



# MUCKLESHOOT INDIAN TRIBE

## Fisheries Division

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April 15, 2010

Ms. Jenifer Young  
SR 520 Project Office  
600 Stewart Street, Suite 520  
Seattle, WA 98101

**RE: SR 520, I-5 to Medina, Bridge Replacement and HOV Project, Supplemental Draft Environmental Impact Statement**

Dear Ms. Young:

T-001-001 | The Muckleshoot Indian Tribe Fisheries Division (MITFD) has reviewed the Supplemental Draft Environmental Impact Statement (SDEIS) and associated documents for the SR 520, I-5 to Medina Bridge Replacement and HOV project. The attached comments are provided in the interest of protecting and restoring the Tribe's treaty fisheries resources and access to those resources.

We recognize that a Preferred Alternative has not yet been selected by WSDOT. The Tribe neither opposes nor supports any particular alternative at this time. Regardless of which alternative is ultimately selected, it is most important that mitigation sequencing requirements be fully met and mitigation be provided for any unavoidable impacts to fish and fish habitat. It will be very important that WSDOT work with the Tribe to develop mutually acceptable measures to avoid or offset impacts to Muckleshoot Tribal fishing access as a result of the project.

T-001-002 | As noted in the attached comments, we believe that potentially significant project impacts are not fully analyzed or discussed in the SDEIS. As one especially significant example, the potential impacts of the new floating bridge structure on lake limnology, stratification, and circulation patterns, and the resulting impacts on water quality and fish survival could be an important impact shared by all of the alternatives.

T-001-003 | The project's geographic location and its large physical and temporal scope creates the potential for significant and unique impacts to treaty protected fisheries resources and Muckleshoot tribal fishing access. In order to evaluate these potential impacts, we will need more detailed information for each alternative than is currently available in the SDEIS. We have noted some of these information needs in our comments. Ultimately the Tribe, WSDOT, and the FHWA will need to work together in a government-to-government manner towards resolving some of these complex issues.

T-001-004 |

Muckleshoot Indian Tribe Fisheries Division  
Comments to the SR 520 Bridge Replacement SDEIS

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Page 2

We appreciate the opportunity to review this SDEIS. Please contact Karen Walter at 253-876-3116 if you any questions about these comments.

Sincerely,



Glen St. Amant  
Habitat Program Manager

Attachment

Cc: Mike Grady, NMFS  
Michael Lisitza, NMFS  
Emily Teachout, USFWS  
Jack Kennedy, US Army Corps of Engineers  
Elaine Somers, US EPA  
Stewart Reinbold, WDFW  
Joe Burcar, WDOE  
Caroline Corcoran, WDOE  
Ben Perkowski, Seattle DPD

## SR 520, I-5 TO MEDINA BRIDGE REPLACEMENT AND HOV SDEIS COMMENTS

The following comments are specific to the SDEIS by chapter and page number. These comments are followed by specific Discipline Reports (DRs), which are also shown by specific DR and page numbers.

### Chapter 1:

- T-001-005 | Page 1-8, The description of the MITFD staff involvement in the impact assessment and mitigation planning process is overstated. We have had limited opportunities to review draft work products and provide input into the impact assessment and mitigation planning process. Several of our concerns identified at various meetings were not included in the SDEIS or DRs as discussed further in our comments below.
- T-001-006 | Page 1-9, There have been limited discussions regarding the project's potential impacts on fishing access, in part due to the lack of a preferred alternative with a defined footprint.
- T-001-007 | Page 1-16, The section regarding the substantive collaboration with agencies and tribes is also overstated. There have been no work products generated from the TWGs that establish the methodologies to assess in-water construction effects short of the SDEIS and its Discipline Reports (DRs), which are incomplete as discussed in comments below. In addition, on page 1-17, the SDEIS describes a project impact plan that includes project mitigation, which has not been provided to the MITFD for review and comments.
- T-001-008 | Page 1-18, Please note that the National Marine Fisheries Service's participation in the Mediation Group was not as a representative of the Muckleshoot Indian Tribe and did not necessarily represent the Tribe's fishing interests.
- T-001-009 | Page 1-20, To our knowledge, the Legislative workgroup did not solicit advice from the Muckleshoot Indian Tribe regarding project designs, potential impacts to the Tribe and mitigation measures.
- T-001-010 | Page 1-32, Please clarify if mitigation costs are included in the cost estimates listed on this page. If so, the estimated mitigation costs should be identified separately on this page. If not, they should be added to this page in the FEIS.
- T-001-011 | Page 1-44, The MITFD expects to be working closely with WSDOT, FHWA, the resource agencies, and the affected jurisdictions once a preferred design option is chosen so we can better determine project impacts to Tribal fishing access and fisheries resources protected by treaty.

### Chapter 2:

- T-001-012 | Pages 2-4, The FEIS should discuss how stormwater generated from the floating bridge portion will be treated prior to release to Lake Washington.

T-001-013 | Page 2-33, It is our understanding that the proposed maintenance dock on the eastside will not include a wave barrier.

T-001-014 | Page 2-37, The FEIS should discuss if mitigation will also be phased if the project needs to be phased.

### Chapter 3:

T-001-015 | Page 3-38, Exhibit 3-16, The bridge cross section and anchor system shown in this exhibit should include the distance or width needed to construct the project as shown in this cross section. For example, page 5-50 indicates that the wider bridge deck, supplemental stabilization pontoons, and anchor piles will span from 450 to 600 feet wider than the existing bridge but the total distance is not disclosed. The schematic should show the actual maximum width needed for these structures.

T-001-016 | Page 3-41, Exhibit 3-18, The Port of Seattle site is within the Tribe's Usual and Accustomed area. Additional details about the use of this site for pontoon storage and outfitting is needed so that we can evaluate this proposal for potential impacts to tribal fishing and fish habitat.

T-001-017 | Page 3-42, Navigation impacts are not the only potential impact for the anchors and cables to the floating bridge. As we have identified in previous meetings and comments, there is potential for the cables and anchors for the floating bridge to preclude MIT fishers from successfully using their fishing gear and may outright eliminate existing fishing area as a result. Since the cables and anchors are needed over a larger area than the existing bridge, the new bridge will have greater potential for impact. Additional details will be needed once a preferred bridge option is selected so this impact to Tribal fishing can be evaluated.

T-001-018 | Page 3-44, The number of piles and overwater coverage for the maintenance facility should be added to this page in a new table. Also, it is our understanding that the maintenance facility dock will not have a wave barrier.

### Chapter 4:

T-001-019 | Page 4-22, As we noted in previous comments, the SDEIS statement regarding treaty rights in Lake Washington is incomplete and possibly misleading, and should be revised. The Tribe's treaty rights include fishing rights, as well as hunting, gathering, and other rights reserved under the Treaties of Point Elliott and Medicine Creek.

T-001-020 | Page 4-57, Washington's 303(d) list of polluted waters is not comprehensive as not all waters of the State are monitored for water quality and many have limited or no water quality data. Some water bodies including Lake Washington have data and are known to be impaired but are not included on the state 303(d) list .

Page 4-58, King County has also monitored Lake Washington continuously since the 1940s. Their data set should also be used.

- T-001-021 | Page 4-58, Seattle Parks staff have indicated that the culverts under Lake Washington Boulevard are potentially fish passage barriers. If these culverts are impacted by the project, then they should either be made fish passable if they are not currently or alternative mitigation provided.
- T-001-022 | Page 4-58, This page should also note that water temperatures have been increasing in Lake Washington (see Arhonditsis et al. 2004).
- T-001-023 | Page 4-65, The Muckleshoot Indian Tribe will likely also need to be consulted regarding the towing and moorage of the pontoons, particularly if the Port of Seattle site is used since it is within the Tribe's Usual and Accustomed area.
- T-001-024 | Page 4-65, The Treaties of the 1850s did more than just reserve the right for tribes to fish within their usual and accustomed fishing and hunting grounds. There are other rights reserved as a result of these treaties.
- T-001-025 | Page 4-65, Please identify the fish passage barriers associated with SR 520 that affects Arboretum Creek and the potential project activities that may affect these barriers.
- T-001-026 | Page 4-67, Currently, NOAA Fisheries recognizes two chinook populations in Lake Washington: Cedar River and Sammamish. The Sammamish population includes fish spawning in Issaquah Creek, and in tributaries to the Sammamish River and north Lake Washington.. This section should note the population trend information discussed in NMFS (2008).
- T-001-027 | Page 4-77, The MITFD requests to receive copies of the additional Lake Washington sediment sampling data and an opportunity to provide any additional comments that we may have based on this data.
- Chapter 5:**
- T-001-028 | Page 5-38, The two existing docks on the parcels purchased on the eastside for the maintenance facility should be removed as part of the project.
- T-001-029 | Page 5-50, The statements regarding impacts to the Muckleshoot Indian Tribe's usual and accustomed fishing area are incorrect and incomplete. As we have explained previously in meetings and in writing, there are potential adverse impacts to Muckleshoot treaty fishing access that can occur as a result of construction activities, including but not limited to the type and location of equipment; vessel and barge movement; work bridges and cofferdams; location of pontoon or other staging areas; and the duration of construction. For example, if pontoons are stored on Port of Seattle property within the Muckleshoot Usual and Accustomed Areas (U&A), these structures may displace Tribal fishing areas. Further, the transport of these structures via water has the potential to interfere with access to MIT tribal fishing sites outside the immediate construction area (i.e. in Elliott Bay, Lake Union, and the Ship Canal). Project phasing may increase impacts to Tribal fishing by extending the construction duration.
- T-001-030 | Construction activities may also impact treaty fisheries resources by limiting the availability of fish for ceremonial, subsistence, and commercial purposes. Fish kills, sublethal effects on

T-001-030 | population productivity; habitat loss and impairment; and disruption of migration of adults and juvenile fish should all be included as potential project construction-related impacts affecting treaty fishing. In addition, project construction activities will result in potentially significant temporal impacts to the Tribe's treaty fisheries resources and fishing as a result of having one bridge in place while another bridge under construction. Years of overlap will occur while the new bridge is being constructed.

Once construction is completed and the existing bridge removed, the new bridge will have permanent impacts on Muckleshoot tribal fishing opportunity and access, including but not limited to: a larger footprint area; potential bridge security and operations that restrict vessel movement and fishing opportunities; permanent bridge impacts (larger footprint, more shade, potentially more nighttime lighting) that increase juvenile salmon migration times and exposure to predation losses that could reduce future fishing opportunities; and a new larger overwater Eastside maintenance dock that may displace fishing area. The new dock may also eliminate existing beach habitat for beach spawning sockeye salmon and adversely affect juvenile chinook using the nearshore area by increasing predator habitat and predation opportunities.

T-001-031 | Pages 5-77 through 5-79, The effect of nighttime lighting to add illumination to the waterbodies needs to be fully discussed. Roadway lighting has the potential to light up areas directly and also be reflected under cloud cover that results in increased predation opportunities of juvenile salmon. The SDEIS should consider these potential impacts on these pages.

T-001-032 | Page 5-119, Table 5.10-1 should indicate the extend of pollutant generating surfaces that will be left untreated post construction.

T-001-033 | Page 5-122, More information is needed about how the stormwater lagoons will be enclosed. This additional information should include: 1) the duration of stormwater storage and treatment in the lagoons, 2) the process of removing pollutants in the lagoons, and 3) how the stormwater will be discharged to Lake Washington from the lagoons.

T-001-034 | Page 5-124, Table 5.10-3, The net change in pollutant loads compared for all alternatives is useful, but there should also be a table that shows the actual pollutant loads by TDA and alternatives so the reader can evaluate the potential reduction levels and the resultant pollutant loads.

T-001-035 | Page 5-131, The potential impact from shade is more likely a result of a sharp edge from light to dark areas as a result of the bridge, not a reduction in plant growth.

T-001-036 | Also, the juvenile chinook data collected by Celedonia and others is a good start to explore juvenile migration issues; however, the data is limited and does not include the combined effect of the existing bridge, the work bridges and piers and the construction of the new bridge that will occur overlapping in time and area. The actual juvenile fish behavior may differ from the research results for the existing bridge.

- T-001-038 | Page 5-132, The statements regarding effects on tribal fishing are incomplete. Please see our previous comments regarding potential impacts to tribal fishing.
- T-001-039 | Page 5-133, Option K with the new cut and cover tunnel would impact tribal fishing access during construction and may also affect access if any tunnel maintenance work requires barges, piers or other maintenance activities within the water that limit or obstruct navigation through the Montlake cut.
- T-001-040 | Page 5-134, There are more potential impacts to salmon than just shading and loss of habitat that may affect salmon survival and reproduction. Impacts to salmon survival and reproduction can adversely affect fishing opportunities for Muckleshoot Tribal fishers.
- T-001-041 | Page 5-136, Table 3-8 on page 3-37 notes that 2 cross pontoons will be 34.5 feet deep, which is deeper than the numbers discussed on page 5-136. Please clarify.
- T-001-042 | Pages 5-136 and 5-137, The potential shading impacts sentence fails to consider the location of the new larger bridge with deeper pontoons that is closer to the Ship Canal bottleneck. Since all of the adult and juvenile salmon must go through this bottleneck, impacts as a result of the bridge will likely be compounded based on its location.
- T-001-043 | Lake circulation issues must also be considered as part of the potential barrier or migration delay for juvenile salmon attempting to outmigrate, subjecting them to risks of residualization and increased predation. There is no basis to suggest that the wider and deeper bridge would **not** substantially alter Lake Washington's surface water and stratification processes. See our comments to the Ecosystem DR for more potential impacts that should be analyzed.
- T-001-044 | Page 5-137, There will be a permanent loss of access to fishing area within the Muckleshoot Indian Tribe's U&A as a result of the larger bridge.
- T-001-045 | Page 5-138, More information is needed regarding the methodology that identifies the amount and location of beach spawning habitat that would be permanently lost due to the support columns.
- T-001-046 | The bridge maintenance facility dock may also create additional predator habitat, due to vertical piles and overwater cover providing shaded areas that results in increased predation of juvenile salmon. The two existing docks need to be removed as part of this project to reduce coverage and existing vertical piles. Additional mitigation may also be needed; once more details emerge for the new dock.
- T-001-047 | Page 5-139, Some elements of the project's potential impacts are unknown; therefore, it is premature to make conclusions regarding the lack of negative effects to salmon populations in Lake Washington as a result of the project.

T-001-048 | Page 5-144, The MITFD has not been involved in the development of mitigation for the project. We had limited opportunity to review the initial mitigation plans and had no input into their drafting, the criteria used to select sites, and the initial sites proposed.

T-001-049 | Page 5-146, Before the SR 520 bridge project designs night time lights based on the I-90 bridge, additional information is needed to determine if these lights are providing any direct or indirect lighting of Lake Washington and what design improvements can be made to reduce direct or indirect lighting on the water

T-001-050 | Pages 5-161 and 5-164 , The language on these pages regarding impacts to the Muckleshoot Indian Tribe's usual and accustomed fishing areas in incorrect and incomplete.

### Chapter 6:

T-001-051 | Page 6-33, The section on construction impacts to Tribal fishing is incomplete. See previous comments.

T-001-052 | Page 6-37, While we appreciate WSDOT's expansion of the environmental justice issues to consider potential impacts to the Muckleshoot Tribal fishers, this section is incomplete both for impacts and proposed mitigation measures. In addition, the description of construction impacts to salmon is incomplete in the third bullet. The in-water work window was established to protect juvenile salmon and does necessarily protect returning adult salmon, particularly chinook and sockeye salmon. Construction impacts to adult salmon could result in changes in migration behaviors that reduce fishing success and/or cause migration delays that could result in sublethal impacts, reduced egg fecundity, or increased pre-spawning mortality.

Page 6-71, The project should reduce the duration of construction activities that could adversely affect migration of adult and juvenile salmon. For example, construction activities that produce the highest noise levels should be limited during outmigration and returning adult migration to provide salmon an opportunity to migrate without construction noise.

T-001-053 | Page 6-77, Spills of pollutants can result in direct fish kills, not just "serious damage". Please clarify what construction activities will result in high pH levels that require mitigation for aquatic species.

T-001-054 | Page 6-78, Construction water and slurry within containment systems should be removed, treated, and pumped to a discharge location that avoids impacting aquatic species.

T-001-055 | Page 6-79, The location of staging and stockpiling areas needs to be fully disclosed for the preferred alternative and located well away from streams and lakes.

T-001-056 | Page 6-79, Reduction of water quality in the bottleneck area would be a concern for salmon as there are existing conditions that already stress returning adults.

T-001-057 | Page 6-86, The in-water work window is established to protect juvenile salmon, not necessarily adults as discussed in our comments above. Furthermore, WSDOT has indicated that they would

- T-001-057 | like to seek extensions of the work window to accommodate the proposed construction schedule, which may overlap further with returning adult salmon and result in further impacts to adult salmon returning to Lake Washington over the project's construction periods.
- T-001-058 | Cofferdams will also eliminate fish habitat areas for the duration that they are in place.
- T-001-059 | The FEIS should discuss potential noise impacts to salmon as a result of constructing substructure foundation types described on page 6-86. The proposed BMPs should also be identified.
- T-001-060 | Page 6-87, The proposal to use cofferdams to remove piers should be described further including where these cofferdams would be located and how much area would be dewatered by them.
- T-001-061 | Nighttime construction lighting can have substantial impacts to salmon due to increased predation risk.
- T-001-062 | Page 6-88, Table 6.11-3, Please explain how these numbers were derived and if they include the all of the potential sources of shade, i.e. construction bridges, finger piers, and barges.
- T-001-063 | Page 6-89, The extent of dewatered area/habitat needs to be quantified for the proposed cofferdams used to construct the permanent bridge support structures for Portage Bay.
- T-001-064 | Page 6-90, The extent of shading due to construction barges in the Montlake Cut should be estimated for Alternative A.
- T-001-065 | Also, the extent of dewatered area/habitat needs to be quantified for the proposed cofferdam that will encompass the entire SPUI footprint for Alternative K.
- T-001-066 | Page 6-91, The extent of shading due to construction barges in the Montlake Cut should be estimated for Alternative L.
- T-001-067 | Page 6-92, We reserve the right to provide additional comments based on the additional information on noise effects and mitigation that will be included in the FEIS.
- T-001-068 | Pages 6-92 and 6-93, These pages should also include a discussion of estimated dewater area/habitat that will occur as a result of cofferdams that could be used for each alternative.
- T-001-069 | Page 6-93, Additional information is needed regarding the extent of area in Lake Washington that will be impacted when there are two bridges and construction bridges and barges. This page identifies an estimate of the overlap time period, but is missing discussion about the extent of area of overlap.
- T-001-070 | Page 6-94, The FEIS should clarify when the placement of the fluke and gravity anchors will occur.

- T-001-071 | Page 6-94, The extent of dewatered area/habitat needs to be quantified for the cofferdams in the East Approach area.
- T-001-072 | Page 6-94, It is not clear that all available beach sockeye spawning data has been considered. Please clarify.
- T-001-073 | Page 6-95, This page does not discuss the largest potential impacts to salmon, which include the potential disruption to migration (both adult and juvenile), potential increases to predation, and spills that could cause harm to an entire salmon run due to the location of the project relative to the bottleneck in the Ship Canal.
- T-001-074 | Page 6-100, The potential mitigation measures for unavoidable impacts do not consider impacts to migration, increased predation risks and potential increases in residualization of salmon.
- T-001-075 | Page 6-101, The project needs to ensure that construction impacts to groundwater resources do not result in any increases in surface water temperatures in the Ship Canal (including the Montlake Cut) and Lake Washington within the project area.
- T-001-076 | Page 6-107, The proposed closure of the Montlake Cut for a period of at least 9 days needs to occur outside of periods of Muckleshoot Tribal fishing.
- T-001-077 | Page 6-108, The Muckleshoot Indian Tribe should also receive notice from the Coast Guard for any navigation alerts issued to commercial and recreational boating communities.
- T-001-078 | Page 6-108, See previous comments about additional information regarding pontoon storage and potential impacts to the Muckleshoot Tribal fishing and fisheries resources. The stored pontoons will create shade and overwater coverage wherever they are stored and this potential impact needs to be discussed in the SFEIS.
- T-001-079 | Page 6-111, The pontoon transport scheduling needs to be coordinated with the Muckleshoot Indian Tribe to avoid conflicts between towing the pontoons and Tribal fishing.
- T-001-080 | Page 6-112, Construction impacts that may occur at the CTC facility should also be discussed on this page. There are a variety of salmon species that could be affected by construction at this facility.
- T-001-081 | Page 6-115, The potential mitigation measures for impacts to Muckleshoot Indian Tribal fishing listed in Table 6.16-1 is a start, but is incomplete and additional measures will likely be needed.
- T-001-082 | Page 6-122, Table 6.16.1, Ecosystems, This section lacks any summary of potential construction impacts to fish.
- T-001-083 | Also this table should quantify the amount of habitat that will be impacted by construction of work bridges, finger piers, and cofferdams.

T-001-084 | Please clarify if the shade totals include barges in the assessment of shading of aquatic habitat.

T-001-085 | Page 6-126, Table 6.16-1, Mitigation measures for navigation should also include notice the Muckleshoot Indian Tribe regarding closures of the Montlake Cut.

**Chapter 7:**

T-001-086 | Page 7-5, There are documented declines for chinook and steelhead salmon populations in Lake Washington; therefore, any impacts as a result of the project that adversely affects these populations will likely be in addition to other impacts affecting these populations. The cumulative effects assessment did not adequately consider impacts to chinook and steelhead populations.

T-001-087 | Page 7-14, Exhibit 7-4d, Redmond Land Use, This exhibit should also include the Novelty Hill Road NE widening project which will complete its NEPA and permitting this year or next.

T-001-088 | Page 7-21, It is premature for this project to conclude that the project would not adversely affect the Muckleshoot Indian Tribe. If there are adverse impacts to Lake Washington salmon populations that reduce an entire year class or run, then it is reasonable to expect that this impact would limit future fishing opportunities for the Muckleshoot Indian Tribe.

T-001-089 | Page 7-22, There is no technical basis for the statement that "the effects of long-term fisheries trends and stressors that contribute to cumulative effects would not be measurable". There are several potential impacts that we have identified, many of which have not been studied or discussed; therefore, the statement has no basis. Furthermore, there will be a permanent loss of area that is currently accessible to Muckleshoot Tribal fishers that will occur as a result of the project.

T-001-090 | Page 7-32, The cumulative impacts analysis failed to consider the potential for water quality violations to occur if the stormwater pumps needed for Alternative K fail.

T-001-091 | Page 7-34, Additional information is needed that analyzes how stormwater is routed currently to wetlands to support the statement that water quality functions of wetlands will be improved as a result of the project.

T-001-092 | Page 7-34, It is premature to state that this project and other reasonably foreseeable projects will not result in a cumulative impacts to wetlands. Mitigation measures to date have not demonstrated to be capable of avoiding cumulative impacts. In addition, there will be temporal losses at a minimum and may be some subbasins that experience cumulative losses if wetland impacts are mitigated out of the subbasin. Finally, we have no basis to conclude that watershed-based mitigation and mitigation banking will be effective in protecting the resource.

T-001-093 | Page 7-35, WDSOT missed the potential for delayed impacts to occur if there are impacts to salmon populations as a result of impacts to adult and juvenile migration. The project has a significant potential to result in indirect effects.

**ATTACHMENT 7: DISCIPLINE REPORTS COMMENTS**

The comments that follow are organized by each of the Discipline Reports (DR) we reviewed where we have comments. They follow in the order of the reports and correspond to page numbers in that specific DR as shown on the CD to the Supplemental DEIS.

**Agency Coordination Discipline Report**

T-001-094 | Page 11, third bullet, This bullet overstated the MITFD staff involvement. We were unable to provide comments to documents due to the short deadlines (generally two weeks or less), overlapping deadlines and multiple documents to review. Furthermore, there was no opportunity to discuss the methodologies used for the SDEIS analysis.

T-001-095 | Page 12, first bullet, To our knowledge, there has been no government to government consultation meetings regarding the Tribe's fisheries resources.

T-001-096 | Page 46, The MITFD has never been given an opportunity to discuss the project's environmental mitigation costs nor have we seen any estimates to determine if the costs will be sufficient to mitigate for project impacts.

**Construction Discipline Report**

T-001-097 | Page 2, The description of the usual and accustomed fishing areas are incorrectly characterized on this page. The Muckleshoot Indian Tribe is the only federally recognized tribe with a fishing usual and accustomed area in Lake Washington.

T-001-098 | Page 26, Exhibit 12, Please clarify what the specific inwater construction activities would be in the Montlake Cut for tunneling and the bascule bridge options. There is nothing on pages 43-49 to suggest inwater work in the Montlake Cut.

T-001-099 | Page 51 and Exhibit 22, This exhibit should also include the amount of area that will be dewatered due to cofferdams. Exhibit 12 shows cofferdams at the West approach.

T-001-100 | Page 55 and Exhibit 6, The pontoon outfitting shown as the Port of Seattle is within the Muckleshoot Indian Tribe's Usual and Accustomed Fishing Area. If used for pontoon outfitting, this activity may interfere with the Tribe's fishing access by displacing fishing areas. Additional information will be needed if this location is used including the exact location of the property, the number of pontoons that will be outfitted here, and the timing and duration of the outfitting.

T-001-101 | Page 56, Exhibit 23, the horizontal distance from end of anchor to end of anchor should be shown in the bottom figure (cross section) of this exhibit.

Page 57, Exhibit 24, This exhibit should also include the amount of area that will be dewatered due to cofferdams. Exhibit 12 shows cofferdams at the East approach.

Page 58 Exhibit 26, The details/dimensions about the proposed dock should be included in a separate table following this exhibit.

### **Ecosystems Discipline Report**

- T-001-102 | Page 1-4, second bullet, Decreased plant growth due to shaded aquatic habitat area is not the only potential impact to fish habitat. Shaded areas could provide predatory fish species with more habitat to use to ambush juvenile salmon. Shaded areas may also affect outmigration of juvenile salmon causing outmigration delay. An increase in outmigration delay can result in increased predation or increased residualization in Lake Washington for juvenile chinook, coho and sockeye. These impacts would be larger during construction of the bridge as a result of the footprint of the existing bridge, the work bridges and piers, and the construction of the new bridge overlapping in time and space. The duration of these structures must also be considered as work bridges and piers could be in place for 4.5 years, which means that an entire generation of salmon species could be affected by this project as both juveniles and adults. Also on Page 3-44, the DR notes that it will be 12-16 months overlap when there will be the new and existing floating bridges.
- T-001-103 |
- T-001-104 | Page 1-4, third bullet, As stated here, water quality for most parameters will be improved; however, total and dissolved copper will increase for Options K. Dissolved copper would also increase in Lake Washington under Option L. These increases occur even with stormwater treatment compared to existing conditions. (See page 5-123 of SDEIS). Metals such as copper and zinc are highly toxic to salmonids (e.g., Meador et al., 2006). Recent research has found that levels of copper as low as 2µg/l can cause sublethal effects on coho and other salmonids. Low copper concentrations are shown to impair sensory physiology and predator avoidance in salmon ([http://www.fish4thefuture.com/pdfs/Copper\\_Abstracts.pdf](http://www.fish4thefuture.com/pdfs/Copper_Abstracts.pdf)).
- T-001-105 | Page 1-4, fifth bullet, Option K's profile as shown on page 2-25 of the SDEIS is equal to or lower than the existing bridge profile and includes inwater fill in the boat section. The first sentence of this bullet is not an accurate characterization of Option K for most of its profile as shown on page 2-25.
- T-001-106 | Page 1-5, first bullet, This assessment may not be accurate when one considers juvenile salmon predation risk impacts as a result of shading due to the existing bridge, work bridges and piers and the construction of the new bridge. Also, the differential rates of predation between the vegetated nearshore and the deeper open portions of the Lake Washington are currently unknown. Shading impacts in the nearshore are better documented than the offshore areas.
- T-001-107 | The potential shading impacts in the offshore areas are unknown. Also, a larger shaded area across the bridge project may be sufficient to deter outmigration and result in an increase in residualization of juvenile salmon. Residualization of juvenile salmon like chinook has implications for the Lake Washington populations as there is likely more mortality in freshwater than marine waters. For example, Lake Washington is open year round for trout fishing, which increases the by-catch risk for chinook.
- T-001-108 | Page 1-5, second bullet, This bullet is incomplete and should discuss in more detail about the potential impacts to fish behavior that could affect successful migration and spawning of returning adult salmon, in particular chinook and sockeye. As we have mentioned in past meetings, the construction activities at or near the Montlake Cut could encourage returning adult

- T-001-108 | salmon to head back towards the Locks. The standard fish work window overlaps with returning adult salmon migration for several salmon species returning to Lake Washington. The longer time spent in the entire Ship Canal could mean an increase both direct and delayed mortality of adult chinook and sockeye as a result of increased exposure to the high water temperatures and low dissolved oxygen levels found there.
- T-001-109 | Also, while pile driving is likely a large source of inwater construction activities that could adversely affect salmon, there will be overall construction noise and lighting that could also affect outmigrating juvenile salmon and returning adults. These impacts were not identified; and additional mitigation measures will likely be needed. For example, it would be beneficial to restrict construction activity from dusk to dawn to allow juvenile and adult salmon to migrate through the construction areas.
- T-001-110 | Page 1-7, Exhibit 1-1, The new bridge maintenance pier will result in permanent piles that will displace aquatic habitat and may increase predator habitat. Also it is our understanding that the proposed wave barrier is no longer a design consideration for this new pier.
- T-001-111 | Page 1-8, Exhibit 1-1, This section on pontoon construction and transport is incomplete. The SDEIS identified additional areas besides Grays Harbor, where pontoons may be outfitted and stored. One of these potential sites is the Port of Seattle property shown on Exhibit 1-7. Storage of pontoons in this area may affect (albeit temporarily) the nearshore habitat for salmon.
- T-001-112 | Page 1-8, fourth bullet, This bullet incorrectly characterizes the usual and accustomed area for treaty fishing. The Muckleshoot Indian Tribe is the only federally recognized tribe with fishing rights in Lake Washington. In addition to fishing rights, the Tribe has other treaty rights to other resources that can be found within the Lake Washington watershed.
- T-001-113 | Page 2-17, The DR should indicate if there are any wetlands at the potential pontoon outfitting location for the Port of Seattle.
- T-001-114 | Page 2-20, The DR should describe in detail how many finger piers would be constructed, the location of these finger piers, the dimensions of these piers, including # of piles, decking, length, width, etc.
- T-001-115 | Page 2-44, paragraph 4, The stormwater pollutant loading information in this is different from the information provided in the SDEIS and Table 5.10-3 for copper and zinc. Please clarify.
- T-001-116 | Page 3-2, The Muckleshoot Indian Tribe's Usual and Accustomed Fishing Area includes an area larger than just the Ship Canal and Lake Washington.
- T-001-117 | Page 3-3, As we have noted in comments on other WSDOT projects, King County's Level 1 stream survey method is insufficient to use to assess habitat because it is not rigorous (limited repeatability) and it tends to over-estimate pools by failing to consider residual pool depth compared to bankfull width. The method is also insufficient to adequately measure wood, wood volumes, and location of wood to determine functionality and impacts. It is nearly impossible to

- T-001-117 | compare streams using these methodologies. A better approach would be to use the updated versions of Pleus et al. (1999) and Schuett-Hames et al. (1999). Both recommended methodologies are available at <http://www.nwifc.wa.gov/TFW/documents/>.
- T-001-118 | Page 3-10, Shoreline habitat preferences for fry and fingerling chinook should be described further on this page. This section is also missing informatin about preferred habitat types and what predators prefer. There is some initial information but should be described further.
- T-001-119 | Page 3-11, In the first paragraph, the description of “young Chinook” maturing needs modification. Mature chinook implies sexually mature chinook, which is not the life history that is outmigrating. It would be better to state that fingerling sized chinook getting ready to outmigrate are the ones that move offshore to deeper water. A more definitive description would be to use the actual fish lengths as described in Roger Tabor’s and Mark Celedonia’s work.
- T-001-120 | The DR should have citation for predators’ preference for waterlilies sentence.
- T-001-121 | Also the DR needs much more detail about Lake Washington/Montlake Cut/Ship Canal water temperatures. The location of the water temperature data provided on page 3-12 should be described. The Lake Washington stratification process is more complex than described on this page. Both the US Army Corps and King County have collected extensive water temperature data for the Ship Canal. These data should be incorporated in the analysis of impacts for this project since water quality is already marginal for salmon in this area before the advent of any new construction. The University of Washington has a robust, decades-long dataset for Lake Washington water quality in the vicinity of the bridge, and King County has a number of water quality sites throughout the lake.
- T-001-122 | The wind patterns that affect Lake Washington and discussed on page 3-11 should based on literature with citations.
- T-001-123 | Pages 3-11 and 12, While the effects of the existing SR 520 and I-90 bridges on water movements and biological resources may not be clearly defined in this report, there are unquestionable impacts to lake circulation from these two bridges. The lake’s original 20 miles of fetch has been broken up by these two bridges, which effectively function as floating breakwaters. These breakwaters also create a vertical mixing zone in the lake when transverse wave action is abruptly channeled into deeper parts of the lake. One of the several concerns with this “mixing zone” effect is that warm surface waters end up mixing with cooler, deeper water which results in less cool water under the bridges. The disruption of the lake fetch affects wave action and beach scour processes that help maintain beach spawning habitat. This fetch also maintains complex currents called seiches that go from one end of the lake to the other. The impact of the bridges breaking the lake fetch up into three discrete areas has never been addressed. These impacts, especially as they relate to biological resources, need to be considered. It is certain that a larger deeper bridge will have more impacts than the existing bridge since it will be over 100% deeper, as well as significantly wider.

- T-001-124 | The greatest potential impact is making the lake warmer. This could occur if the loss of fetch results in less mixing, and more stratification of the lake during the summer. The result could be the lake gets warmer sooner, causing warm-water predators such as bass to eat more salmon. The lake may heat up more and stay warmer longer, exacerbating temperature problems for migrating adult salmon. The Lake is warming at depth even in the winter. A larger, deeper bridge structure may exacerbate this condition, which has profound implications for biological resources, including salmon.
- T-001-125 | The description in the report of phytoplankton, zooplankton, and juvenile sockeye growth rates in Lake Washington is too simple. Although these growth rates are robust, the implication that increased water temperatures are automatically good is a fallacy. There are currently problems with Lake Washington sockeye survival, not necessarily growth rates. One theory is that the warming of the lake has created a timing disconnect between sockeye and their prey resource, leading to survival issues for the fish. Lake water temperatures also clearly increase the metabolic needs of fish predators that prey upon juvenile salmon.
- T-001-126 | The authors' use of existing literature on potential problems with water quality, plankton, and fish distribution as the source of other factors that *"may have a substantially greater effect on these characteristics than the presence of the bridges"* ignores the potential impacts that could be attributed to the bridge and are within the control of WSDOT. The purpose of the SDEIS is to identify potential impacts associated with the existing bridge and the proposed bridge that will be wider and deeper. The potential impacts to lake circulation and the Lake's limnology in general as a result of the existing bridges and the new wider and deeper SR 520 bridge must be fully evaluated as part of the NEPA process.
- T-001-127 | The section on other limnological changes on page 3-12 should consider the contributions that WSDOT roadways have made with respect to changing alkalinity in Lake Washington. For example, elsewhere in the SDEIS documents, WSDOT identified the SR 520 and I-90 bridges as a source for the increase urbanization that occurred on the eastside of Lake Washington. Other WSDOT roadways connect to these two highways, which further facilitated urbanization that all runs off to Lake Washington. Another example is water temperature as discussed above. The increases in water temperatures that are cited in Arhonditsis et al. (2004) looked at water temperature data trends and modeling, but did not evaluate the effect of the bridge(s). The water temperature information needs to be further analyzed to determine if the bridge(s) impact lake circulation and water temperatures as we have suggested and what it means to have a wider, deeper floating bridge at SR 520. As we mentioned at previous meetings, we highly recommend that WSDOT to work with Jonathan Frodge at the Seattle Public Utilities and staff from King County's SWAMP program to evaluate the potential impacts to water temperature in Lake Washington as a result of wider, deeper bridge.
- T-001-128 | Pages 3-17 and 3-18, There are two Chinook populations in Lake Washington for ESA purposes: Sammamish and Cedar river populations. Also, the NOAA (2008) reference on this page is missing from the reference section.

- T-001-129 | Page 3-20, Culverts can do more than block fish passage and alter flow. See the WDFW Fish Passage Guidelines for a list of impacts that can be attributed to culverts.
- T-001-130 | Page 3-28, The amount of area impacted due to inwater piles is underestimated for Alternative A. It should be at least 9090 square feet based on 24 inch sized piles, consistent with Exhibit 3-11. It may be larger if larger diameter piles are used.
- T-001-131 | Page 3-30, Additional information is needed for the finger piers built in addition to construction bridges within aquatic areas.
- Page 3-33, Additional information is needed for the amount of aquatic habitat that would be affected by cofferdams as part of construction for each alternative. This information should be provided as a separate exhibit that follows Exhibit 3-11.
- Page 3-44, Additional information is needed for the proposed use of temporary anchors, particularly if pile anchors used.
- Page 3-45, Additional information is needed regarding the cofferdams to be used for the eastside approach. There is also potential for the cofferdam to affect upwelling processes and adversely affect beach spawning habitat.
- T-001-132 | Page 3-45, Please provide the substrate data gathered for the sockeye spawning survey and the criteria used to determine that the surveyed areas do not provide preferred spawning areas.
- T-001-133 | Page 3-46 Additional information is needed for the construction of the concrete columns for the bridge maintenance dock. For example, it is not clear if these columns will be constructed using drilled shafts or some other technique.
- T-001-134 | Page 3-47, It is our understanding that the proposed wave barrier is no longer part of the maintenance dock. Please clarify.
- T-001-135 | Page 3-47 and 3-48, The adult salmon timing information was collected without a construction project of this magnitude occurring in this location. We do not know how adult salmon will respond to the construction activities here and any delay in migration could result in prespawning mortality, particularly for adult chinook and sockeye. Other construction noise, vibration, lighting, etc. could all cause adult salmon to alter their migration behavior. Any delay in the existing high water temperatures near the project site could result in direct mortality or prespawning mortality. There is no basis to conclude that construction noise impacts to migrating adults will be minor and the BMPs for pile driving will not address these other potential construction impacts.
- T-001-136 | Page 3-53, It is not clear how the DR concluded that the construction lighting impacts to fish would be the same under all options. Since Option K involves inwater filling and more vegetation removal and a longer construction period than the other options, it seems that Option K has a greater potential to have more impacts as a result of construction lighting.

- T-001-137 | Page 3-53, Additional information is needed about the use of cofferdams for existing bridge demolition work, including location, area within dam, duration of cofferdam, etc.
- T-001-138 | Pages 3-66 and 3-67, The statement regarding the lack of available information to indicate that the increased depth and width of the new bridge will not substantially alter the surface water of Lake Washington implies that WSDOT thoroughly reviewed all available information which does not appear to be the case. As MITFD staff suggested at several meetings, WSDOT should have researched this issue further with available scientists knowledgeable of the Lake Washington, its circulation and temperature issues. It is premature to conclude that there will be no substantial impacts due to the pontoons, which will extend into greater depths compared to current conditions.
- T-001-139 | Page 3-68 Street lights for nighttime lighting should not be used on the maintenance dock similar to the roadway due to potential impacts to juvenile salmon from increased predation and the lower height of the maintenance dock compared to the roadway.
- T-001-140 | Exhibit 3-21, The actual pollutant loading both current and proposed should be shown in this exhibit, not the net change. There is no way to verify the numbers.
- T-001-141 | Page 3-74, The details of the removal of the two docks at the eastside maintenance dock need to be identified so the reviewer can determine if there will be an increase or decrease in overwater coverage and pile numbers/sizes. In addition, the SDEIS states that these two docks *may* be removed, suggesting there is no commitment to do so.
- T-001-142 | Page 3-75, Before mitigation plans can be developed for impacts to fish resources, there needs to be technical agreement regarding the potential project impacts. As the SDEIS and the DR have not addressed all potential issues in our comments, there are potential project impacts that remain outstanding.
- T-001-143 | **Cultural Resources Discipline Report**  
Page 1- MIT fishing U&A is described incorrectly here again.
- T-001-144 | **Environmental Justice Discipline Report**  
Page 3, last bullet, The description of impacts to the Muckleshoot Indian Tribe's U&A is incomplete. The bullet needs to be modified. The Muckleshoot Indian Tribe is the only federally recognized tribe who has treaty rights to fish in Lake Washington where the construction will occur. The project's construction footprint will eliminate fishing areas while inwater work is occurring for the project for several years. The project proposes to close down the Montlake Cut to all boat traffic for nine days to construct the new bridge under Alternative A or L. This closure would need to be done during a time when the Tribe is not using the Cut to access its fisheries resources in Lake Washington. Also, there may be a need to mitigate for impacts to the fisheries resources that may occur due to construction (migration delay leading to residualization of juveniles; increased predation of juveniles; avoidance of adults going through construction area to Lake Washington leading to prespaw mortality and lost fishing opportunity; and spills

T-001-144 | that lead to changes in behavior, injury or mortality). The location of the pontoon outfitting may also result in impacts to the Tribe's fishing areas if it includes commercial vessel facilities in the Tribe's U&A (e.g., Port of Seattle, Elliott Bay or Duwamish river shipyards).

T-001-145 | Page 4, first bullet, As noted here the project's constructed footprint will be larger than the existing bridge, which means a permanent loss of fishing area to the Muckleshoot Indian Tribe. The new bridge maintenance dock would also result in new overwater coverage and permanent loss of fishing area for the MIT. These are unavoidable impacts that will require mitigation acceptable to the Tribe. Option K could have additional impacts to the Tribe such as maintenance for the tunnels that may require additional inwater work or barges in the Montlake Cut obstruct fishing access in the future. This issue was not considered in this DR.

T-001-146 | Page 5, bullet 4, The description of the Muckleshoot Indian Tribe's usual and accustomed area is incorrect again.

T-001-147 | Page 63, Please identify the other parties that expressed concerns with culverts for the Eastside HOV and Transit projects and the concerns expressed. In our opinion, the Navigational DR does not adequately address all of the potential impacts to MIT fishing and navigation issues for MIT members accessing their fishing sites.

T-001-148 | Page 71, The discussion of impacts to Muckleshoot Tribal fishers is incomplete.

T-001-149 | Page 80, The impacts to Muckleshoot Tribal fishers and fisheries resources is incomplete. All of Lake Washington is within the Tribe's Usual and Accustomed Area. MIT tribal fishers can fish anywhere in the Lake as permitted by the Tribe's fishing regulations. Fishing areas used today do not necessarily reflect places where they fished in the past or could fish in the future. The last sentence is not relevant to the U&A question and potential impacts to tribal fishing and fish.

T-001-150 | Page 91, first bullet, This bullet is inaccurate. The SDEIS does not identify all potential impacts to the Tribe's fishing access and fisheries resources and all mitigation measures have not been identified. In addition, there may changes to the project that arise as part of construction activities by the contractor that are unknown at this time but could affect the Tribe's access to its fisheries resources or the fish.

T-001-151 | Page 93, the list of mitigation measures for impacts to the Tribe is incomplete.

T-001-152 | Page 96, There will be a permanent loss of fishing area for the Muckleshoot Indian Tribe which will occur as a result of a larger bridge than exists today.

T-001-153 | **Hazardous Materials Discipline Report**  
Page 3, The MIT U&A language needs to be changed.

T-001-154 | Page 48, The MITFD requests copies of all future sediment sampling work for the project. We may have additional comments based on the findings from this work.

**Indirect and Cumulative Effects Discipline Report**

Page 3, fourth bullet, U&A language needs to be changed.

Page 18, We disagree with the following statement:

*"The analysts did recognize, however, that in the case of a resource already under severe environmental stress, short-term construction effects added to the effects of other past, present, and reasonably foreseeable future actions could tip the balance and adversely affect the resource. No such case was found in the cumulative effects assessments conducted for this project."*

Exhibits 17a-d, There are other proposals in and along waterways proposed either through SEPA notices and/or permit notices that are not shown on these figures. Several involve new or replacement piers and docks, and there is one proposal to "subdivide" a waterfront property in Portage Bay in Seattle into multiple lots for future houseboats. These proposals should be identified and included in the analysis. It is very important to identify other potential inwater projects within or near the project area as these projects could also impact the incoming and outgoing migration of adult and juvenile salmon.

Exhibit 18b-This exhibit is missing the widening of Novelty Hill Road proposed by King County and WSDOT through its Highways and Local Programs office. This road project occurs within WRIA 8, the watershed impacted by the SR 520 bridge replacement project.

Page 64, We disagree with the statement on this page that "Project operation would have no disproportionately high and adverse effects on minority populations". Statements regarding impacts to the MIT on page 66 are also incorrect. The larger SR 520 bridge project will remove more open water area that would otherwise be available for Muckleshoot Indian Tribal fishers to access for their fisheries resources. This impact is unique to the Tribe and is disproportionately higher than would be to other groups.

Page 68, The authors need a better understanding of the difference between access to fishing in usual and accustomed areas and impacts to fish habitat. While there may be some overlap in these two issues, they are not necessarily the same thing. Structures and operations that are located in and near water can interfere with the fishers accessing these areas and/or interfere with fishing gear's ability to successfully fish in these areas. Piers and docks and the vessels that use these structures can force tribal fishers to locate farther waterward in fishing areas exposing them and their gear to navigational traffic that can damage gear or endanger fishers. These are some examples of impacts to fishing access.

Page 68-69, While some progress has been made in the last 5 -10 years to do salmon restoration projects in the Lake Washington basin per the recovery plan and early actions, recovery planning implementation is slow and insufficiently funded. Furthermore, the King County Council's recent legislation regarding the placement of wood in salmon projects and the Corps of Engineers' policies on levees and vegetation will likely restrict or negate some of the benefits

T-001-162 | derived from these restoration projects whenever they are finally completed. Finally, there is no comprehensive assessment of fish passage barriers and plans to repair these barriers in WRIA 8.

T-001-163 | Page 70, We do not agree with the following statement on this page:  
*"The 6-Lane Alternative is expected to contribute slight benefit to water quality and fish habitat; however, the effects on long-term fisheries trends or stressors would not be measurable."*

T-001-164 | Also on this page, we disagree with the statement that:  
*In summary, the SR 520 project's contribution to the overall condition of fish and aquatic resources within the study area would not measurably influence the overall cumulative effect on these resource.*

T-001-165 | The authors continue to miss the point that the location of the bridge matters in addition to the size of the structure. A new larger bridge farther north and nearer to the Ship Canal and Montlake Cut, a bottleneck for salmon coming from and going to Lake Washington. The project may adversely affect juvenile salmon from successfully outmigrating to the Ship Canal and on to Puget Sound. These juvenile salmon may residualize and never leave the lake and/or they may be preyed upon by salmon fish predators that benefit from a larger structure producing more shade. The new larger bridge will also likely impact lake circulation patterns as discussed in previous comments that has implications for biological resources.

T-001-166 | Page 101, This section on Lake Washington water quality does not address available information that the lake's water temperatures are rising as discussed in the Ecosystems DR.

T-001-167 | Page 102, The statements regarding improvements in water quality would reduce pollutant runoff is not the case for every pollutant examined. Depending on the alternative, there will be increases in the loading of dissolved zinc and copper in some Threshold Discharge areas even with the stormwater improvements.

T-001-168 | Page 107, It is premature to state that "the projects contribution to cumulative effects of wetlands within WRIA 8 is anticipated to be minor to negligible" since the wetland mitigation plan has not been finalized or agreed to by the MITFD and the resource agencies. See also our comments on the mitigation plans.

T-001-169 | Page 108, It is premature to state that "*long-term programs such as watershed-based mitigation and mitigation banking also aid in the protection of the resource*" in WRIA 8.

T-001-170 | Page 108, The statement on this page  
*"In addition, the analyst did not identify any potential effect of the project on fish and aquatic habitat that would occur later in time than the project activity causing the effect. Therefore, the 6-Lane Alternative is not expected to result in measurable indirect effects on fish and aquatic habitat."*

This sentence fails to address the issues raised regarding potential residualization, predation, migration impacts that could reduce juvenile survival and reduce salmon populations further in

T-001-170 | WRIA 8. There may also be a spill or release of hazardous material that could affect salmon immediately and the population over time. The construction time period will overlap with an entire life-cycle of salmon.

T-001-171 | Pages 113-114, We disagree with the statement that the proposed bridge design changes are minor. The pontoons will be substantially deeper than what exists today which we believe will have significant changes to lake circulation at least in that portion of Lake Washington. These changes could affect temperature, biological productivity, thermocline depth, etc. The potential construction impacts are longer than a generation for most salmon populations in Lake Washington. The proposed mitigation measures are not comprehensive enough to address these impacts. Furthermore, the proposed mitigation measures for the built bridge are not sufficient to date. Finally, the DR fails to acknowledge that the Ship Canal and Montlake Cut are a bottleneck for all salmon populations coming and going within the Lake Washington basin. All of these potential direct and indirect impacts were not sufficiently considered in this DR or the Ecosystems DR.

T-001-172 | **Navigable Waterways Discipline Report**  
Page 4, fourth bullet, This bullet regarding treaty fishing is incorrect and needs to be modified.

T-001-173 | Page 45, *Overall, construction-related barge trips would not interfere with the movement of commercial or recreational vessels, but may disturb the fishing activities of the Muckleshoot Tribe. (Barge and pontoon movement could possibly delay or interfere with movement of the Muckleshoot tribal fishing vessels.)*  
Barge traffic and pontoon movement has the potential to interfere with tribal members ability access their fishing sites, damage their gear or alter fish migration which can reduce the success of tribal fishers who are fishing for commercial, ceremonial and subsistence purposes.

T-001-174 | Page 46, Shifting the bridge farther north may cause additional area to be lost to Tribal fishing access due to the location of the navigational channel, the restrictions associated with the bridge and the larger bridge footprint. The result could be a reduction in Muckleshoot Tribal fishing opportunities.

T-001-175 | Page 46, The DR should discuss the potential for operations and maintenance activities that may require inwater work which could affect navigation.

T-001-176 | Page 51, There is no mitigation measures proposed for construction impacts to the Tribe.

T-001-177 | **Noise Discipline Report**  
This DR acknowledges that sound travels across reflective surfaces (such as water or pavement) with minimal attenuation, yet, fails to consider potential operational noise impacts to aquatic environment and fish.

T-001-178

**Water Resources Discipline Report**

Page 7, fourth bullet, This bullet regarding tribal fishing is incorrect.

T-001-179

Page 27, Lake Union and Portage Bay and the rest of the Ship Canal are more than just rearing areas for outmigrating salmon. They also are the migratory corridors for all returning adult salmon species that come back to Lake Washington basin to spawn.

T-001-180

Pages 37 and 38, water temperatures in the Ship Canal can approach near lethal levels for returning adult salmon.

T-001-181

Page 80, *The 6-Lane Alternative would increase the amount of land covered by PGIS in the study area; however, this increase would not cause a detectable change to groundwater recharge.* Please provide the analysis to support this statement.

T-001-182

Page 80, *Constructing the depressed interchange as part of Option K would result in the short diversion of groundwater flow to Lake Union and the ship canal. However, this would not prevent the amount of groundwater from flowing into these receiving environments and, as such, would not require any additional project compensation.* Please clarify how this option avoids permanently piping and routing groundwater away from Lake Union and the Ship Canal.

T-001-183

Page 80- The proposed stormwater discharges from the floating bridge to the lagoons and dilution zones may not be sufficient to protect juvenile salmon. If the bridge actually attracts juvenile salmon as suggested by some of the data from Celedonia and others, then juvenile salmon will be directly exposed as a result of the stormwater discharges due to their proximity to the bridge. This potential impact was not considered in this DR, the Ecosystems DR, or the Indirect/Cumulative Impact DR.

T-001-184

**Attachment 9: Aquatic and Wetland Mitigation Plans****I. Initial Aquatic Mitigation Plan****General Comments**

It is premature to narrow the mitigation sites down to the proposed 30 sites for aquatic resources and the 11 wetlands. From the information in the Initial Plans, WSDOT has completed this work outside of the SR 520 Technical Working Groups and did not include the MITFD, which is contrary to the purpose of these groups and our involvement in them. The Initial Mitigation Plans have not been sufficiently discussed in the Mitigation Technical Working Group (TWG) as they were being developed. There should have been a discussion about the initial impact analysis identified as Appendix C to verify that this analysis is complete and accurate. In addition, Appendix D of the individual sites and potential mitigation actions is lacking sufficient details about existing conditions and potential mitigation actions. The Aquatic Resources Mitigation Plan should use a similar detailed approach (i.e. existing conditions described and potential mitigation work) as was used in the Wetland Mitigation Plan. Once this work was completed, then the mitigation plan framework, screening criteria, and potential sites should have been identified and meetings held with the Mitigation TWG to discuss these components, and resolve concerns. This process has not occurred to date.

- T-001-185 | As a result, the MITFD requests that technical working group meetings be held soon to discuss project impacts first to ensure that we have the complete list of impacts and any quantification of these impacts. Per our comments on the SDEIS and DRs, we believe that several potential adverse impacts have not been adequately considered. For example, there are potential impacts associated with noise and nighttime construction lighting and bridge lighting that may require mitigation. In addition, the specific details of potential mitigation actions and a quantification of these actions are missing from the initial list of mitigation sites. The Initial Aquatic Resources Mitigation Plan clearly states that there will be a future detailed analysis that will establish and document the quantitative basis for the appropriateness and sufficiency of the mitigation plan to replace lost or impaired habitat functions resulting from the project. Once there is a complete list of impacts and quantification where possible, the meetings that follow would involve the potential mitigation framework, criteria to be used to evaluate sites, and a list of sites.
- T-001-186 | Without a detailed analysis to establish and document impacts and mitigation needs, we cannot provide comprehensive comments at this time. Finally, should a new or modified Westside SR 520 alternative that is not considered in the SDEIS emerge and go through the environmental review process resulting in changes to impacts and mitigation needs, we will need a chance to review this new alternative and proposed mitigation. For all the reasons above, we reserve the right to provide additional comments on the mitigation planning process and subsequent documents.
- T-001-187 | Page Specific Comments to the Initial Aquatic Mitigation Plan  
Page 4-5, 4.3.3, This section of the plan should have additional discussion about the potential combined effect of low dissolved oxygen on the bottom of the Ship Canal and Lake Union and the water temperatures in the surface waters of Ship Canal, Lake Union, and Lake Washington that can reach lethal and non lethal levels on adult salmon migration (particularly chinook and sockeye). The point to make is that there can be times when there is only a narrow band of water column suitable for adult migration. If there are any construction noise, pollutant discharge, spills that affect this band, then adult salmon may not migrate through the area successfully and die while waiting to migrate or die prior to spawning.
- T-001-188 | Page 4-6, A new section should be added that describes the substantial number of piers and docks with small and large vessel moorage, and residential houseboats on piers and docks within the Ship Canal. The existing pier and dock data from Toft et al. (2003) work (a reference cited in the mitigation plan on page 7-2) should be added here. Any other information that identifies and quantifies "the highly modified habitat conditions" in the Ship Canal should also be added here, if it is relevant for the project's impact assessment.
- T-001-189 | Page 4-7, There is available information for local streams that suggests that cutthroat populations have increased in Lake Washington streams compared to coho populations (i.e. Furstenberg and Luchetti, 1993).
- T-001-190 | Page 5-1, The length of the temporal impact as a result of the construction bridges/piers/detour bridge and the existing and the new bridge should be discussed on this page. The wetlands

- T-001-190 | mitigation plan indicates that work bridges will be in place 5 years. The period of overlap also needs to be discussed.
- T-001-191 | Page 5-2, This page needs to discuss the potential for a wider structure with more shade to create a wider sharp shadow edge and increase the potential of juvenile salmon predation by ambush piscivorous predators. In addition, the increased shaded area may trigger a delayed migration response by juvenile salmon as they seek ways around the structure by swimming laterally along the new bridge instead through the pontoon gaps towards the Ship Canal and Puget Sound.
- T-001-192 | Page 5-6, Section 5.1.2- This section is a bit confusing and it implies that there will anchors set in both Portage Bay and deeper waters of Lake Washington. Also, there is no discussion about the other construction areas that may not have the same calm waters as Portage Bay.
- T-001-193 | Page 5-7, Section 5.1.4- To be consistent with the sections that precede it, the stormwater section should discuss why stormwater is a concern for fish and other aquatic organisms and how potential impacts will be addressed as a result of stormwater management activities.
- T-001-194 | Page 5-7, The last statement seems overly broad and not yet supported by the information we have reviewed. Some options of the new bridge may have a smaller in-water footprint than the existing bridge due to fewer large columns; however, there are increases in shade impacts and width of the bridge (wider sharper shadow) and deeper pontoons that may not result in a reduction in impacts compared to the existing bridge.
- T-001-195 | Page 5-8, Given the potential length of construction in and overwater (5 years or more), the temporal overlap of existing bridge, construction bridges, and construction of the new bridge, the mitigation approach may not be able to successfully mitigate for its impacts by relying solely on habitat creation or improvement projects. There may be a need to more directly enhance fish populations as a partial mitigation measure.
- T-001-196 | Page 5-8, Sockeye salmon are also fairly well studied in Lake Washington and should be another "key" species considered in the mitigation process. Also, impacts to returning adult salmon must be mitigated as part of this project. Per this page and the rest of the plan, only juvenile salmon life history stages were considered. For example, lines 683-685 state:  
*"These functions are refugia, rearing areas, foraging areas, and migratory corridors that are important for juvenile salmonid survival in littoral, nearshore, or lotic areas of the Lake Washington basin."*
- T-001-197 | Page 5-9, line 740 uses the word "lack" when it should probably be "lake".
- T-001-198 | Page 5-10, 5.2.3, Without a study of potential increases in predation due to increases in juvenile migration delays or potential residualization, it is premature to state that *"Overall, these short delays are unlikely to result in detectable changes in survival of Chinook or other juvenile salmon as they migrate through Lake Washington and the Ship Canal."* We also don't know the combined effect of multiple bridges overlapping in time and space within the outmigration corridor for juvenile salmon.

T-001-199 | Page 5-10, line 769 should be rewritten to say that the third outmigration option is passage through the large and small locks.

T-001-200 | Pages 7-3 and 7-4, The order of priorities listed on this page should be reversed.

T-001-201 | Page 7-6, We do not view WSDOT's proposal to fund incentive programs and public education and outreach programs as meaningful mitigation for this project. The project needs to focus on specific measurable mitigation measures that increase salmon habitat and productivity that could be adversely affected by this project.

T-001-202 | Page 7.6, We are concerned that work completed by the "local agency group" was not sufficiently discussed with the Mitigation Technical Working Group.

T-001-203 | There should be additional criteria that discusses if the proposed list of sites/parcels already contains mitigation or restoration projects and, if so, these areas should be excluded unless there are compelling reasons to include the site and sufficient safeguards are created to avoid double counting. For example, restoration work has been completed at the Lions Club site on the Cedar River.

T-001-204 | Page 8.2, Table 7, It is premature to narrow the initial mitigation list down to 30 sites. Furthermore, the majority of the 30 sites are public parks that may have too many constraints to accommodate meaningful restoration for fish. These constraints include, but are not limited to, trails and public access, public views, active recreation, parking lots, piers and docks, restrictions on the types of vegetation that can grow, etc. Also the Black River pumping station is in WRIA 9 not WRIA 8. It should be excluded because it is not in the Study area and not within the impacted WRIA. Finally, as stated previously, we request the opportunity to work with WSDOT and the Mitigation TWG to review the Tier 1 list of 280 properties and the screening criteria to discuss what properties should be considered for mitigation.

T-001-205 | Page 8-5, Table 8, We do not view WSDOT's proposal to fund incentive programs and public education and outreach programs as meaningful mitigation for this project. Projects need to focus on specific measurable mitigation measures that increase salmon habitat and productivity that could be adversely affected by this project.

T-001-206 | II. Initial Wetland Mitigation Plan Comments

General comments

Similar to the Aquatic Mitigation plan, there is much more information needed regarding the wetland mitigation actions and the impacts they attempt to provide mitigation for before we can provide comprehensive comments. For example, the Plan states that "*the reader should note that the ratios shown in Table 2 reflect only one type of wetland effect (filling) and one potential mitigation activity (wetland creation). As a result, the data presented in this section do not necessarily reflect the final mitigation ratios and areas that would be used in the compensatory mitigation for the I-5 to Medina: Bridge Replacement and HOV Project.*"

T-001-206 | It should be noted that the MITFD expects to be included when the “temporary effects” mitigation ratio conversations occur. The initial plan suggests that this decision is solely for federal and state agencies and the City of Seattle.

The criteria screening process used for the potential site list and paring process seems reasonable; however, WSDOT should have been working through the Mitigation Technical Working Group (TWG) as each element/step was developed. The Mitigation Planning Working Group needs to meet with the TWG to go through the details of the initial wetland mitigation plan before further work towards decision-making is completed.

T-001-207 | Page Specific comments  
Page 5-14, Section 6.1- Please explain why site W7 on the UW campus is being considered a mitigation site if wetland restoration has already been completed.

T-001-208 | Page 6-9, Section 6.3.1.3, Site W1, This section should be expanded to identify all potential constraints for this site to be used as mitigation. For example, the section notes that public access may be required during construction but should also note if public access/trails will be required post construction as part of a master plan for the Arboretum. Also, wetland mitigation at this site may have limited benefits to any fish species because it is our understanding that the Lake Washington Boulevard culvert crossing of Arboretum Creek (downstream of the mitigation sites) is a fish passage barrier.

T-001-209 | Page 6-13, Section 6.3.2.3, Site W2, There should be enough information now to know if proposed restoration is consistent with the master plan.

Figure 5, Please explain the definition of a candidate site as shown on this figure, the details of these candidate sties, and how these sites were screened to date.

T-001-210 | Page 6-17, Section 6.3.3.3, Site W4, There should be enough information now to know if proposed restoration is consistent with the master plan.

T-001-211 | Page 6-33, 6.3.7.3, Site W10, The site limitations section should discuss the potential for wetlands and buffers to be sprayed with pesticides when Seattle City light maintains the corridor.

T-001-212 | Page 6-41, 6.3.9.3, Site W13, This section should discuss the existing trail and public access as a potential constraint on mitigation activities.

#### References

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