



## MEMORANDUM

**To:** SR 520 Program Files

**From:** Randy Everett, FHWA Major Projects Oversight Manager;  
Allison Hanson, WSDOT ESO Mega Projects Environmental Director

**Date:** July 16, 2012

**Copies To:** John White, WSDOT SR 520 Floating Bridge & Landings Project Director;  
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Jenifer Young, SR 520 I-5 to Medina: Environmental Manager;  
Rona Spelleccacy, SR 520 Environmental Planner;  
Tessa Gardner-Brown, SR 520 I-5 to Medina: Environmental Planner

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**Subject: SR 520, I-5 to Medina: Bridge Replacement and HOV Project –  
Revised Design of the Temporary Eastside Over-water Staging Area**

The purpose of this memorandum is to document National Environmental Policy Act (NEPA), State Environmental Policy Act (SEPA), Endangered Species Act (ESA), and Section 106 and 4(f) compliance for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project (Project) associated with proposed changes to the temporary eastside over-water staging area that was evaluated in the SEPA Addendum for the Floating Bridge and Landings Phase of the Project, approved in November 2011, the NEPA Environmental Reevaluation for the Floating Bridge and Landings Phase of the Project, approved in January 2012, and the Proposed Changes to Construction Elements and Delivery Methods for the Floating Bridge and Landings Phase of the Project Memorandum, approved in May 2012.

Environmental documentation for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project includes the Final Environmental Impact Statement (June 2011) and supporting discipline reports, the Record of Decision (August 2011), SEPA Addenda (October and November 2011), NEPA Environmental Reevaluations (December 2011, January 2012, and July 2012), as well as subsequently filed memoranda. Recently proposed changes to the single-longitudinal pontoon staging area, which supports construction of the east approach and floating bridge, have been compared to findings in the Final Environmental Impact Statement (FEIS), Record of Decision (ROD), and other existing reports and documentation. The proposed modification and potential environmental effects are described below.

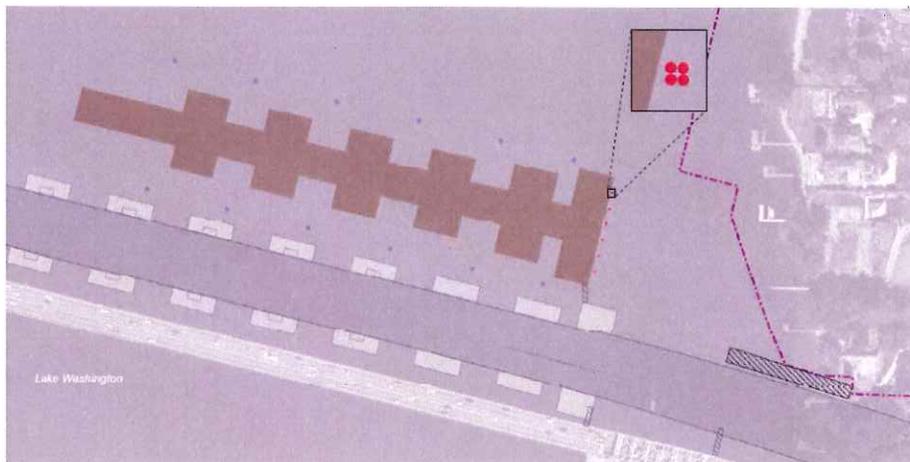
## Revised Design of the Temporary Eastside Over-Water Staging Area

### *Previous Design Assumptions – Temporary Eastside Over-water Staging Area*

As described in the Final EIS, ROD, November 2011 Floating Bridge and Landings SEPA Addendum (herein, SEPA Addendum), January 2012 Floating Bridge and Landings NEPA Environmental Reevaluation (herein, NEPA Reevaluation), and May 2012 memorandum that described proposed changes to construction elements and delivery methods for the floating bridge and landings phase of the project (herein, May 2012 memorandum), construction along SR 520 would be staged from both land and water. In the Final EIS, WSDOT identified ten potential land-based staging areas, and noted that over-water construction activities would use barges to access the pontoons while being assembled in their final alignment. Barges would be used to stage construction materials, store construction equipment, transport demolition debris, provide work areas for construction personnel, and store tanks for water containment and treatment of process water.

In the SEPA Addendum and NEPA Environmental Reevaluation, WSDOT identified one over-water staging area located near the east approach, for pontoon outfitting and to assemble bridge elements (see Exhibit 1 below). This eastside staging area was proposed to have been located approximately 100 feet north of the new floating bridge alignment and approximately 450 feet from the eastern shore of Lake Washington, within the limits of construction. To accommodate up to 16 pontoons (longitudinal and supplemental) and associated barges, this staging area could have resulted in up to 4.1 acres of over-water coverage at any given time during the 3-year bridge construction period.

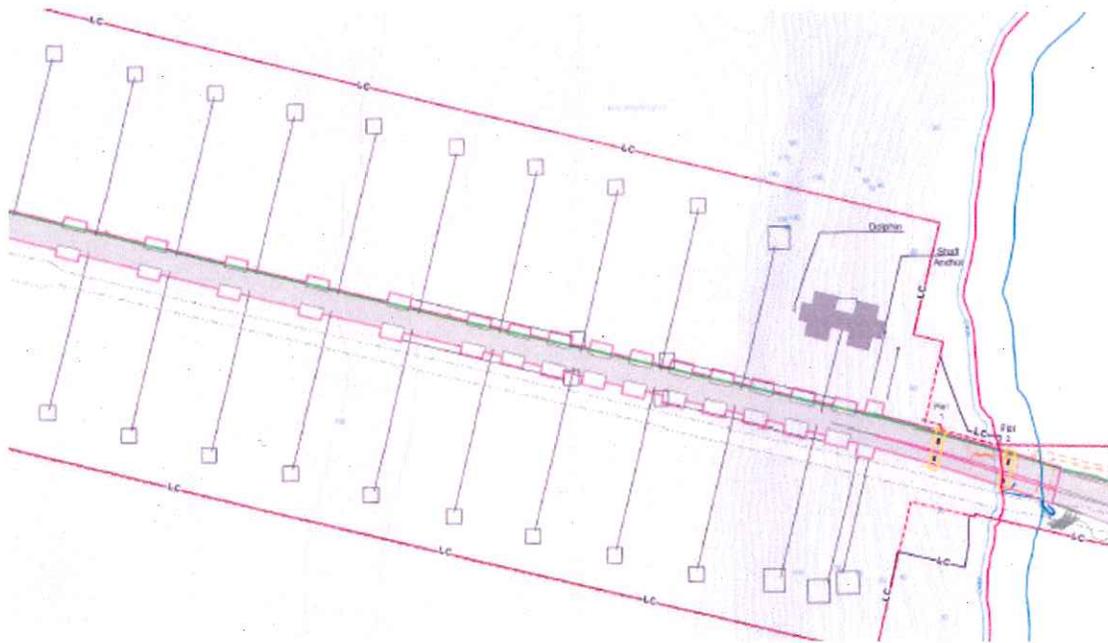
The pontoons would have been secured at the eastside staging area with temporary Danforth type anchors and six mooring dolphins, each consisting of four 30-inch-diameter steel pilings. The piles would be installed with vibratory methods and, if needed, could have been proof-tested with an impact hammer. The mooring dolphins would have been located in shallow water (approximately 40 feet deep), and would have displaced approximately 118 square feet of benthic substrate.



**Exhibit 1 - Previous Design (January 2012 NEPA Reevaluation)**

Upon further consideration and evaluation of the need for and design of the eastside staging area, and recognition of potential issues related to wind-loading on the pontoons, WSDOT replaced the above described staging area for a staging area with a smaller design.

The 16-pontoon staging area that was proposed in January 2012 was reduced to a staging area designed for single-pontoon moorage. The changes were documented in the internal May 2012 memorandum. The May 2012 design accommodates one longitudinal pontoon and allows for the joining of four supplemental pontoons (see Exhibit 2 below). The foundational support for the staging area has been installed in Lake Washington, and is located approximately 500 feet north of the new bridge alignment and approximately 400 feet from the eastern shore of Medina. As with the January 2012 design, the staging area does not extend outside of the limits of construction and will be removed after construction is completed, in approximately 3 years.



**Exhibit 2 - Previous Design (Internal Memorandum, May 2012)**

Upon delivery, the longitudinal pontoon will be secured at the west end of the staging area to a mooring dolphin, which consists of three 60-inch-diameter steel pilings. The east end of the staging area utilizes the steel casing for one of the permanent drilled shaft anchors from the floating bridge. Pontoon assembly will be positioned between the mooring dolphin and the shaft anchor using mooring lines attached to the corners of the longitudinal pontoon. The piles and shaft casing were installed using vibratory methods only.

This smaller design has reduced the overall footprint and impact to the benthic substrate of Lake Washington compared to the January 2012 design, which was described in the SEPA Addendum and NEPA Environmental Reevaluation. The maximum over-water coverage decreased from an anticipated 4.1 acres to approximately 1.2 acres, and the impact to benthic substrate decreased from 118 square feet to approximately 59 square feet. The changes reduced the overall number

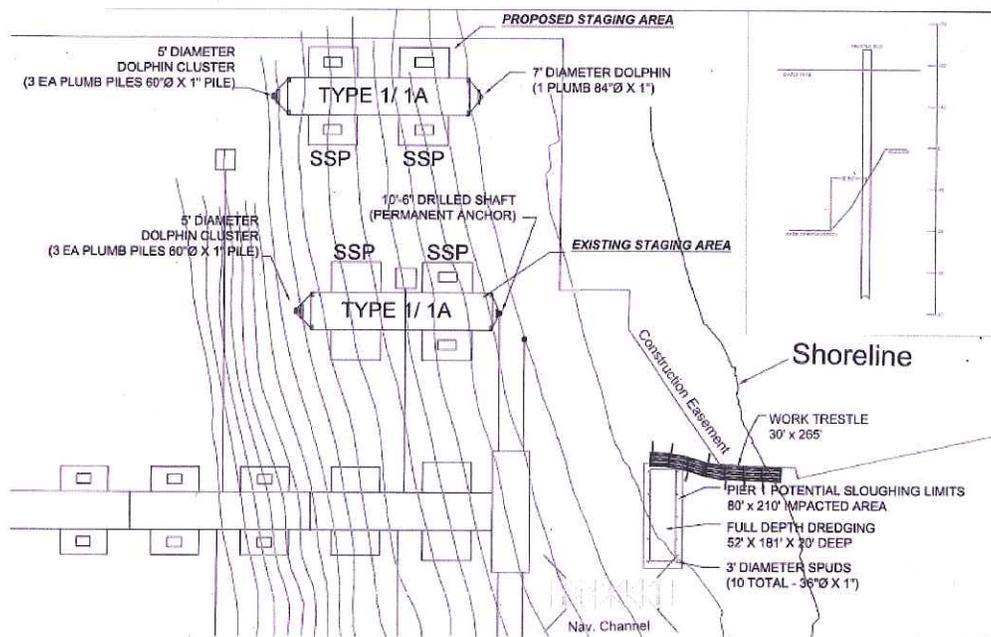
of in-water piles from 24 to 4, including the drilled shaft casing and the three-pile mooring dolphin.

**Current Design Assumptions – Temporary Eastside Over-water Staging Area**

The staging area designed in May 2012 can adequately accommodate pontoon outfitting, and the reduction in size and capacity from the January 2012 design was not expected to delay the current bridge construction schedule. However, a revision to the design is now necessary because of recent delays in pontoon construction. Consistent with the discussion included in the May 2012 memorandum, WSDOT now proposes to install a second single-longitudinal pontoon staging area. The May 2012 memorandum noted that “[i]f WSDOT decides that this staging area would be needed to maintain schedule and progress, appropriate environmental documentation would be prepared at that time.” The staging area remains an integral component of construction, and installation of a second staging area that closely resembles the May 2012 design will aid in timely project delivery.

The second staging area included in this proposed design would have a configuration similar to the May 2012 single-longitudinal pontoon staging area; it would accommodate one longitudinal pontoon and allow for the joining of four supplemental pontoons (see Exhibit 3 below). Simply, an additional staging area would be installed on the lake, and would be a close replica of the May 2012 design.

The east end of the staging area would utilize one 84-inch steel pile, and the west end would be secured with a mooring dolphin that consists of three 60-inch-diameter steel pilings. The piles would be installed using a vibratory pile driver; no impact pile driving is anticipated. Pontoon assembly would be positioned between the mooring dolphin and the shaft anchor using mooring lines attached to the corners of the longitudinal pontoon.



**Exhibit 3 – Current Design (two eastside staging areas)**

The second staging area would be located approximately 400 feet north of the existing (May 2012) staging area; 900 feet north of the existing bridge and approximately 300 feet from the Medina shoreline. Consistent with the previous designs, the staging area will not extend outside of the limits of construction, and will be removed after construction is completed, in approximately 3 years.

### **Consistency with Existing Environmental Documents**

As mentioned, with the addition of the proposed design, the Eastside over-water staging area would include two single-longitudinal pontoon staging areas, each consisting of five individual pontoons (one longitudinal pontoon and four associated supplemental stability pontoons). While installation of the proposed second staging area would add an additional component to the May 2012 design, the combined Eastside over-water staging area design would still represent a decrease in over-water coverage of the shoreline area compared to the larger January 2012 Eastside over-water staging area configuration. The maximum over-water coverage of the combination of the May 2012 and the proposed design would be approximately 2.3 acres; roughly 45 percent less than the over-water coverage described in the January 2012 NEPA Reevaluation.

The May 2012 design combined with the proposed design would also reduce substrate disturbance in shallow-water habitat (less than 40-feet deep) compared to the January 2012 design; however, overall impact to the benthic substrate would increase. The configuration would have an overall benthic impact of 137 square feet. Approximately 38.5 square feet of the benthic impact would be located in shallow water habitat and the remaining disturbance would occur in deep water, outside of the shoreline areas that are principally used by juvenile salmonids, and where habitat use by aquatic species is limited due to lack of sunlight and dissolved oxygen. Comparatively, the January 2012 design would have disturbed 118 square feet of benthic substrate in the shallow water habitat.

The configuration also reduces the number of in-water piles to 8 (including the permanent drilled shaft casing), from the 24 included in the original eastside staging area design.

Although the configuration would increase impacts compared to the May 2012 staging area, the change would result in a reduction in impacts compared to those of the January 2012 design, discussed in the SEPA Addendum and NEPA Reevaluation. Compared to the January 2012 design, over-water coverage would decrease from 4.1 acres to approximately 2.3 acres, the overall number of in-water piles would be reduced from 24 to 8, and benthic impacts within shallow-water aquatic habitat would decrease from 118 square feet to 38.5 square feet. Additionally, all impacts would remain less than those described in the Final EIS.

A WSDOT Biologist has reviewed the potential construction changes, and has provided an update to the U.S. Fish and Wildlife Service and National Marine Fisheries Service (Services). Through this update, the Services and WSDOT have determined that reinitiation of formal

consultation under the Endangered Species Act (ESA) would not be required for ESA compliance.

The proposed construction changes will not require upland ground disturbing activities, and will not affect adjacent historic resources. A WSDOT Cultural Resources Specialist has determined that no additional analysis or consultation is necessary for Section 106 compliance or Section 4(f) compliance.

As documented above, the project remains compliant with current federal, state, local, and departmental regulations and directives with regard to NEPA/SEPA processes, the Endangered Species Act, Section 106 and 4(f). Therefore, no additional environmental review is required.

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We have reviewed and agree with the contents of this memorandum.

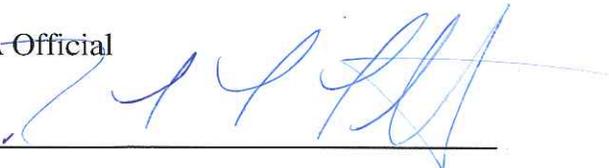
Region / Mode Official



Date



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