbor. Finally, the height and length of the approaches of a high bridge would reduce the feasibility of on/off ramps for Hayden Island due to cost.

Another big concern that a high bridge would cause is the creation of a vast wasteland of concrete pillars and earthen ramps. Not only would this consume a sizable portion of Hayden Island's precious and limited real estate, but it would also be detrimental to people working and living under the umbrella of its enormous shadow.

4. **EARTHQUAKE VULNERABILITY:**
   We are concerned that the IBRP's current bridge plans specify a bridge that is no more seismically safe than the existing I-5 bridge.

   Moreover, we are worried about the dangers of the lack of a solid foundation for a high I-5 bridge over the Columbia River. The CRC project documents that the proposed path crosses over sand and alluvium, many hundreds of feet deep, material that expert opinion states is subject to **seismic liquefaction**. Furthermore, to make a high bridge seismically acceptable would require excessive billions of dollars added to the cost compared to other approaches. We have seen expert testimony that a high bridge has a much lower chance than expected of surviving in a severe earthquake in our region. Liquefaction of the deep alluvial river bottom soils would tend to cause a high bridge to buckle sideways. A low bridge with a Bascule lift span, or an immersed tunnel, could avoid this troubling outcome. We are worried that any kind of high bridge design would be most detrimental to many people in our region in so many ways.

5. **INADEQUATE BIKE AND PEDESTRIAN PATHS:**
   While the IBRP bridge proposal includes biking and walking paths, it is unreasonable to expect people to carry their bikes to a height of 60 or 70 feet to get to a new I-5 freeway over the Island or walk uphill to get to the pathway on a spiral staircase.

   Please note: The I-205 Bridge has a bike path down the freeway center, which can present extreme dangers to cyclists from other road users, and it directly subjects cyclists to increased air pollution effects. We worry that the same scenario is happening with the IBRP proposal.

6. **QUALITY OF LIFE DURING CONSTRUCTION AND HOW THIS WOULD BE MITIGATED:**
   If construction starts as presented by the IBRP proposal, we believe the construction equipment would overburden Island residents. We would experience adverse living conditions, including but not limited to countless traffic disruptions to everyday life, while on the Island and both when trying to leave or to return to the Island. There would also be increased air pollution, loud noise, and strong vibrations. These problems would seriously impact residents, businesses, and visitors for years. *How would these issues be mitigated?*

   Note: There are no medical facilities located on the Island. The Fire Station 17 (Hayden Island) EMTs and Paramedics serve people here and have saved many lives. We have a big question: How will the bridge's construction affect this vital emergency service both on and off the island?

7. **CRITICAL ENERGY INFRASTRUCTURE (CEI-Hub) – CASCADIA SUBDUCTION ZONE (CSZ) EARTHQUAKE (MAGNITUDE 8-9) AND THE I-5 BRIDGE REPLACEMENT PROGRAM (IBRP) – THE THREAT OF SOIL LIQUEFACTION**
   We are very concerned that the critical issue of the CEI Hub does not appear in the IBR program Draft Supplemental Environmental Impact Statement (High Priority Hazardous Materials Sites), nor is it mentioned in the current IBR program Bridge Influence Area (BIA). Because of the passage of SB 1567, Oregon has the authority to require seismic upgrading of the CEI Hub to withstand a Cascadia Subduction Zone (CSZ) earthquake of magnitude 8-9. However, because both the CEI Hub and the IBR program Locally Preferred Alternative (LPA) are in the same large liquefaction zone, the IBR program can

and should identify the CEI Hub as being nearby or adjacent to the modified LPA. The liquefaction zone mapped in the DOGAMI Soil Liquefaction Assessment* covers the area from the CEI Hub on the west side of the Willamette River, to Hayden Island, and extends to Gresham in the east.

Please note: The BNSF rail network transports tanker cars filled with highly flammable fuels to the CEI Hub. These trains regularly travel across the Columbia River from Vancouver, passing across Hayden Island. This ***hazardous fuel transportation*** *has many attendant risks to both Portland and Vancouver, including to the I-5 bridge and its surrounding areas.*

Reference #6 at the end of this paper has a link to a paper by the Institute for Sustainable Solutions – "Risk of Earthquake-Induced Hazardous Materials Releases in Multnomah County, Oregon: Two Scenarios Examined". This paper maps the location for soil liquefaction and chemical release plumes in the event of a Cascadia Subduction Zone Earthquake, magnitude 8-9.

Note: An Immersed Tube Tunnel option, being one of the two options strongly recommended by the USCG, appears to be a good option for a river crossing between Portland and Vancouver, and would also be more likely to withstand a major earthquake.

8. **DISPLACED HOMES**
   Jantzen Beach Moorage (JBMI) is a unique river community with over 150 floating homes, but three rows of homes are in the direct path of IBRP's planned bridge. These homes would be permanently lost, which would have a huge impact on the individual residents as well as the whole community structure itself. It is unknown where these homes could even be relocated to. *How will all these floating homes owners and the community be compensated?*

RECOMMENDATIONS:
HINooN and Hayden Island residents strongly feel that the IBRP must consider the other river crossing options strongly recommended by the Coast Guard. HINooN is apprehensive that the IBRP is not really listening to the Coast Guard or Island residents. HINooN believes that the IBRP will continue to push for a 116-foot bridge height, although there is no statutory basis for IBRP to do this.

The IBRP's push for a VNC of 116 feet, **although sixty-two feet below the Coast Guard's requirement of 178 feet**, still qualifies as a high bridge and has many of the same problems as a 178-foot VNC. Any new bridge across the Columbia River must consider the combined issues of legal height requirements, grade requirements, the climate, and the safety and comfort of travelers and nearby residents. As strongly suggested by the Coast Guard, the DOTs should look at more straightforward and lower-cost approaches such as:

i) Low bridge with a Bascule lift span or

ii) Immersed tunnel,

both options which do not have the too low VNC issue.

If neither of these designs are embraced by IBRP, we hope that the Oregon and Washington Legislatures consider redirecting their efforts towards **a *third* Columbia River crossing** using either the low bridge with Bascule lift span or the immersed tunnel option - or consider invoking the no-build option.

CONCLUSIONS:
The IBRP assumes they have a community consensus on the bridge design when the IBRP apparently do not yet know what that design is. Island residents are at ground zero, are directly impacted, and therefore need to know the exact details of the design! For example, *what are the site details for the proposed light rail terminal? Where are the detailed plans for the exit ramps?* Judging by the IBRP's troubled performance at the Joint Oregon-Washington I-5 Bridge Committee (5), the IBRP does appear to be misleading the public.

Hayden Island Neighborhood Network [HINooN] asks for a regional plan to improve traffic flow across the Columbia River while protecting river commerce. Our concerns about climate change and the environment led us to advocate retaining the existing I-5 Columbia River Bridge (seismically retrofitted) for local traffic and redirecting the bulk of river-crossing transportation resources into a third river crossing with a Bascule span or submersed tunnel. Whatever is built, we believe it is vital that the project carefully considers the effects of climate change in our Pacific NW weather environment.

Hayden Island does not need continued congestion on a higher, wider, and overly expensive bridge that not only blocks a significant amount of river commerce and marine emergency river traffic for the next hundred years, does not fix the complex traffic congestion problems, but destroys Hayden Island.

This letter describes the main concerns of many Island residents. These concerns reflect the information available to HINooN as of the date of this submission. They will be updated as additional relevant material becomes available.

Thank you for your time and attention.

Respectfully,
Board of Directors,
Hayden Island Neighborhood Network [HINooN]

References:

(1) Hayden Island Civic Life
https://www.portland.gov/sites/default/files/2022/hayden-island_civiclife_0.pdf

(2) Coast Guard Preliminary Navigation Clearance Determination

https://www.interstatebridge.org/media/fi2b3xei/ibr_next_steps_bridge_permitting_june2022_remediated.pdf

(3) Oregon Seismic Lifelines Identification Project Report prepared for ODOT

https://www.oregon.gov/lcd/NH/Documents/Apx_9.1.16_SeismicLifelines_PREFL_OPT.pdf

Local highways selected for this list includes **I-5** and Pacific Highway No. 1 (the California state line south of Ashland to the Washington state line in Portland); I-84, Columbia River Highway No. 2 (I-5 in Portland to US 97 at Biggs Junction); I-205, East Portland Freeway, Highway No. 64 (I-5 in Tualatin to the Washington state line); Oregon Route (OR) 217, Beaverton-Tigard Highway No. 144 (OR 26 in Beaverton to I-5 in Tigard); I-405, Stadium Freeway Highway No. 61 (I-5 at the south end of the Marquam Bridge to I-5 at the east end of the Fremont Bridge in Portland).

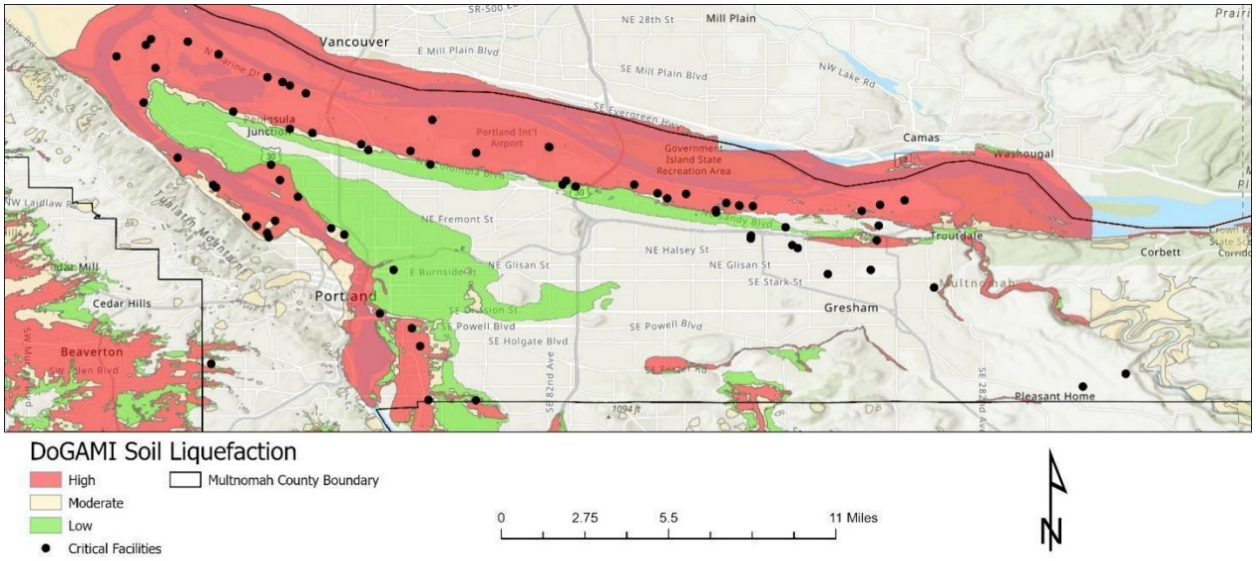
(4) Seismic Lifeline Routes in Oregon

ODOT Life Lines
https://www.co.clatsop.or.us/media/11331

(5) May 7, 2022, City Commentary. "Oregon and Washington DOTs plan too low a bridge–again", by Joe Cortright.
https://cityobservatory.org/oregon-and-washington-dots-plan-too-low-a-bridge-again/

(6) Institute for Sustainable Solutions – Risk of Earthquake-Induced Hazardous Materials Releases in Multnomah County, Oregon: Two Scenarios Examined: See pages 38, 79, 80, 85,86, and 87 for Plume maps.

Risk of Earthquake-induced Hazardous Materials Releases in Multnomah County, Oregon



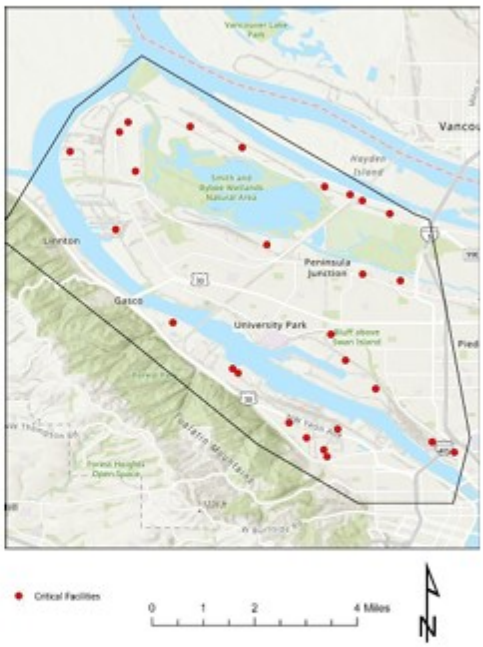
Multnomah County has 1,100 industrial facilities that store chemicals, known as Tier II facilities. Many of the top seventy high-risk facilities are in areas where the soil will liquefy during a major earthquake. Portland State University Institute for Sustainable Solutions / Portland State University Institute for Sustainable Solutions" [1]

1 Ehrlich, April, October 20, 2023, Oregon Public Broadcasting, " Cascadia earthquake could release deadly chemicals, endangering much of Multnomah county." Accessed December 12, 2023.

Description of Facility Population Within the Study Area

The scope of this research project was limited to the facilities along Highway 30 and the North Portland industrial areas. This region, shown in Figure 3, contains 27 of the Multnomah County LEPC's (2022) identified top 70 Tier II facilities. The facilities in this target area store a variety of chemicals including hydrochloric acid, sulfur dioxide, hydrogen chloride, thionyl chloride, anhydrous ammonia, diesel, toluene, sulfuric acid, and other miscellaneous chemicals. Storage unit types include metal or plastic drums, plastic totes or bins, pressurized cylinders, above ground tanks, and rail cars.

Figure 3: Tier II Facilities Within Study Area



According to Metro's Regional Land Information System (n.d.), nine of the facilities in the target area are listed as constructed prior to 1993, seven are listed as constructed between 1993 and 2003, four are listed as constructed after 2004, and seven do not have facility age listed and are therefore assumed to be constructed prior to 1993.

https://multco-web7-psh-files-usw2.s3-us-west-2.amazonaws.com/s3fs-public/FOUO%20Report%20for%20Multnomah%20County%20from%20ISS%2C%20Risk%20of%20Earthquake-Induced%20Hazardous%20Materials%20Releases%2010-11-2023v1.pdf

Introduced by: Martin Slapikas, HINooN Board Member
Ellen Churchill, HINooN Board Member, Secretary
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Alastair Roxburgh, HINooN Resident

DATE APPROVED: JULY 11, 2024

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MARTIN SLAPIKAS, RETIRED CHAIR and HINooN Board Member

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PAM FERGUSON, CHAIR, HINooN ELLEN CHURCHILL, SECRETARY, HINooN,