

June 22, 2016

Andy Rheume
Chair, WRIA 8 Salmon Recovery Council
c/o King County WLRD
201 S. Jackson St., Ste. 600
Seattle, WA 98104-3855

Dear Chair Rheume and Members of the WRIA 8 Salmon Recovery Council,

Thank you for your letter of June 9, 2016 expressing concerns over the potential impacts to Chinook salmon and water quality resulting from demolitions of the old State Route 520 Bridge in Lake Washington. The National Marine Fisheries Service (NMFS), Washington State Department of Transportation (WSDOT), and the Washington State Department of Ecology share your interest in ensuring adverse impacts to sensitive species and habitats including Endangered Species Act (ESA) listed Chinook salmon are avoided and minimized to the greatest extent practicable during the completion of this essential regional transportation improvement project. Our three agencies have been working together for nearly two decades along with other federal, state, and local, agencies, the tribes and the public to deliver this critical project in an environmentally responsible fashion. (We understand that Stewart Reinbold with the Washington Department of Fish and Wildlife is following up with you separately.) Below are the responses to specific questions raised in your letter.

ESA Consultation

Your letter states a concern that the current demolition plans deviate from the original approved plans and may require WSDOT to reinitiate consultations with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). Over the course of this project WSDOT and Federal Highway Administration (FHWA) have worked closely with NMFS and USFWS to continually review project activities, project changes, and contractor plans as well as the latest scientific information on listed species to ensure the project does not affect listed species to a greater extent or in a manner not previously authorized¹.

As part of the ongoing consultation process, WSDOT and FHWA completed formal ESA consultation in 2011 and subsequently conducted five formal reinitiations with NMFS and six formal reinitiations with USFWS. Through the extensive ESA consultation process WSDOT, FHWA, NMFS and USFWS have ensured that all potential effects to listed species and habitats

have been analyzed and we have developed methods and best management practices (BMPs) to avoid and minimize effects. The conclusions that the project will not jeopardize the continued existence of any listed species, destroy or adversely modify designated critical habitat, or reduce the likelihood of species survival and recovery has been reaffirmed throughout this consultation process.

The current plans for demolition, including demolition on barges in Lake Washington, *do not* represent new types or greater extent of effects than currently analyzed and authorized under ESA and WSDOT's other regulatory approvals. Additional specific details from the ESA consultations are summarized in Attachment A as well as in the consultation documents WSDOT has made available on the SR 520 Program [website](#).

For unavoidable effects to listed species and habitats, the extent and magnitude of those effects have been quantified and authorized as "incidental take". Most importantly, the conclusions that the project will not jeopardize the continued existence of any listed species, destroy or adversely modify designated critical habitat, or reduce the likelihood of species survival and recovery have been reaffirmed throughout this process. .

In summary response to your specific issues, the initial ESA consultation and subsequent reinitiations and updates have addressed the following concerns in detail:

1. **Duration, timing, and location of temporary over-water structures and barge traffic** including work bridges, barge use, and barge traffic, including the use of the Kenmore navigation channel and consideration of the 2012/2013 sediment testing results from the WA Dept. of Ecology and WA Dept. of Health and the 2014/2015 sediment testing results from the U.S. Army Corps of Engineers.
2. **Potential spills and releases of contaminants**, known and unknown, which has included the development and approval of activity specific Best Management Practices (BMPs) to avoid and minimize the risk of such spill or releases.
3. **Dust from demolition activities, potential deposition of contaminants, elevated turbidity levels and water quality degradation.**
4. **Stormwater runoff from permanent and temporary structures** including barges and all work areas.

Attachment A also provides additional detail about each of these topics.

NEPA and Permitting

In addition to the ESA documentation, potential effects to fish and water quality from the project, including demolition of the existing bridge, were addressed in other environmental documents, such as the Final Environmental Impact Statement (EIS) issued in 2011 as well as other NEPA documentation. The Final EIS acknowledged that as a floating bridge on Lake Washington, the I-5 to Medina Project would have extensive demolition and removal of over-water and in-water structure and would require breaking, crushing, and cutting of existing

structures for eventual disposal. WSDOT and FHWA acknowledged the potential effects, such as those listed in your letter, in the documents, but also identified measures to minimize those effects during construction.

Similarly, potential impacts, best management practices (BMPs), and mitigation measures associated with all project activities were described in permitting documentation and approvals such as the Washington Dept. of Fish and Wildlife Hydraulic Project Approval and the Washington Dept. Of Ecology Section 401 Water Quality Certification as identified in your letter. These permitting agencies assessed the project and determined that the proposed construction means and methods, including demolition activities, offered appropriate protection for regulated resources (e.g. sensitive species and water quality). For your reference, we've also attached a recent letter from Washington Dept. of ECY dated June 7, 2016 sent to Representative Pollet regarding demolition activities. The permitting approvals have been regularly updated to ensure that the agencies have reviewed and concurred with any proposed changes.

In summary, your concerns regarding potential adverse impacts to Chinook salmon and water quality have been thoroughly considered and consulted on between our agencies. We thank you for reaching out to us to ensure that the SR 520 Program has addressed these important regulations. We share your goal of recovering this iconic species in the Lake Washington watershed. Please let us know of any additional concerns or informational needs as you continue your important work on salmon recovery.

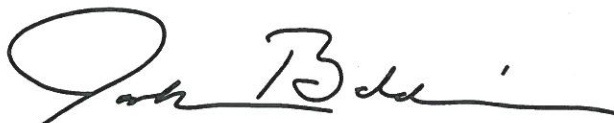
Sincerely,



Kim Kratz, Ph.D.
Assistant Regional Administrator
National Marine Fisheries Service



Julie Meredith, P.E.
SR 520 Program Administrator
Washington State Department of Transportation



Josh Baldi
Northwest Regional Director
Washington State Department of Ecology

Encl. Attachment A: Detailed Response to WRIA 8 Salmon Recovery Council Letter

CC:

Michael Grady, NOAA Fisheries Transportation Branch Chief
Penny Kelley, Washington Department of Ecology WSDOT Liaison
Holly Coccoli, Muckleshoot Indian Tribe Habitat Program Manager
Glen St. Amant, Muckleshoot Indian Tribe Habitat Program Manager
Karen Walter, Muckleshoot Indian Tribe Habitat Program Manager, Watersheds & Land Use Team Leader
Jason Mulvihill-Kuntz, WRIA 8 Salmon Recovery Manager
Roger Millar, Acting Secretary, Washington State Dept. of Transportation
Megan White, Director of Environmental Services, Washington State Dept. of Transportation
Anthony Sarhan, Major Projects Oversight Manager, FHWA

^[1] 50 CFR 402.16 requires reinitiation of formal consultation when 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action may affect species or critical habitat in a manner or to an extent not previously considered; 3) the agency action is modified that causes effects to listed species or critical habitat not considered; or 4) new species is listed or critical habitat designated that may be affected by the action.



Attachment A: Detailed Response to WRIA 8 Salmon Recovery Council Letter June 22, 2106

Background

This attachment summarizes the review and analyses conducted for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project related to potential effects to Endangered Species Act (ESA) listed species and designated critical habitat from construction and demolition activities on Lake Washington. The information provided herein focuses specifically on issues raised in the June 9, 2016 letter from the WRIA 8 Salmon Recovery Council associated with current demolition plans involving breaking up sections of the old bridge on barges as well as potential adverse impacts on Chinook salmon survival and water quality. The letter identifies concerns such as:

1. Duration, timing, and location of temporary over-water structures and barge traffic
2. Potential spills and releases of contamination from unknown pollutants in old roadway materials
3. Dust from demolition activities and potential deposition of contaminants
4. Stormwater runoff from temporary structures and barges.

ESA Consultation

WSDOT and the Federal Highway Administration (FHWA) have complied with all aspects of ESA Section 7 which define the obligations for interagency consultation between WSDOT/FHWA and the Services (National Marine Fisheries Service [NMFS] and U.S. Fish and Wildlife Service [USFWS]). This consultation process has included formal consultation starting with a Biological Assessment and the Services' Biological Opinions completed in 2011 (NMFS NWR-2010-5723 and USFWS 13410-2011-F-0063) and subsequently has included five formal reinitiations with NMFS and six formal reinitiations with USFWS (USFWS 13410-2011-F-0063-R001 through R006; NMFS NWR-2011-5917, NWR-2012-9537, NWR-2013-10358, WCR-2014-01665, and WCR-2015-3817).

As part of the original and numerous ongoing ESA analyses, WSDOT, FHWA and the Services have reviewed potential effects of demolition activities on listed species and their habitats to ensure that the project does not affect listed species or designated critical habitat to a greater extent or in a manner not previously authorized. It is important to note that much of the demolition activity needs to occur on-site in Lake Washington because the old bridge includes structural elements which are imbedded into the substrate and affixed to each other. Before any removal and transport can occur, these structures must be broken apart into movable pieces.

Effects from these sorts of demolition activities, including demolition in and over water and in barges or on top of existing pontoons were analyzed in the original consultation, Biological Opinions, and reinitiations. Because unavoidable impacts to listed species may occur associated with these activities,

“incidental take” was quantified and authorized through the ESA consultation process. Both Biological Opinions and reinitiations discuss demolition activities in numerous sections of the documents.

Regarding demolition activities, the consultations addressed:

- Demolition and removal of the existing bridge and approach columns with concrete saws, shears and hoe rams.
- Recognition that the vast majority of the work involved in replacing the old bridge will be complete at the surface of lake from temporary barges and on top of the new and existing pontoons.
- Discussion that the project will produce large quantities of concrete rubble and reinforcing steel, and that these materials will be transported off-site for recycling, processing, and reuse. To remove materials from the lake, the project may use barge and rail transport methods, transfer facilities (including those at the north and south ends of Lake Washington), and material processing operators located at existing commercial facilities.
- Formal ESA reinitiations in 2016 (USFWS 13410-2011-F-0063-R006; NMFS WCR-2015-3817) specifically address the proposed demolition approach.

Continued ESA Consultation Process

WSDOT and FHWA continue to work with the Federal partners at the National Marine Fisheries Service and U.S. Fish and Wildlife Service to review all project activities, project changes, and contractor plans as well as the latest scientific information on listed species and designated critical habitat to ensure the project does not affect listed species to a greater extent of in a manner not previously considered.

Sections below address the four specific items listed in the WRIA 8 inquiry:

1. Duration, Timing, and Location of Temporary Over-water Structures and Barge Traffic

The ESA consultation and resulting Biological Opinions considered the potential effects from temporary overwater structures including work bridges and barges. NMFS concluded that the over water structures will not affect the migratory behaviors of adult Chinook salmon or adult and juvenile steelhead. They state “These actively migrating fish do not show behavioral responses to over-water shade”. For juvenile Chinook salmon, extensive studies were conducted in Lake Washington tracking juvenile salmonid movements and determined that primary juvenile migration corridors are in water depths between 15 and 27 feet. The consultation included assembling pre-eminent fisheries researchers familiar with Lake Washington to understand risks to juvenile salmonid outmigration associated with project activities.

Based on extensive information, NMFS concluded that increased shading associated with temporary over water structures may result in a small migratory delay. To address this effect, NMFS established “Reasonable and Prudent Measures” (RPMs) and “terms and conditions” to minimize incidental take from overwater structure. These include maintaining at least a 100-foot unobstructed corridor between barges and work bridges at depths between 15 and 27 feet deep to allow juvenile salmonid

outmigration between April 15 and September 1 of any year. For unavoidable effects to listed juvenile salmon, “take” was authorized for the effects of temporary overwater structures for areas throughout the project alignment. WSDOT is adhering to all terms and conditions related to overwater structures and barges.

Barge Traffic

Barge use and operations are an essential component of the I-5 to Medina project given that the floating bridge is located on Lake Washington. The ESA consultation included analyses of potential effects associated with barge use in certain locations related to temporary overwater structure. The ESA consultation and reinitiations also included analyses of barge traffic including addressing concerns raised over the use of the Kenmore navigation channel.

Two formal reinitiations were completed on this issue, the first in early 2012 (USFWS 13410-2011-F-0063-R001; NMFS NWR-2011-5917) and the second in late 2013 (USFWS 13410-2011-F-0063-R004; NMFS NWR-2013-10358) which addressed barge use and concerns about contaminated sediments in and near the Kenmore navigations channel. The late 2013 reinitiation included specific consideration of reported sediment disturbance associated with tugboat operations as well as the results of the 2012/2013 sediment testing conducted in the area.

The ESA reinitiations resulted in a series of specific Kenmore Best Management Practices (BMPs) to avoid and minimize the risk of sediment disturbance including:

1. Use the temporary anchorage area in Lake Washington to reduce the number of vessels in the Kenmore navigation channel and thereby limit the number of active propellers in the channel at one time.
2. Vessels are outfitted with GPS equipment, which allows the operator to navigate through the deepest part of the channel.
3. When in the channel and when feasible, vessels will be operated at low speeds, with minimal propeller thrust.
4. Propeller thrust will also be minimized by use of small assist-boats to help larger vessels generate momentum, reducing the main tug power required to maneuver through the channel.
5. Travel routes will be limited along the shoreline. Equipment and vessels will only travel close to the shoreline when it is essential for construction work. Routine travel on the lake will be at least 200 feet from the shoreline.
6. Speeds will be reduced when travelling within 200 feet of the shoreline.
7. All project access will be within the limits of construction.
8. Use the shallowest-draft tug available that can safely maneuver the barge/vessel being towed/pushed.
9. Use the least powerful (HP) tug that can safely maneuver the barge/vessel being towed/pushed.
10. Stay in the navigation channel – do not deviate course.
11. Reduce power to minimum upon approach to dock.
12. Use small boat/skiff to control larger vessels into dock (act as bow thruster)

In order to eliminate uncertainty, the reinitiation also considered the potential for future events of sediment disturbance despite the proposed BMPs. The Services issued “take” resulting from degraded surface water quality and exposure to elevated turbidity and sedimentation along and adjacent to the Kenmore navigation channel for up to 14 future occasions. Ultimately, the Services concluded that activities in the Kenmore navigation channel would result in increased temporary impacts from sediment disturbance however:

“...the design changes do not alter the NMFS’ opinion that the proposed action is not likely to jeopardize the continued existence of PS [Puget Sound] Chinook salmon or PS steelhead or destroy or adversely modify PS Chinook salmon designated critical habitat.”

“...none of the conclusions reached here fundamentally change the Service’s overarching Jeopardy and Adverse Modification Determinations, or the supporting rationale previously expressed in our Opinion (pp. 113-116). We find that the rationale and conclusions reached by the Service’s Opinion remain valid, and essentially unchanged.”

WSDOT has also coordinated with the Services with respect to the U.S. Army Corps of Engineers sediment sampling and testing conducted in 2014/2015. The results from that testing do not alter the manner or extent of potential effect to listed species and the reinitiation conclusions remain valid.

WSDOT and its contractor continue to adhere to all BMPs, monitoring, and reporting requirements. Annual reports have been provided to the Services and other appropriate agencies.

2, 3, 4: Dust, Turbidity, and Stormwater Runoff Associated with Demolition Activities, Temporary Structure and Barges

USFWS and NMFS analyzed the effects from activities with the potential to degrade water quality from construction and demolition activities using the analytical framework based on the finding of Newcombe and Jensen (1996). This framework evaluates the “severity of effect” based on suspended sediment concentrations, exposure, and duration. The Services concluded that suspended sediment concentrations would result in adverse effects to listed species under the following circumstances:

1. When background nephelometric turbidity unit(NTU) levels are exceeded by 85 NTUs at any point in time.
2. When background NTU levels are exceeded by 40 NTUs for more than 1 hour, continuously, over an 18-hour workday.
3. When background NTU levels are exceeded by 18 NTUs for more than 3 hours, cumulatively, over an 18-hour workday.
4. When background NTU levels are exceeded by 9 NTUs for durations approaching two 24-hour days, continuously.

Given the extensive in-water construction and demolition activities, USFWS concluded that adverse effects to listed species could occur as far as 300 feet from sediment-generating activities. As a result, USFWS authorized “take” of bull trout in the form of “harassment” resulting from degraded surface

water quality and exposure to elevated turbidity and sedimentation within 300 feet of sediment-generating activities. The USFWS also included a RPM to minimize and monitor incidental take caused by elevated turbidity and sedimentation during construction and non-discretionary “terms and conditions” which include the development of a monitoring strategy to ensure the “Take authorization” is not exceeded. WSDOT and FHWA have complied with these requirements and have provided the Services with water quality monitoring plans and the monitoring results.

NMFS determined that elevated turbidity would occur up to 150 feet from project activities including demolition and authorized “take” for levels in excess of 5 NTU over background for areas surrounding all work activities in the vicinity of the new and old bridge. NMFS also included RPMs and “terms and conditions” requiring monitoring and reporting. WSDOT and FHWA have complied with these requirements and have provided the Services with water quality monitoring plans and the monitoring results.

With respect to the specific activity of breaking up sections of the old bridge *on barges*, potential effects to listed species are limited since the work is contained within the barge and fish are not directly exposed to any substantial quantities of materials including dust. The potential amount of dust and uncaptured runoff will not result in exceedances of thresholds established by USFWS or NMFS, nor exceed authorized “incidental take” associated with such activities. Implementation of appropriate BMPs and ESA “terms and conditions” further aid to avoid and minimize the potential for harm to listed species and their habitats. Per consultation with the USFWS and NMFS, the BMPs were developed and approved by the Washington Department of Ecology in the form of a Water Quality Monitoring and Protection Plan (WQMPP). The WQMPP is a component of the larger Environmental Compliance Plan (ECP). These plans have been updated numerous times over the course of the project, including recent updates to the WQMPP in May 2016 addressing all proposed demolition activities.

The BMPs that are being implemented during the project and apply to all in-water and over-water construction activities, including demolition, are presented below and available at the [WSDOT project web site](#):

1. Daily vehicle and construction equipment inspection (e.g., leaks, drips, or maintenance needs).
2. Vehicles will be inspected prior to entering any over-water work zone in accordance with the Spill Prevention Control and Countermeasures Plan (SPCCP) that is Appendix C of the Environmental Compliance Plan (ECP). Vehicles and equipment (including cranes) will be kept clean of excessive oil and grease build-up.
3. When over-water fueling is necessary, the BMPs and procedures described in the SPCCP will be implemented. Temporary land-based fueling stations will be used to the extent practicable and will be located at least 50 feet away from the shoreline.
4. Eco-friendly lubricants and fuel sources (e.g., vegetable-based hydraulic fluid) will be used for in-water construction where practicable.
5. The over-water cranes (located on the work trestle), including the tower crane and crawler crane(s), are a relatively newer fleet of equipment that will be well maintained and regularly cleaned. Fueling BMPs, as described in the SPCCP, will be implemented during all fueling

operations. For crane storage overnight, BMPs, such as diapers and plastic, will be placed underneath the crane engines and maintained daily.

6. Temporary construction staging areas will be constructed within the upland portion of the site and will include spill containment measures in accordance with the SPCCP and erosion control BMPs presented in the Temporary Erosion and Sediment Control Plan, SWPPP, and the NPDES CSWGP.
7. Spill containment kits and visqueen plastic will be kept in multiple locations on-site and within construction vehicles/barges for easy deployment in the event of a spill.
8. Oil containment booms to contain and localize any potential spills, and thus minimize pollution and to assist in the removal of any spilled oil, will be present and available during all construction activities.
9. Absorbent materials will be placed under all vehicles and equipment on barges or other over-water structures. Absorbent materials will be applied immediately on small spills, and promptly removed and disposed of properly. An adequate supply of spill cleanup materials, such as absorbent materials, will be maintained and available in multiple locations on-site.
10. For significant equipment repairs, off-site equipment repair shops will be used to the extent practicable.
11. Tie downs and other methods will be used to secure materials to aid in preventing discharges to the lake via wind forces.
12. Over-water work areas and temporary stockpile materials will be covered when not in use. Nets, tarps, platforms, scaffolds, blankets, barges, and/or floats will be used as necessary to contain and control debris beneath structures being constructed.
13. Curbing, bull rails, or toe boards will be installed around the perimeter of work trestles, platforms, and barges, as appropriate, to contain potential spills and prevent materials, tools, and debris from leaving the over-water structures. These applications will be installed with a minimum vertical height appropriate to contain runoff water. All concrete process water, as defined above, will be contained and collected for off-site disposal.
14. Weather forecasting will be used to schedule concrete pour periods during fair weather conditions and allow for the early implementation of BMPs prior to predicted storm events to avoid and minimize any releases.
15. "Pour Watches" will occur during all concrete pour events for health and safety, construction quality control, and release or spill prevention. Pour Watches will include inspection of formwork integrity and containment of all concrete process water.
16. Formwork soffit systems will have edge forms and containment curbing systems that will contain concrete cure water and rainfall on curing concrete, so that the water can be collected and treated.
17. Concrete will be poured in the dry or in conditions when rainwater falling on freshly poured uncovered concrete can be contained and collected for off-site disposal. Rainwater falling on freshly poured, uncured concrete will be considered high pH stormwater. High pH stormwater will be contained, tested, and treated as necessary to ensure compliance with the pH and turbidity water quality standards prior to discharge to the lake. Concrete will be allowed to cure for at least 7 days before contact with surface water.

18. When not in immediate use, Eco-Pans will be covered to prevent rainwater accumulation and minimize the generation of water requiring handling, treatment, and disposal, and to minimize the risk of a release of high pH stormwater or concrete process water.
19. Concrete pumps and pipelines will be equipped with emergency cut-off valves so that no uncured concrete comes into contact with surface water.
20. When construction activities are occurring on the bridge in work areas where water must be collected and treated (Work Area Stormwater), catch basins will be blocked to collect and contain construction waters.
21. Treatment will include pumping the ballast water to a temporary holding tank, allowing the turbidity to settle, and treating for pH via a CO₂ bubbler or other approved BMP designed to reduce pH to within an acceptable discharge limit, as necessary.
22. Barges used for construction will not be allowed to ground within the project area.
23. Barges and other floating equipment shall be operated so that there is minimal suspension of nearshore sediments.

In addition to the above mentioned BMPs, additional BMPs specifically associated with demolition activities include:

1. Barges used as containment under demo operations will be equipped with water tight structures to contain water from dust suppression and a wall/barrier structure to keep debris from bouncing off the barge into Lake Washington.
2. Barges used for breaking materials down onsite will be equipped with a water tight containment structure to contain water from demolition dust suppression.
3. Barges used for breaking materials down onsite will be equipped with barrier or fencing as needed to contain debris and keep it from entering Lake Washington.
4. Clam shell buckets will remain under water while side casting lake bed materials to minimize turbidity.
5. Barges will be staged near the column removal area to catch any debris or slurry.
6. If turbidity levels exceed the thresholds described in Table I.2 KGM will deploy a turbidity curtain around the operation and will continue to monitor water quality levels until the return below the threshold.
7. If pH levels exceed KGM will install a pump near the discharge point to capture the slurry being generated by the cutting operation. The pump will have a fish screen on it. The discharge would be pumped into a filter bag which traps the cementitious particles and lets the water filter out. The water will then be tested and treated for pH with a CO₂ injector as needed before being discharged to the lake.

Robust monitoring is also required to assure assumptions about turbidity and water quality conditions remain within authorized levels. In the event that BMPs fail, the potential level of increased turbidity and degraded water associated with this work is well within the “take” limits authorized by WSDOT/FHWA’s ESA consultations.

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