



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, Washington 98115

NMFS Tracking No.:
2011/05917

January 11, 2012

Daniel M Mathis
Federal Highway Administration
Suite 501, Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284

Re: Reinitiation of Endangered Species Act Section 7 Consultation for the State Route 520 Bridge Replacement Project. King County, Washington. (HUC 171100120302, Lake Washington)

Dear Mr. Mathis:

The National Marine Fisheries Service (NMFS) recently received and reviewed your request to reinitiate Endangered Species Act (ESA) consultation for the State Route 520 Bridge Replacement Project in King County, Washington. On May 20, 2011, NMFS completed formal consultation on this project and issued a Biological Opinion (Opinion) (NMFS Tracking Number 2010/05723). The Opinion concluded the proposed action would not jeopardize the continued existence of the Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionarily Significant Unit (ESU) and the PS Distinct Population Segment (DPS) of steelhead (*O. mykiss*) and is not likely to destroy or adversely modify PS Chinook critical habitat. This action is funded in part by the Federal Highway Administration (FHWA) and is being carried out by the Washington State Department of Transportation (WSDOT).

On December 8, 2011, FHWA submitted a letter to NMFS describing changes to the project. Due to funding constraints, WSDOT is implementing the project in phases. The funded phase, the Floating Bridge and Landings (FBL), includes replacement of the floating bridge, the east approach, and the new maintenance facility at the east approach. This reinitiation covers the changes to these portions of the proposed action. This letter will also correct an error in the original take statement, clarify the language of one term and condition, and change the date of a reporting requirement in another term and condition.



Changes to the Proposed Action (Floating Bridge and Landings)

Floating Bridge Area

In WSDOT's original description of the floating bridge (section 1.3.2.5 of the May 20, 2011 Opinion), they proposed 58 anchors (45 fluke anchors and 13 gravity anchors) for the pontoons. The current design reduces the number of gravity anchors to eight, for a total of 53 anchors.

The WSDOT has also proposed a temporary staging area in Lake Washington. The staging area will be approximately 100 feet to the north of the location of the new bridge in 40 feet of water. WSDOT will construct the staging area approximately 450 feet from the Medina shoreline and will stage up to three barges and 10 pontoons at any given time. WSDOT will use six mooring dolphins and temporary anchors to secure the pontoons. Each mooring dolphin will consist of four, 30-inch diameter steel piles for a total of 24 piles.

East Approach Temporary and Permanent Structures

Permanent East Approach Bridge In-Water Pier

As with the original design (section 1.3.2.6 of the May 20, 2011 Opinion), the new east approach will have two piers, one of which will be in Lake Washington. However, WSDOT has changed the design of the piers. The new design will replace the two mudline footings with two spread footings. This will eliminate the need for drilled shafts. The spread footings will be buried below the substrate, and each footing will support a single rectangular column. The north column will measure 24 feet by 20 feet, and the south column will measure 20 feet by 10 feet.

Maintenance Dock

The original design for the maintenance dock (section 1.3.2.6 of the May 20, 2011 Opinion) proposed to support the dock with five drilled shafts (each shaft supporting a single column). The new design will replace the drilled shafts with ten, 24-inch concrete piles, nine of which will be in the water.

Temporary Work Bridges

In the original design (section 1.3.2.6 of the May 20, 2011 Opinion), WSDOT proposed to drive 125, 24- to 30-inch piles to support temporary work bridges in Construction Year (CY) 1 (2012-2013) and 40, 24- to 30-inch piles to support falsework in CY 2 (2013-2014). Because of the staging area on Lake Washington and other design changes, the current design will greatly reduce the size of the work bridges and will eliminate the need for falsework. WSDOT now proposes to drive 40, 30-inch steel piles to support the work bridges in CY 1 (2012-2013), reducing the number of piles by 85 in CY 1 and 40 in CY 2.

Effects of the Changes to the Proposed Action

Suspended Sediment

The May 20, 2011 Opinion quantified the area that would be subjected to elevated suspended sediment from the proposed action. Based on the location and the in-water work window, only residual and juvenile Chinook salmon are likely to be exposed to elevated suspended sediment at the east approach. Table 1, below, compares the impacts from suspended sediment from the original proposal to the current design. Overall, the new design will increase the area of elevated suspended sediment by 4.8 acres (27 percent). The increase of 4.8 acres is a 1.2 percent increase in area of elevated suspended sediment for the project as a whole. Because the east approach contains primary constituent elements (PCEs) 2 and 3 (freshwater rearing and migration) of PS Chinook salmon critical habitat, the increased area of elevated suspended sediment also increases the magnitude of the temporary effects to these PCEs.

Table 1. Changes in Suspended Sediment Exposure at the East Approach

Total Area (Acres) Exposed to Elevated Suspended Sediment per Construction Year								
East Approach	2012	2013	2014	2015	2016	2017	2018	Total
Original Design	6.5	4.5	N/A	7.1	N/A	N/A	N/A	18.1
Current Design	8.6	1.9	5.3	7.1	N/A	N/A	N/A	22.9
Net Change	+2.1	-2.6	+5.3	0	0	0	0	+4.8

Impact Pile Driving

As described above, the new design will reduce the number of steel piles from 165 (125 in 2012 for work bridges and 40 in 2013 for falsework) to 64 (40 for work bridges and 24 for the staging area, all in 2012). Based on the location and the timing of the impact pile driving, adult Chinook salmon and adult steelhead are likely to be exposed to injurious levels of underwater sound at the east approach. Table 2, below, compares the impacts from underwater sound from the original proposal to the current design. Overall, the new design will decrease the area of injurious levels of underwater sound at the east approach by 124.3 acres (42 percent). The decrease of 124.3 acres represents a 56 percent decrease in area of injurious levels of underwater sound for the project as a whole.

Table 2. Changes in Exposure Underwater Sound at the East Approach

Total Area (Acres) Exposed to Cumulative Sound Exposure Levels Greater than 187dB per Construction Year								
East Approach	2012	2013	2014	2015	2016	2017	2018	Total
Original Design	150.2	134.1	N/A	N/A	N/A	N/A	N/A	284.3
Current Design	167.0	N/A	N/A	N/A	N/A	N/A	N/A	167.0
Net Change	+16.8	-134.1	0	0	0	0	0	-124.3

Overwater Structures

Section 2.4.1.4 of the May 20, 2011 Opinion analyzes the effects of overwater structures on juvenile Chinook salmon. The proposed staging area on Lake Washington will add 4.1 acres of shading. However, because the shading will be in water 40 feet deep, it will not affect the migration of juvenile Chinook salmon along the shoreline. Therefore, NMFS considers the effects of this shading to be insignificant. Table 3, below, shows the changes in the area of existing, new, and temporary structures for each construction year. There is no change in the permanent area of shading and a slight decrease in shading in years 2012 through 2016. This is a reduction in the effects of shading on PCEs 2 and 3 of PS Chinook salmon critical habitat.

Table 3. Changes in Shading

Total Area of Overwater Coverage from Existing, New, and Temporary Structures (Acres)									
East Approach	Existing	2012	2013	2014	2015	2016	2017	2018	Permanent
Original Design	0.7	2.4	2.4	2.4	2.4	1.3	1.3	1.3	1.3
Current Design	0.7	2.3	2.3	2.3	2.0	1.3	1.3	1.3	1.3
Net Change	0	-0.1	-0.1	-0.1	-0.4	0	0	0	0

Table 4 shows the changes in the number of in-water piles and columns for each construction year. Because of the reduced size of the work bridges and the elimination of falsework in the new design, there will be a large reduction in the number of in-water piles during construction. Permanent in-water piles will increase by two. However, this is still a reduction in the total number of piles for the east approach compared the existing condition. For the project as a whole, there will be a reduction from 527 existing piles and columns to 294 new permanent piles and columns.

Table 4. Changes in the Number of Piles and Columns

Total Number of Columns and Piles from Existing, New, and Temporary Structures									
East Approach	Existing	2012	2013	2014	2015	2016	2017	2018	Permanent
Original Design	14	148	188	188	188	9	9	9	9
Current Design	14	56	65	49	11	11	11	11	11
Net Change	0	-92	-123	-139	-177	+2	+2	+2	+2

On page 48 (section 2.4.1.4) of the May 20, 2011 Opinion, NMFS established that juvenile Chinook salmon within five feet of in-water piles or columns will be subjected to higher rates of predation by smallmouth bass. Table 5, below, shows the changes in the area of increased predation for each construction year.

Table 5. Changes in the Area of Increased Predation

Total Area Within Five Feet of Columns and Piles from Existing, New, and Temporary Structures (Acres)									
East Approach	Existing	2012	2013	2014	2015	2016	2017	2018	Permanent
Original Design	0.06	0.44	0.57	0.57	0.51	0.03	0.03	0.03	0.03
Current Design	0.06	0.17	0.19	0.17	0.03	0.03	0.03	0.03	0.03
Net Change	0	-0.27	-0.38	-0.40	-0.48	0	0	0	0

Conclusion

Overall, the design changes will increase the area of suspended sediment by 1.2 percent, decrease the area subjected to injurious levels of underwater sound by 56 percent, and reduce the amount of shading and areas of increased predation during construction. While the changes to the proposed design cause changes in the amount and extent of take, they do not change NMFS' opinion that the proposed action is not likely to jeopardize the continued existence of PS Chinook salmon or PS steelhead or destroy or adversely modify PS Chinook salmon designated critical habitat.

Changes to the Incidental Take Statement

Amount or Extent of Take

Section 2.8.1 of the May 20, 2011 Opinion (page 65) describes the amount and extent of take exempted for the proposed action. The following are changes based on the project design changes described above:

Take from elevated suspended sediment, measured as five or more NTUs over background turbidity levels, is exempted for 22.9 acres at the east approach, with a maximum of 8.6 acres in any one construction year;

Take from impact pile driving (cumulative SEL greater than 187dB) is exempted for 284.3 acres at the east approach, with a maximum of 167.0 acres in any one construction year and a maximum of 125.4 acres in any one day;

Take from increased shading from over-water structures at the east approach is exempted for 2.3 acres from 2012 through 2014, 2.0 acres in 2015, and 1.3 acres in perpetuity as shown in Table 3; and

Take from increased smallmouth bass habitat from over-water structures is exempted for 0.17 acres in 2012 and 2014, 0.19 acres in 2013, and 0.3 acres in perpetuity as shown in Table 5.

Correction of Take from Stormwater

In Section 2.8.1 of the May 20, 2011 Opinion (the bottom of page 66), NMFS used the wrong abbreviation for micrograms per liter. The description of take from stormwater discharges should read:

Take from stormwater discharges (dissolved zinc 5.6 µg /L over background concentrations and dissolved copper at 2.0 µg /L over background concentrations) is exempted for:

1. The area within 7.9 feet of the East Allison street outfall for dissolved zinc and within 4.4 feet for dissolved copper;
2. The area within 10.3 feet of the Portage Bay 1 outfall for dissolved zinc and within 2.2 feet for dissolved copper;
3. The area within 13.2 feet of the Portage Bay 2 outfall for dissolved zinc and within 4.9 feet for dissolved copper;
4. The area within 11.1 feet of the MOHAI outfall for dissolved zinc and within 6.7 feet for dissolved copper; and
5. The area within 70 feet of the 44 floating bridge outfalls for dissolved zinc and within 20 feet for dissolved copper.

Changes to Terms and Conditions

The changes to the amount and extent of take do not require NMFS to issue additional reasonable and prudent measures or terms and conditions. However, NMFS is clarifying one term and condition and extending the reporting deadline of another term and condition.

3. To implement RPM 3, FHWA shall:

- c) For the east approach, from February to July, store barges at least 15 feet away from the temporary work bridge when not in use.

5. To implement RPM 5, FHWA shall:

- a) Submit stormwater monitoring plans to NMFS for the floating bridge and the MOHAI outfall by June 30, 2012.

If you have questions regarding this consultation, please contact Michael Grady of the Washington State Habitat Office at (206) 526-4645, or by electronic mail at Michael.Grady@noaa.gov.

Sincerely,



William W. Stelle, Jr.
Regional Administrator

