APPENDIX J: KAISER SHIPYARD MEMORANDUM

MEMORANDUM

Date: June 20, 2025
To: Hayli Reff, Cultural Resources Program Manager – Interstate Bridge Replacement Program
CC: Bill Warncke, Deputy Environmental Manager – Interstate Bridge Replacement Program
From: Maureen McCoy, MSHP, and January Tavel, MHP
Subject: History of Shipbuilding at Kaiser Shipyard, Vancouver, Washington, Memorandum

INTRODUCTION

The Interstate Bridge Replacement Program (IBR Program) is proposing to replace the Oregon-Washington Bridge on Interstate 5 (I-5) over the Columbia River in Portland, Oregon and Vancouver, Washington. As a part of the review of design options under the National Environmental Policy Act (NEPA) Supplemental Environmental Impact Study (SEIS), the IBR Program is evaluating a fixed bridge option. Located in Vancouver, Washington, the Kaiser Shipyard constructed large ships during World War II to support military operations. To better understand this history of these large ships in the vicinity of the bridge, the IBR Program has retained Parametrix to prepare this technical memorandum to support this analysis. This technical memorandum describes the history of shipbuilding at the Kaiser Shipyard in Vancouver, Washington during World War II, and specifically addresses the types and sizes of the vessels constructed.

SHIPBUILDING DURING WORLD WAR II

From 1940 to 1945, the United States launched approximately 4,600 ships, a stunning increase from the 23 ships produced through the 1930s (Bonnett 2020). The Emergency Shipbuilding Program led by the U.S. Maritime Commission sites that supported the war efforts were located across the country, including eight sites on the Atlantic coast, five on the Gulf Coast, six along the Great Lakes and inland waterways, and 10 on the Pacific Coast (U.S. Department of Transportation Maritime Administration 2022a; Shipbuildinghistory.com n.d.). Overall, 52 percent of all wartime ships were constructed on the Pacific Coast (National Park Service 2024). Just over 30 percent of these ships, 1,400 vessels, were constructed in the San Francisco Bay area alone. They were produced at over 30 shipyards of varying sizes in areas like Richmond, Napa, Sacramento, Stockton, and San Jose. Several companies and industrialists supported this effort by constructing new shipyards (Bonnett 2020). One such industrialist, Henry J. Kaiser, constructed four shipyards in Richmond, California, two in Portland, Oregon, and one in Vancouver, Washington, making his one of the largest operations on the Pacific Coast. The Richmond shipyards produced 747 vessels during the war, approximately half of the 1,497 ships produced by Kaiser shipyards (Bonnett 2020). Ultimately, Kaiser's shipyards built approximately 32.5 percent of all the vessels produced for the war.

KAISER SHIPYARD IN VANCOUVER, WASHINGTON

Henry J. Kaiser was born in America in 1882 to German immigrant parents. Due to the loss of his mother in 1899 and the declining health of his father, Kaiser took on work to support his family at an early age. After

selling the photography business he owned, he moved to Spokane, Washington in 1906 and worked his way up to a wholesale sales manager for McGowan Brothers Hardware. In 1914, he purchased a failing Canadian construction company and founded the Henry J. Kaiser Company, Ltd. Kaiser was a pioneer, investing in new road-paving technology, and had a reputation for speedy work. His company earned a number of state and federal construction contracts in the 1920s and would go on to support the construction of the Bonneville, Hoover, and Grand Coulee dams over the next few decades. In 1940, Kaiser and his short-term partner Tood Shipyards, constructed a shipbuilding facility in Richmond, California to support the war efforts. While this was the main facility, Kaiser soon opened shipyards in Portland, Oregon and Vancouver, Washington (Ebal 2024).

Located on 200 acres of land on the north side of the Columbia River, Kaiser's Vancouver Shipyard began producing ships as commissioned by the U.S. Maritime Commission in 1942, employing approximately 38,000 workers (Oliver 2022). Despite the call for workers to new facilities such as the Kaiser shipyard, the thousands of Black Americans who moved across the country to claim these and similar jobs found that they were excluded from many opportunities. Conflicts between the Kaiser Company, Boilermaker's Union, and Black workers over discriminatory hiring and training practices led the company firing 200 workers in July 1943. A condemnation of these firings by the Fair Employment Practice Committee (FEPC) and similar lawsuits in other states did little to change the discriminatory practices among the union and employer. It was not until 1945 that the Kaiser Company agreed to abide by the findings of the FEPC and follow Executive Order 8802 (Linder 2019). Women were also among the workers at the shipyard, and many worked as welders, riveters, and electricians. However, Black women were often relegated to clean-up crew or laborer positions. From an initial 283 women working at the shipyard in 1942, the number rose to 10,600 by 1944 (Gibbs 2024).

Workers on the assembly lines were building the approximately 11 vessels simultaneously by the summer of 1943, and the ship launches drew huge crowds, including some 75,000 spectators who attended the launch of *USS Casablanca* by First Lady Eleanor Roosevelt that same year. Increasing efficiency in the assembly line system allowed the shipyard to produce an aircraft carrier in only 3.5 months, less than half of the original production time (Vogt 2013). This efficiency allowed the shipyard to complete the production of 50 commissioned escort aircraft carriers by 1944 (MacDonald 1962). After the war ended in 1945, federal funding for ship production was halted, and in 1946 the last three cargo ships at the Kaiser Vancouver Shipyard were completed (*The Olympian* 1946:4).

Vessels Constructed

There are several accounts of the total numbers of ships produced at the Kaiser Shipyard in Vancouver, but most agree that the Kaiser Shipyard in Vancouver produced 141 vessels of five types, excluding vessels that may have been commissioned but were "canceled" or for which construction did not occur for or reasons that were not identified during research conducted for the preparation of this memorandum (Gerhardt 2004; Shipbuildinghistory.com 2021b; Vogt 2013). This total included 10 Liberty ships, 30 tank-landing ships, 50 Casablanca-class escort aircraft carriers, 31 attack transports, 12 troop transports, and eight cargo ships; the latter ship types two were in the same vessel classification (Ebel 2024; Shipbuildinghistory.com 2021b; U.S. Department of Transportation Maritime Administration 2022b; Vogt 2013).

The sizes of these vessels varied slightly by individual vessel within each type. Table 1 provides average dimensional data based on available sources. In the context of this memorandum, length is considered to be the distance from stern to bow, beam refers to the widest point of the vessel, and draft refers to the distance between the keel and the waterline representing how deep the vessel sits in the water. Total height specifications are measured as noted below and represent the tallest typical features; they may not include all possible features, such as antennae. In addition to these dimensions, Table 1 also includes an air draft calculation, which represents the height of the ship above the waterline as defined by the total height minus the draft (maximum portion of the ship below the waterline).[1] For additional context, the Columbia River primary navigation channel authorized depth is -27 feet, and the US Army Corps of Engineers maintained depth is -17 feet.

Table 1. Types of Ships Constructed at the Vancouver, WA Kaiser Shipyard, 1942-1946

Ship Type	Common Name	Total Produced	General Dimensions
EC2-S-C1	Liberty ship	10	*Length:* 441 feet 6 inches *Beam*: approximately 57 feet *Total Height:* approximately 102 feet[a] *Draft:* approximately 27 feet 7 1/8 inches to 27 feet 9 inches *Air Draft:* 74 feet 3 inches
LST	Landing ship	30	*Length:* 328 feet long *Beam:* approximately 50 feet *Total Height:* 87 feet 10 inches[b] *Draft:* 12 feet 4 inches *Air Draft:* 75 feet 2 inches
S4-S2-BB3	Casablanca-class escort aircraft carriers	50	*Length:* 512 feet 3 inches *Beam:* 65 feet *Total Height:* 125 feet[c] *Draft:* up to 22 feet *Air Draft:* 103 feet

[1] The air draft information was calculated by the author based on the ship specifications for draft and total height identified through research.

Ship Type	Common Name	Total Produced	General Dimensions
VC2-S-AP5	Victory ship type; Attack transport	31	*Length:* approximately 455 feet *Beam:* 62 feet *Total Height:* 109 feet[d] *Draft:* up to 28 feet *Air Draft:* 81 feet
C4-S-A3	Troop transport	12	*Length:* approximately 523 feet *Beam:* approximately 72 feet *Total Height:* 79 feet 6 inches[e] *Draft:* up to 33 feet *Air Draft:* 46 feet 6 inches
C4-S-A4	Cargo transport	8	

[a] Clayton 2011; Davies 2004; Oliver 2022; U.S. Maritime Commission N.d. The height represents the distance from the telescopic mast to the bottom of the keel plate (U.S. Maritime Commission n.d.).

[b] Foute Man Productions 1942; Hickman 2019; NavSource 2023; San Francisco Maritime National Park Association 1956; USS LST 393 Veterans Museum 2025. The height represents the distance from the keel to the airplane light atop the signal mast (Foute Man Productions 1942).

[c] MacDonald 1962; San Francisco Maritime National Park Association 1945; U.S. Department of Transportation Maritime Administration 2022b. The height represents the distance from the keel of a typical ship to the tallest features listed in the plans, including the truck light, masthead light, and S.G. radar platform (San Francisco Maritime National Park Association 1945).

[d] American Victory n.d.; Clayton 2007; U.S. Department of Transportation Maritime Administration 2022c; World War II Database 2010. The height specification is not detailed in available sources but represents the height of a typical example (American Victory n.d.).

[e] American Merchant Marine at War 2000; Charles 1947; Kaiser Co. Inc. 1945; Van Arsdol 1971:18. The C4 type vessels are listed as a group in dimensional references. The height represents the distance from the keel to the top of the stack (Kaiser Co. Inc. 1945).

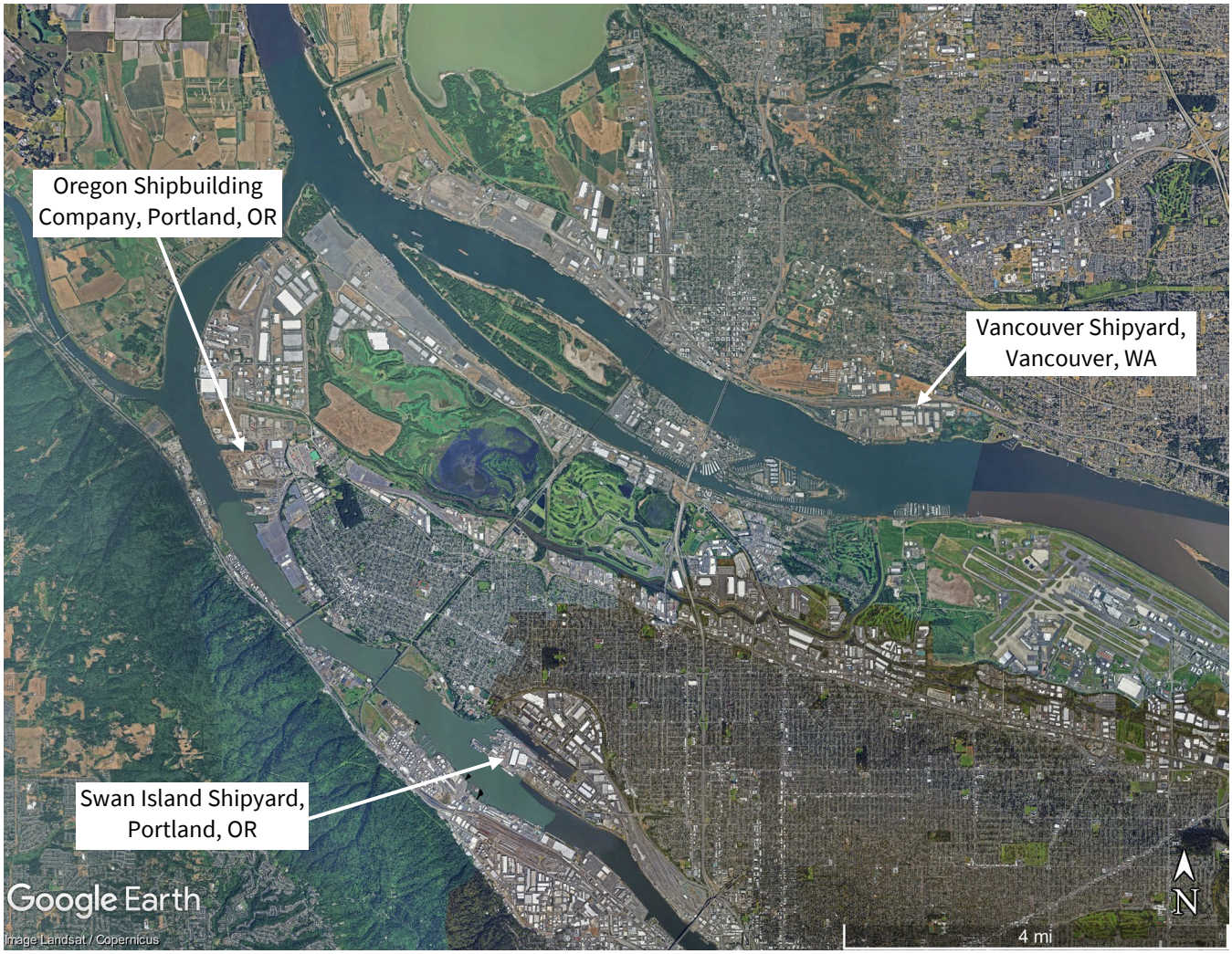
Kaiser Shipyards in Portland-Vancouver Vicinity

During World War II, Kaiser established two other shipyards in nearby Portland, Oregon. The first, the Oregon Shipbuilding Company, opened in 1941 and was located on the Willamette River. This shipyard started on 87 acres producing ships for the British government but soon expanded to 300 acres to produce ships for the U.S. Maritime Commission. This shipyard produced 330 Liberty ships, 99 Victory ships, and 33 Attack Transports (Oliver 2022). The second shipyard, the Swan Island facility, produced 147 T-2 tankers between 1942 and 1945 (Shipbuildinghistory.com 2021a; Willingham 2024). While estimates vary slightly, in total, the three Kaiser shipyards in the Portland-Vancouver vicinity produced approximately 750 vessels during the war, comprising just over 16 percent of the total vessels produced during the war (Oliver 2022). Based on this information, the 141 ships produced at the Vancouver Shipyard represented just under 19 percent of the total number of ships produced in the Portland-Vancouver vicinity, and approximately three percent of the total ships produced in the United States during the war. Table 2 provides a summary of this production. Figure 1 shows the locations of the three shipyards in the Portland-Vancouver area.

Table 2. Total Ships Produced at Kaiser Shipyards in Portland-Vancouver Area, 1941-1946

Shipyard Name	Location	Types of Ships Produced	Total Ships Produced
Oregon Shipbuilding Company	Portland, Oregon	330 Liberty ships 99 Victory ships 33 Attack transports	462
Swan Island Shipyard	Swan Island, Oregon	147 T-2 Tankers	147
Vancouver Shipyard	Vancouver, Washington	10 Liberty ships 30 Tank-landing ships 50 Casablanca-class escort aircraft carriers 31 Attack transports 12 Troop transports 8 Cargo ships	141

Figure 1. Kaiser Shipyard in Portland-Vancouver Area



CONCLUSION

Based on the above information, the following percentages summarize the contributions of the shipyards in the Portland-Vancouver area to the war efforts in the 1940s:

- The vessels produced at all seven Kaiser shipyards on the Pacific Coast represented approximately 32.5 percent of all vessels produced during the war in the United States.
- The vessels produced at the three Kaiser shipyards in the Portland-Vancouver area encompasses approximately 16 percent of the total vessels produced during the war in the United States.
- The vessels produced at the Vancouver Shipyard represented approximately three percent of all vessels produced during the war in the United States.

RESOURCES FOR FURTHER RESEARCH

The scope of this memo is limited to a general overview of the Kaiser Shipyard in Vancouver and the vessels produced at the facility. Additional references for future research include materials that are not available for online research and materials related to the workers and processes of the facility. These references may be consulted in future as needed, and they include the following:

- University of Maryland Special Collections, Oregon Shipbuilding, Corp, Kaiser Shipyards, 1943.
- Bedford collection, 1940-1945, Richmond Museum of History, Richmond, California.
- *Bo's'n's Whistle*, a regular publication distributed to Oregon Shipbuilding Corporation employees, https://digitalcollections.ohs.org/informationobject/browse?ancestor=577556&topLod=0&view=card&onlyMedia=1.
- *Build 'Em By the Mile, Cut 'em off by the Yard* by Steve Gilford.
- *U.S. Battleships: An Illustrated Design History* by Norman Friedman.
- *U.S. Aircraft Carriers: An Illustrated Design History* by Norman Friedman.

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