Peshastin Creek RM 4.3 Side Channel Reconnection Project

Project Sponsor: Chelan County Natural Resources Department - Design Engineer: Inter-Fluve

60% Designs Comment Matrix February 2022

Commenter	Comment	Response
Alicia Schulz, PLA Shorelands, Wetlands, Federal Permit Coordinator WA Department of Ecology	1. Peshastin Creek is a shoreline of the state with Natural, Conservancy and Rural environmental designations. Additional review and information may be necessary to determine how this project meets the local Shoreline Master Program, as it pertains to the Shoreline Management Act of 1971, RCW chapter 90.58; State master program approval/amendment procedures and master program guidelines, WAC 173-26; Wetlands 90.48; and Shoreline management permit and enforcement procedures, Chapter 173-27 WAC.	
	2. On page 3 of the Peshastin Creek (RM 4.3) Preliminary Design Report, it states "the following ecological concerns were identified and ranked in the biological strategy: 4. Side Channel and wetland connections. This is the only mention of wetlands in the entire report. A few wetlands are mapped in a similar landscape setting with similar aerial signatures on Chelan County GIS. Can you provide more information regarding location and goals for these "wetland connections"? A wetland consultant site evaluation may be helpful to review in the future. The determination for presence or absence of wetlands should extend within proximity (largest buffer width, typically 200-300') from the project work area, including any downstream wetlands. From <https://app.leg.wa.gov/WAC/default.aspx?cite=365-190-090> (4) Counties and cities may use the National Wetlands Inventory and a landscape-scale watershed characterization as information sources for determining the approximate	

	distribution and extent of wetlands. The National Wetlands Inventory is an inventory providing maps of wetland areas according to the definition of wetlands issued by the United States Department of Interior Fish and Wildlife Service. A landscape-scale watershed characterization may identify areas that are conducive to forming wetlands based on topography, soils and geology, and hydrology. Any potential locations of wetlands based on the National Wetlands Inventory or landscape-scale watershed characterization should be confirmed by field visits, either before or as part of permitting activities, and identified wetlands should have their boundaries delineated for regulation consistent with the wetlands definition in RCW **36.70A.030**.	
Ken Muir Region 2 Habitat Biologist, WDFW	3. Water Crossings a. In the "Peshastin 4.3 30% Design-Comment Matrix_11042021.pdf", there are comments from the landowner requesting a ford for seasonal crossings (Comment 4). This is not cited or located on the 60% designs. Is this still a consideration? Note that we do not recommend a ford at this project location. WDFW can only authorize new fords when it is the least impacting water crossing option. The examples of when we can permit a ford are found in WAC 220-660-190(10)(b)(i)-(f). If a ford is determined to be the least impacting water crossing option, the design for one would have to follow WAC 220-660-190 (10) or (11), depending on whether the ford is permanent or temporary. b. In the "Peshastin 4.3 30% Design-Comment Matrix_11042021.pdf", there are comments from the landowner requesting a footbridge.	

	This is not cited or located on the 60% designs. Is this still a consideration? Note that if a footbridge is going to be part of the project, it will need to be designed to meet the bridge design criteria outlined in WAC 220-660-190 (4). Specific design criteria to note are bridge abutments must be located landward of the OWHL, include three feet of clearance above the 100-year flow, be sized to allow for proper velocities and fish passage, and designed to withstand the 100-year flood flow. c. Is there an opportunity to consolidate these requested water crossings into one structure? Rather than having two crossings, we recommend one bridge that would serve all of the landowner's needs. This could be a pedestrian bridge that could also accommodate an ATV.	
	4. Spoils a. Spoil locations should be set outside the limits of the floodplain and the Riparian Management Zone (RMZ). Typically, WDFW requires an upland or offsite location for spoils disposal. What is the rationale for the current locations? b. In particular "Spoil Disposal Area B", the spoils being disposed in this area are likely to affect existing riparian vegetation. Whether that is clearing existing vegetation to dispose spoils or disposing spoils around vegetation. A height of 3 feet can easily smother existing tree and shrub species located at this area. Unless you can locate the spoils elsewhere, mitigation to offset impacts to the existing vegetation will be required.	

	5. “Upper Segment” High Flow Channel (activated at 550cfs) a. The current design shows minimal habitat complexity, in particular a lack of large woody material (LWM). Not sure if this was a design or financial consideration but there is currently no proposed overhead cover from vegetation or LWM, interstitial spaces that would be formed by trees, limbs or brush, nor areas to reduce velocities to create rearing habitat during the targeted flows. • Also, the current design lacks sinuosity and/or inset floodplains that will help with the dissipation of velocity. This appears to be a significant change from the 30% design. • Recommend utilizing key pieces of immobile wood within the wetted area. Does not have to be over engineered or anchored. WDFW supports placing lots of woody material, which can then self-sort since the side channel is only activated at certain flows. This will provide great micro habitats for rearing fish during high flows and overhead cover to protect fish from predation. This will also subsidize the lack of short-term, future fallen wood recruitment at this site. We recommend mimicking or referencing Figure 24 in the “Peshastin_Preliminary_Design_Report_2021-12-30.pdf” or the [presumed] natural side channel just upstream at RM4.7. • Additional wood placement at the entrance to the side channel may deter willing recreationalist from traveling down the straight channel (to help address comment 6). b. Narrowing bed width, especially with “lower flows” in the side channel. Consider including inset floodplains to reduce steep banks, and	

	future incision of the side channel. Narrowing can also create a more diverse wetland/floodplain vegetation to establish, which is severely lacking in the project area. This can also help dissipate velocities as flows increase and spread over the inset floodplain. See Fender Mill project (YN – Interfluve). c. The upper high flow channel's purpose is stated as reducing main stem velocities to encourage deposition and recruit fines and gravel in this area. Has the velocity been modeled? If so, is it providing enough of a velocity reduction in the main stem to transition from a transport reach to depositional? With the current lack of habitat complexity, we would recommend considering removing the high flow channel if the impact to mainstem gravel recruitment is minimal.	
	6. Connector Channels (activation at 45cfs) a. Please define the percentage of the flow split at activation through these connector channels. Additionally, we would also like to know the water depths at different points on the hydrographs through the connector channels. Mainly at the periods of the year with low flow. If possible, can a table of the split flows at different points on the hydrograph, with associated water depths, be produced? This will help us understand if the connector channels are able to allow fish passage and keep the channel wetted during incubation periods. b. Do both connector channels have to activate at the same flow? Would there be an advantage of having them activate at slightly different flows to maximize the flow in each channel and water depth when they first start being activated? There also could be an advantage when the deactivate as flows come back down. (i.e.,	

	connector channel #1 activates at 60cfs and connector channel #2 activates at 45cfs) This will help trigger fish to migrate while having sufficient time and water to do so.	
	7. Apex Jams a. The apex jams changed from ELJ's to boulder ballasted apex jams with minimal use of wood from the 30% to 60% designs. The ELJ design provided more mainstem complexity and cover habitat. What was the reasoning behind the change? It seems like the boulder ballasted design may have more chance to deform in high flows. b. What is the rationale for not pile driving posts at these locations versus having the rootwads ballasted to boulders via chains? Other wood structures used in this project are using posts driven as a ballast. c. Any possibility of keeping the 30% design wood jams? Or something similar? Was this change due to cost?	
	8. Floodplain roughness a. There are some sparely placed logs from about Sta 3+50 to about 6+00. The habitat value is limited if they are only activated between the 25- to 100-year flood flow. b. Would you consider using this wood at lower elevations where they will be activated more frequently? We recommend utilizing more wood throughout the side channel to mimic other referenced side channels.	

	9. Riparian vegetation planting a. Although this may be early consideration in the design process, we have not seen a revegetation plan. Would recommend a fairly vigorous riparian and wetland planting plan to take advantage of the floodplain potential, as well as restore the denuded landscape in this area compared to areas just upstream. This will help establish future wood recruitment potential and create a diverse ecosystem that will help with shading and overhead cover for endangered species. b. Also, as part of the planting, we require weed-free options, and recommend utilizing heavier mulch and slash for erosion control methods in this area. Since the area's current conditions are high, dry, and barren, straw may be too light and have the potential to move around during dry and windy conditions. Straw will make it hard for proper seed and plant establishment if it's not secured properly. Alternatively, coir weave can help assist the straw be secured in high erosion areas such as steep slopes, and in flat areas, compacting straw by driving over with heavy equipment can help stabilize straw material.	
Tributary Committee	10. In general, because of the various constraints, the Committee is growing uneasy with the project, especially the side channel component of the project. Issues identified by members included dewatering of the side channel during a critical rearing period, increased temperatures in the side channel when it is watered at lower flows, and possible recruitment of spawning gravels in the side channel, which would attract steelhead spawning and could result in lost production.	

	11. Most of the biological benefit of the side-channel component is lost because it will go dry in July or August and not reactivate until October or November.	
	12. There are several other issues associated with the side channel including the possibility of coarse stream bed material allowing excessive infiltration of surface water.	
	13. There is concern that spawning-sized gravel will be transported into the side channel, which would encourage steelhead spawning. The side channel would then dewater and destroy fry.	
	14. The sponsor should seriously consider dropping the side channel component of the project and focus on complexity in the main channel.	
	15. Activation of the side channel at 45 cfs during October will likely be a prolonged process as it will take time for the floodplain soils to saturate and allow a complete connection from inlet to outlet. Thus, fish use may be delayed depending on how quickly the side channel can be activated and provide suitable rearing habitat.	
	16. If flows in the side channel are low and poorly connected with groundwater during winter, anchor ice can form and reduce over-winter salmonid survival.	
	17. Dispersing flow in two channels (mainstem and side channel) at lower flows may elevate water temperatures in both channels. Increased temperature regimes at this time may make the channels unsuitable for rearing (Figure 15 on page 18).	
	18. Increasing off-channel rearing habitat in a system that lacks this kind of habitat because of geology and human constraints seems appropriate. The proposed side channel does	

	not necessarily need to be perennial to benefit fish (see attached paper); however, pools should be relatively deep (e.g., > 1 m) and connect with groundwater. It is not clear if pools in the side channel will be deep enough to support salmonid rearing and survival.	
Max Nelson, Transportation Planning Specialist, WSDOT	Our region hydraulics office has reviewed the 60% plans. They concur with the comments WSDOT previously offered on the 30% plans.	
	Question from Sponsor to WSDOT: *In looking over the WSDOT comments on the 30% designs again, I noticed something that I would like to clarify. One of the comments includes this statement "No work on US 97 on any Friday between Memorial Day and Labor Day. Delays to vehicles shall not be longer than 20 minutes." Could you elaborate what is meant by work on US97? Does that include trucks entering and exiting the roadway, or is it specific to work that actually occurs from within the road prism?* Those comments were prepared when we were under the impression that the project involved work on the WSDOT ROW. In the event that there's no work on our ROW then we wouldn't impose that condition.	
Jenae Churchill, Project Manager/Biologist USACE Seattle District	No comments at this time.	
