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BNSF Sandpoint Junction Connector Project (SJC)
 BA Technical Assistance Meeting
Friday, July 20, 2018
 USFWS – Idaho Fish & Wildlife Office
 Spokane, WA

Minutes

Attendees (in person): USFWS - Marshall Williams & Katy Fitzgerald
 Jacobs - Craig Broadhead, Sue PaDelford & Diane Williams

Attendees (call-in): BNSF – Kris Swanson, Austin Hurst, Matt Keim
 USCG – Shelly Sugarman, Steve Fischer, Danny O’Keefe, John Greene, Kate O’Dell

1. Project Review

Jacobs provided an overview of the proposed permanent bridges and temporary construction bridges over Sand Creek (Bridge 3.1) and Lake Pend Oreille (Bridge 3.9), including proposed temporary and permanent nearshore fills and details regarding piles, pile driving methods, and use of bubble curtains as noted in the following table:

Action	Support Type	Installation/Removal Method	Total Quantity	In-Water Quantity	Bubble Curtains Proposed?
Temporary Work Bridges					
Bridge 3.1 (Sand Cr.) Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile (open-ended)	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Remove: Vibratory extraction.	30-40	10	No
Bridge 3.9 (LPO) Install and remove temporary work bridge piles.	24-inch Steel Pipe Pile (open-ended)	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Remove: Vibratory extraction.	700	600	No
Install and remove temporary platforms on west side of bridges (staging setouts).	24-inch Steel Pipe Pile (open-ended)	Install: Vibratory to refusal and impact hammer for proofing, estimated 20-50 strikes per pile. Remove: Vibratory extraction.	Included in overall temp bridge pile quantities	Included in overall temp bridge pile quantities	No

Action	Support Type	Installation/Removal Method	Total Quantity	In-Water Quantity	Bubble Curtains Proposed?
Permanent Bridges					
Bridge 3.1 (Sand Cr.) Install bridge piles.	24-inch Steel Pipe Pile (open-ended)	Install: Vibratory to resistance and finished with an impact hammer, estimated 1200 strikes per pile.	64	22	No
Bridge 3.9 (LPO) Install bridge piles.	36-inch Steel Pipe Pile (open-ended)	Install: Vibratory to resistance and finished with an impact hammer, estimated 1600 strikes per pile.	288	288	Yes

Jacobs explained that shallow, low-water conditions during Bridge 3.1 pile driving preclude the use of bubble curtains; additionally, underwater noise does not propagate very well in shallow water. Pictures of low-water/winter drawdown conditions and proposed pier placement in Sand Creek (from previous project submittals) were viewed by the USFWS.

USFWS requested that the BA demonstrate how Bridge 3.1 pile-driving timing coincides with low-water conditions to reduce hydroacoustic impacts. Jacobs agreed to revise the BA to describe in more detail a conceptual pile driving/construction schedule, taking the typical LPO drawdown schedule into consideration. Jacobs clarified that a contractor has not been selected by BNSF and a specific, detailed construction schedule is not available at this time.

2. Proposed Action Area

Jacobs described the proposed action area that includes terrestrial and aquatic impact zones, and the data that will be used in the pile driving calculator to redefine the extent of the aquatic impact zone for bull trout injury and behavioral effects. Calculations would account for the largest piles (Bridge 3.9 36-inch diameter piles) at 1,600 strikes/pile with an impact hammer. USFWS injury and behavior thresholds for bull trout would be reduced by a conservative 5dB in the calculations (supported by qualified studies) to account for bubble curtain sound attenuation. Though researched literature suggests that using open-ended piles reduces the number of required strikes and duration of pile driving, Jacobs will not further reduce the calculated extent of impacts beyond the 5db reduction. BNSF noted that some of the Bridge 3.9 piles at the south end may be closed-ended.

An example aquatic impact zone map was viewed by the USFWS. Jacobs noted that the impact zone also accounts for potential simultaneous driving of piles for Bridge 3.9 (such as a pile driving occurring at both ends). USFWS requested that the BA consider the bull trout migratory corridor and timing of pile driving with out-migration in the spring.

Jacobs stated that additional information regarding spatial and temporal effects for each construction action would be included in the BA and that turbidity curtains would be used along with the bubble curtains to contain sediments. USFWS stated clear information and analysis would lead to less questions and a faster USFWS response. USFWS additionally acknowledged that no terrestrial or T&E terrestrial species are expected to be substantially impacted by the project and therefore do not need to be analyzed in the BA.

3. Species/Critical Habitat PBFs in Action Area

USFWS clarified that the revised BA should address the 9 habitat primary constituent elements (PCEs), rather than physical and biological features (PBFs). Jacobs will provide an assessment of each PCE except for spawning/rearing substrate that does not exist in the project action area. The BA will likely make a preliminary determination of *not likely to adversely affect* (NLTA) for bull trout critical habitat.

USFWS asked whether Jacobs was looking into heavy metals data in lakebed sediments. Jacobs noted that there are no studies in the project action area; however, a study done for the Clark Fork Delta restoration project (approximately 16 miles upstream of the SJC project) was obtained from IDFG that showed contamination in some samples, mostly at shallower depths.* This is expected in the delta from legacy mining in Montana's upper Clark Fork River. Jacobs has also reviewed a study on the Pend Oreille River at Box Canyon Dam (downstream of Albeni Falls Dam and approximately 57 miles downstream from the SJC project) that also showed some heavy metal contamination. Due to lack of project site-specific data and the distance of these two studies from the project action area, Jacobs will tie sediment to levels of total suspended solids (TSS) and provide an associated effect assessment for pile removal. USFWS agreed with this approach and noted that the assessment needs to address how long turbidity curtains would be kept in place after pile removal.

*(*Per a post-meeting compilation, metals were detected in 13 of 103 samples collected at 10 of 33 sampling locations; 8 of the 13 contaminated samples were at depths between 1.5 and 2.5 feet.)*

4. Proposed Minimization Measures

Jacobs reviewed the following list of measures:

- Nearshore fills will be done in the dry for both Sand Creek and LPO
- Permanent piles will first be vibrated in, then driven with an impact hammer
- Only one pile for each temporary bridge pier will be proofed with an impact hammer
- Bubble curtains to be used during permanent Bridge 3.9 impact pile driving where shallow water depths do not preclude their use
 - Guidelines would be followed for the size and stacking depending on pile diameter (36 inches), length, and angle.
 - Anticipating/calculating 5dB sound attenuation
 - USFWS: reference past partial pile replacement hydrophone data on the existing BNSF Bridge 3.9 even though data was for 24-inch-diameter piles)
- Turbidity curtains will be used in conjunction with bubble curtains
 - Will take into account effectiveness based on depth of water and wind conditions
 - 401 WQ Certification also has specific conditions outlined
- Poured concrete for Bridge 3.9 deck will be fully contained
 - BNSF noted that the deck is the only cast-in-place bridge component and would be fully formed prior to the concrete pour

5. Revised Effects Analysis/Effect Determination Rationale

USFWS reiterated their three main issues of focus for the revised BA:

- Hydroacoustics
- Turbidity curtains
- Sediment contamination
 - USCG inquired about doing sediment core samples
 - USFWS stated that in lieu of core samples, temporary piles could be cut off instead of pulled

- USCG requested that data/results be obtained from recent IDEQ lakebed flow velocity study that includes video footage (Jacobs' noted that results are not yet available)

Jacobs reviewed the following list of anticipated direct effects to be covered in the BA:

- Elevated sound pressure levels (SPLs) during construction (both impact and vibratory pile driving):
- Sediment and contaminant mobilization during pile installation and removal
- Sedimentation/turbidity from work related to the nearshore fill and/or upland work runoff (i.e. stormwater during construction)
- Removal of riparian vegetation
- Effects to migration/habitat avoidance during construction (shading & disturbance)

Jacobs reviewed the following list of anticipated indirect effects to be covered in the BA:

- Lost/altered nearshore habitat (from fills)
- Lost/altered lakebed habitat
- Lost/altered foraging habitat (benthic loss) and avoidance
- Increased predation on bull trout as a result of new cover
- Permanent shading impacts

USFWS acknowledged that these direct and indirect effects would appropriately address the additional effect analysis in the BA.

Jacobs also noted that the cumulative effects analysis will include the USFWS-requested bull trout bycatch numbers from:

- IDFG/Avista lake trout suppression program
- IDFG/Avista walleye suppression feasibility study
- Avista trap & haul fish passage program at Clark Fork River's Cabinet Gorge & Noxon Dams

Jacobs to revise their preliminary effect determination to *likely to adversely affect* (LTAA) individual bull trout.

6. USFWS Additional Thoughts/Recommendations

- Make sure analysis is in context with the project
- Just use PCEs and eliminate Matrix of Pathways & Indicators
- For cumulative effects analysis, describe how IDFG/Avista fish suppression efforts might be affecting overall bull trout population
- Upon receipt of the revised BA from USCG (anticipated week of 8/15/2018), USFWS will take no more than 30 days to determine completeness of BA. When USFWS determines BA is complete, formal consultation will take no longer than 135 days.

USFWS thanked Jacobs for thorough coverage of all issues and comments that the USFWS has communicated to date during the pre-BA technical assistance review the project.