

USCG COMMENT 1 (PARAGRAPH 1 & 2):

No.	Page	Comment
1	3-72	<p>Exhibit 3.2-4 (Source: Parsons Brinckerhoff, 2004) on this page does not include Thompson Metal Fabricators (TMF), nor does the section include the source of the frequency data for all vessel types. TMF was mentioned in the Boat Survey narrative but its clearance requirements were not included in Exhibit 3.2-4.</p> <p>Schooner Creek Boat Works, a large mast sailing vessels servicing facility, has raised concerns regarding the proposed Locally Preferred Alternative (LPA) severely impacting their customers. Address whether LPA will block access to the customers of Schooner Creek Boat Works.</p>

CRC RESPONSE TO COMMENT 1 (PARAGRAPH 1 & 2):

The FEIS does not name specific vessels or river users. Thompson Metal Fab (TMF) is represented in the “Marine Contractors” category in Exhibit 3.2-4. The source of the frequency data in that exhibit is the source referenced in the exhibit (Parsons Brinckerhoff 2004). TMF recently provided comments advising of a need for a higher vertical clearance of “over 100 feet”.

Schooner Creek Boat Works (SCBW) asked for 90 feet at the Preliminary Coast Guard hearing on September 21, 2006. On September 9, 2011, the Project was forwarded a comment from Schooner Creek to the Coast Guard where they requested 125 feet. As described in detail below, the Project will complete an Air Draft Analysis to assess the impact to owners of vessels that would be unable to pass the 95 foot (CRD) vertical clearance for the Coast Guard’s Section 9 permit process. During this survey the Project will determine how many vessels upstream from TMF and SCBW will be impacted by the height restrictions.

USCG COMMENT 1 (PARAGRAPH 3):

The EIS must address whether any existing facilities on the waterway are or could be considered critical infrastructure, key resources, or important/unique US industrial capability i.e. are these facilities unique or one of only a few of the type on the US Pacific Coast, do they provide specialty products that are not available from other US manufacturers, etc. Address whether the LPA’s reduced clearances negatively impacts those facilities and their customers.

CRC RESPONSE TO COMMENT 1 (PARAGRAPH 3):

There are water dependant industries upstream from the LPA alignment. These industries manufacture large construction project components (e.g. the bridges and drilling rigs manufactured at TMF). It is important to consider whether these

industries represent critical infrastructure, key resources, or important/ unique us industrial capabilities.

For purposes of this assessment, definitions will be used from the 2003, *Homeland Security Presidential Directive 7: Critical Infrastructure Identification, Prioritization, and Protection* (http://www.dhs.gov/xabout/laws/gc_1214597989952.shtm). The *Homeland Security Presidential Directive 7* establishes a policy for Federal departments and agencies to identify and prioritize critical infrastructure and to protect them from terrorist attacks. The directive defines relevant terms and delivers 31 policy statements.

Background

“4. Critical infrastructure and key resources provide the essential services that underpin American society. The Nation possesses numerous key resources, whose exploitation or destruction by terrorists could cause catastrophic health effects or mass casualties comparable to those from the use of a weapon of mass destruction, or could profoundly affect our national prestige and morale. In addition, there is critical infrastructure so vital that its incapacitation, exploitation, or destruction, through terrorist attack, could have a debilitating effect on security and economic well-being.”

Definitions

“6. In this directive:

a. The term "critical infrastructure" has the meaning given to that term in section 1016(e) of the USA PATRIOT Act of 2001 (42 U.S.C. 5195c(e)).”

Sec. 1016 of the US Patriot Act defines critical infrastructures:

(e) ... In this section, the term `critical infrastructure' means systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.

b. The term "key resources" has the meaning given that term in section 2(9) of the Homeland Security Act of 2002 (6 U.S.C. 101(9)).

Section 2(9) of the Homeland Security Act of 2002 provides the following definition of key resources:

(9) The term “key resources” means publicly or privately controlled resources essential to the minimal operations of the economy and government.

While the Project has found no statutory or regulatory definition of “important/unique US industrial capabilities,” it could be assumed, from the related references above, that this industrial capacity would include companies that are crucial to our national security, national health and safety or our nation’s international economic competitiveness.

The CRC project seeks to avoid and minimize all adverse impacts, including those to industrial facilities. The project’s purpose and need includes improvements to freight mobility, and the project has identified numerous economic benefits resulting from the LPA. The new crossing would require fewer piers, thus creating less obstacles to river navigation than either the No-Build or supplemental crossing alternatives and would provide a better navigational alignment through the BNSF railroad bridge. In applying these standards, the project may, potentially, have indirect adverse impacts to marine industries. However, these industries would not be considered “critical infrastructure, key resources, or nationally important/unique industrial capability”. Some upstream industries such as TMF are involved in the manufacture of large industrial structures (e.g., bridges and drilling rigs) and they have on occasion required a higher bridge height for passage. (The Project survey indicates TMF’s past need for this higher bridge height on 25 occasions in the past 20 years.) The Project does not consider that these manufacturers and sailboats, though important to the local economy, are assets that are so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating or catastrophic impact on national security, national economic security, national public health or safety, or otherwise so essential to the nation or any combination of those matters. Nor are they considered publicly or privately controlled resources essential to the minimal operations of the economy and government.

USCG COMMENT 1 (PARAGRAPH 4):

Address the vertical clearance provided by the LPA at various water stages of the Columbia River and whether those reduced clearances negatively impact the safe and efficient movement of any present or prospective public, commercial and recreational users operating on the waterway.
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CRC RESPONSE TO COMMENT 1 (PARAGRAPH 4):

The bridge height was determined using data from the U.S. Army Corps of Engineers’ (USACE) Columbia River recording station at Vancouver that records the water level several times each day. Both the minimum and maximum recorded daily water levels are available.

This data was depicted in the Navigation Technical Report in two different ways: 1) the graph (Exhibit 4-5 from the Navigation Technical Report) below depicts the average monthly minimum and maximum water levels over this time period, and 2) the available vertical clearance for each of the tugs and tows, high mast sailboats, and marine contractors.

Exhibit 4-5 from the Navigation Technical Report: USACE Columbia River at Vancouver Water Level Data (1987-2006)

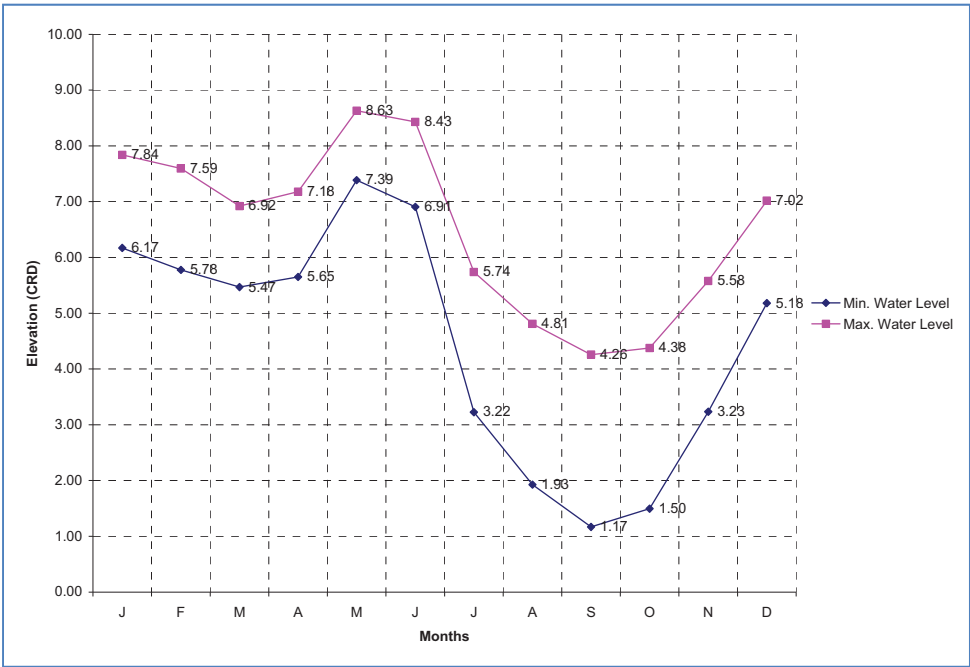
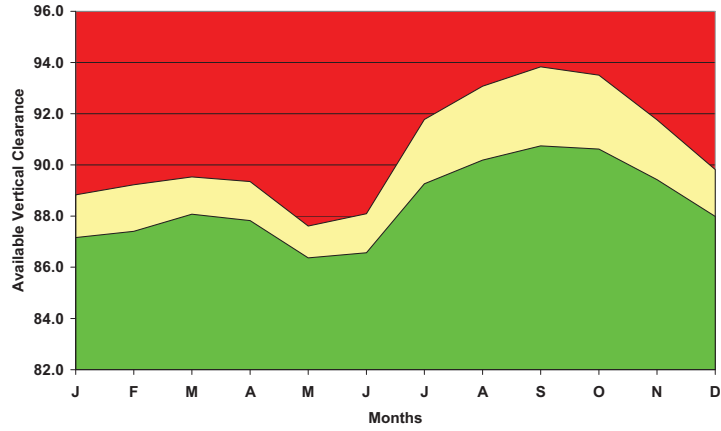


Exhibit 5-2 from the Navigation Technical Report (See below) shows the available vertical clearance for each of the tugs and tows, high mast sailboats, and marine contractors. The green zone represents vertical clearances available at the average maximum water level. The red zones indicate that the clearance is not available and the yellow band indicates the range of what may or may not be available due to annual variations in water elevation. From these graphs the following observations were made:

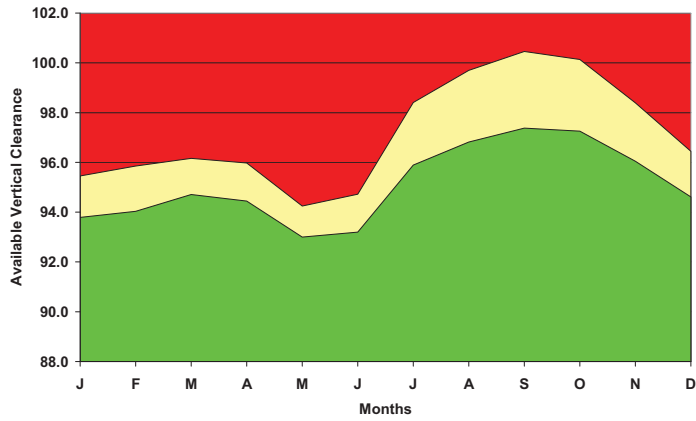
- Tugs and Tows, with a 60 foot vertical clearance requirement, are well within the Green zone and could pass under the bridge during all months of the year.
- High mast sailboats, with an 88 foot vertical clearance requirement could pass under the bridge during all months of the year.
- Marine Contractors, with a 110 foot vertical clearance requirement could not pass under the bridge without partial disassembly of their loads.

Exhibit 5-2 from Navigation Technical Report: Proposed Replacement Alignment Clearances for 300 feet width (top), 100 feet width (center), and 50 feet width (bottom)

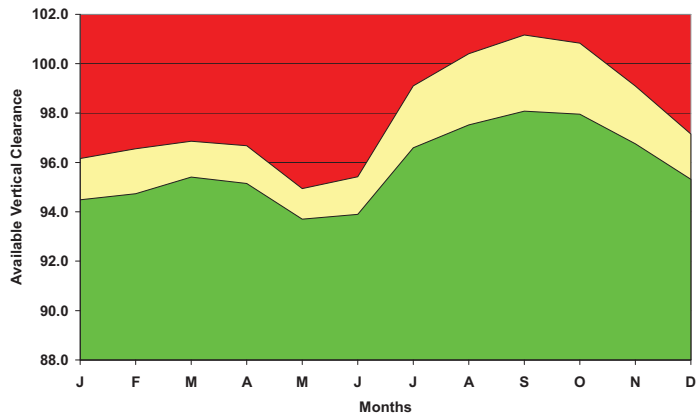
Tugs & Tows (300' Horiz. Cl.)



Marine Contractors (100' Horiz. Cl.)



High Mast Sailboats (50' Horiz. Cl.)



Large Cranes used by marine contractors may not be able to pass under the bridge year round. However, the Boat Survey indicated that Marine Contractor vessels travel under the Interstate Bridges infrequently and, in the future, it may be possible for them to lower or disassemble crane gantries, reducing their height to meet clearances. This same vessel may be able to pass under the bridge, during a mid-June through mid-November time period, if a 100 feet wide navigation channel is acceptable and reduce the required vertical clearance to 100 feet

It is important to note that the clearance estimates in Exhibit 5-2 for marine contractors and high mast sailboats are based on a bridge design that uses haunched trusses, in which the trusses are thinner near the center of their spans and gradually thicker toward either end of the span. This results in higher vertical clearance near the center than toward the sides of the navigation channel passing under the bridge span. If the trusses are not haunched, then the vertical clearances would be generally uniform across the span, and all vessels or loads (whether barges, contractors or sail boats) taller than 86 to 88 feet but not taller than 90 to 94 feet (depending on the year) would only be able to pass under the bridge during parts of the year. For a bridge with non-haunched trusses, seasonal clearance for all vessels would be essentially the same as shown for tugs and tows in the first graph in Exhibit 5-2.

As is evident from the FEIS's Navigation Technical report, the river fluctuates during the year with water levels varying throughout the length of the river and over time. This has been considered in setting the bridge height and evaluating navigation impacts. The Columbia River Datum (CRD) is an elevation reference point for the Columbia River.

USCG COMMENT 1 (PARAGRAPH 5, 6 & 7):

Provide data regarding frequency of use, and vertical and horizontal clearance requirements for all vessels transiting the waterway, including any cargos that would require additional vertical clearance.

For vessels that require a bridge opening at the current I-5 bridge, provide the following information:

- Vessel name
- Length overall (LOA)
- Beam
- Draft
- Height of the highest fixed point above the waterline for vessels that required a bridge opening

List the number and type of vessels that will no longer be able to transit the LPA and provide the following data for each vessel:

- Vessel name
- Length overall (LOA)
- Beam
- Draft
- Height of the highest fixed point above the waterline for vessels that required a bridge opening

CRC RESPONSE TO COMMENT 1 (PARAGRAPH 5, 6 & 7):

As described in the DEIS, FEIS and Navigation Technical Report, a boat survey was completed in 2004 to determine the type of vessels traveling this river section and their clearance requirements. This survey included the frequency of use and the vertical and horizontal requirements for the different river users and is based on fleet data rather than individual vessels. This information is summarized in Exhibit 3.2-4 of the FEIS. There is more detailed information, incorporated by reference from the Boat survey, including the following table:

Vessel Type	Clearance Requirement at 0 ft CRD	Approximate Annual Frequency
<i>Tugs, Tows</i>		
Tower tugs - mast up	58'4"	>500
- mast down	49'	
<i>Sailboats-Recreation</i>		
Portland Yacht Club	88'	24
Portland Yacht Club	76'	24
<i>Marine Contractors</i>		
Manson	110'	NA
Kiewit/General	100'	NA
<i>Marine Industrial</i>		
Christianson Yacht	65'	6
<i>Cruise/Passenger Vessels</i>		
Cruise West	50'	25
American West	60'	25

The CRC project will prepare an Air Draft Analysis to commence prior to March 2012 as part of the USCG Section 9 permit process. This survey will focus on two things; 1) users that *require* a bridge opening at the current I-5 bridge and 2) users that would require additional vertical clearance over the minimum clearance identified in Table 1. It will include the following information:

- Vessel Name
- Length overall
- Beam
- Draft
- Height of the highest fixed point above the waterline for vessels that will not be able to pass with clearances identified in Table 1 above
- Quantitative research/documentation of stated needs by potentially impacted users, including operating costs (provided by the user)

USCG COMMENT 2:

2	3-74,	The following statement is included on this page: "Limitations to marine contractors
	Section 3.2.3, para 3	would be offset by substantially improved navigational safety and elimination of river traffic delays. Tall loads would need to partially disassemble for those infrequent trips upriver of the LPA." To validate the above statement, the Coast Guard requests documentation of all vessels and cargoes that will need to be partially disassembled/dismantled in order to transit the LPA, and whether they currently possess that capability. In addition, provide the name of the vessels and any increase in operating cost associated with the required disassembly or dismantling.

CRC RESPONSE TO COMMENT 2:

Refer to response above as it relates to the Air Draft Analysis. As it relates to the cargo, we will need to rely on the businesses to provide this information.

USCG COMMENT 3:

3	3-72 – 3.75	<p>The FEIS does not address current and future impacts to navigation/waterway users as a result of the proposed decreased vertical clearance provided with the LPA nor does it study alternatives with a vertical clearance other than 95'. The Early Screening Results Table (Appendix D) shows initial consideration for a High-Level Bridge, but it received a "Fail" rating for not improving safety and not decreasing vulnerability to incidents. The High-level bridge alternative's Long Term Effects needs to be addressed in this section of the FEIS based on updated vessel clearance requirement data and information collected on upstream growth and development. (See Comment # 1 and 2 above for more information)</p> <p>The FEIS states that the primary channel will provide a minimum of 95' above the zero Columbia River datum; due to higher water levels on the river, zero datum is rarely attained. List the available vertical clearance during various times of the year in this chapter, not just in the appendix under the "2008 Navigational Technical Report".</p>
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CRC RESPONSE TO COMMENT 3:

As described in Appendix D of the FEIS, the project conducted early screening of 70 different crossing and transit components in 2006, following several months of public and agency input and data collection. The early round of screening eliminated low-level and high-level bridges from further consideration. This screening used a pass/fail test to determine which components should be forwarded for additional consideration, and which should be dropped. Components were eliminated from further consideration if they failed any of the relevant six questions related to meeting or not meeting the project's purpose and need.

- The initial screening in April 2006 eliminated river crossing types and transit modes that did not meet the project's purpose and need, including:
- A replacement tunnel, which failed to serve most of the current vehicle trips
- High-level bridges that encroached substantially further into protected airspace for Pearson Airfield and failed to adequately meet the safety-related need for the project.
- Transit modes, such as high-speed rail, ferry service, monorail, magnetic levitation railway, commuter rail in freight rail corridor, and heavy rail, that do not effectively serve the specific transit market needs for the project.
- A third corridor for crossing the Columbia River, which failed to adequately address the safety, mobility, transit and bike and pedestrian needs identified for the project.

Following the screening and prior to developing the Navigation Technical Report, the project met with the USCG on January 25, 2007 to discuss the proposed bridge height of 95 feet above zero CRD. As stated in the Navigation Technical Report (pg 3-2) the project moved forward with the understanding that it was in the ballpark of what may be acceptable. The USCG stated that they could not accept or reject proposed clearances until a Record of Decision (ROD) is issued for the project.

Mid-level bridges (approximately 95 feet vertical clearance above 0 CRD) were able to meet all relevant elements of the purpose and need. Given this, there was no reason or requirement to further evaluate the environmental impacts of high-level bridges, or to include high level bridges in the detailed environmental analysis documented in the DEIS and FEIS.

USCG COMMENT 4:

4	3-76	Section 3.2.5 (Mitigation or Compensation) does not address mitigation proposed for those vessels and companies that will no longer be able to transit the LPA's reduced vertical clearance.
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CRC RESPONSE TO COMMENT 4:

The project has not identified any users or companies that will be entirely prohibited from transiting under the proposed bridge. There have been some impacts identified that represent a portion of operations for some users. The impacts have been documented in the DEIS, FEIS and the Navigational Technical Report, which is incorporated by reference in the EIS.

Any mitigation for these impacts would be associated with the permitting process and is not required given the impacts identified under the NEPA analysis. The impacts of a vertical clearance of 95 feet over zero CRD are:

- An existing marine contractor (TMF) may not be as competitive on future bidding for potential future selected contracts. In the six years since the CRC planning began, TMF has had one contract that required over 95 feet above zero CRD vertical clearance, and it is not clear that they could not have engineered that project to allow it to ship at less than 95 feet above zero CRD. Further analysis on this topic would be required following an Air Draft Analysis.
- A construction project at Bonneville Dam in 1999 used a crane that, when transported by barge, had an air draft higher than 95 feet above zero CRD. This crane could have been partially disassembled for transport, or crane requiring less vertical clearance could have been used.
- No additional deep water ports exist upriver from the Port of Vancouver and the Port of Portland, nor are there plans or concepts for such.

Although the impacts identified above would not warrant a quantified mitigation, the CRC Project will conduct an Air Draft Analysis, as identified in responses above.

USCG COMMENT 5:

5	3-97	Section 3.4 (Land Use and Economic Activity) does not address the reduced vertical clearance's impact on present and prospective upstream commercial activity, e.g. jobs, and economic growth and development. Address any existing or planned commercial/industrial developments negatively affected by the reduced vertical clearance and discuss the economic impacts the proposed restriction will have on these businesses.
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CRC RESPONSE TO COMMENT 5:

With the exception of some specialized vessels that use the river infrequently, the overwhelming majority of vessels require vertical clearances of less than 95 feet above zero CRD from the surface of the water to the bottom of the bridge deck. The Project, in consultation with the USCG and industry representatives established a vertical minimum of 95 feet above zero CRD clearance for the new bridge, so that the new structure could be built without a lift span. Higher vertical clearances beneath the bridge would require substantially greater intrusion into Pearson Airfield's restricted airspace.

The mid-level bridge would prevent vessels with higher masts from using the area upriver from the bridge.

The mid-level bridge will also have potential impacts to Thompson Metal Fabricators (TMF), located upriver from the I-5 crossing as indicated by the category (Marine Contractors) in the FEIS Exhibit 3.2-4. TMF has previously shipped cargo with heights of greater than 95 feet above zero CRD. Though these shipping needs are infrequent, the company would potentially have to differently construct or ship these cargos in the future and this change could lessen the competitive advantage of the company for certain contracts. Thus, while TMF may be adversely impacted on occasion, with the overwhelming majority of vessels not being impacted, a detailed economic analysis of future business losses was not warranted or conducted for the FEIS for any business.