Project Review Comments

PROJECT: 21-1127 P, Ridgefield Pits- Final Design

Sponsor: Lower Columbia Estuary Partner Program: SALMON ST PROJ Status: Application Resubmitted

MEETING: Initial Review

Shared: 4/2/2021

Review Status: Needs more information

Considerations: Scope concern

Topics	Comments
Review Panel Comments - Initial	
Questions (response required)	
	The Preliminary Design is needed for review. Not clear the proposed design work includes the side channel work upstream. The side channel was not discussed during the virtual site tour. The side channel inlet (upstream) is located in an area which the channel plan form has varied drastically. One of the questions that will likely come out of the Preliminary Design review is how will the design be resilient enough to allow the channel to form through the final restored area.
	Reply: Preliminary Design for Ridgefield Pits is attached. The side-channel was in the presentation - see RCO Presentation in Attachments- Slides 3, 5 & 11. The project proposal also details actions on the side-channel. The area around the side channel inlet has been recovering since the Ridgefield Pits avulsion. The effects of the headcut from the avulsion have abated locally as more sediment (and wood) have deposited in the mainstem adjacent to the side-channel inlet. This has led the side-channel inlet to become more and more connected to the mainstem. The underlying philosophy of the design is to remove barriers that would hinder the river from adjusting naturally to physical processes, including sediment and hydrology. There are no dams on the river and these processes are not hindered. The river will have a chance to find its natural planform and to create channels in the future. Our designs are intended to give the river a jump start and are not intended to hinder future channel development; channels are not armored or locked-in.
Improvements to Make Project Technically Sound (response required)	
	Need Preliminary Design for Review.
	Reply: The Preliminary Design for Ridgefield Pits is attached.

PROJECT: 21-1127 P, Ridgefield Pits- Final Design

Sponsor: Lower Columbia Estuary Partner Program: SALMON ST PROJ Status: Application Resubmitted

MEETING: LE Review

Shared: 4/16/2021

Topics	Comments
Lead Entity Comments	
Questions For Applicant	
	In the alternative 3 scenario, it appears that the left channel will flow through the warm water area. Is this going to create too much warm water influence on the system? The design for this scenario also divides the mainstem river into three channels, raising concerns about stream flow support for fish habitat. Does this design provide enough flow to support spawning and rearing habitat needs in all three channels?
	Reply: 1) We are designing the channels with smaller width-to-depth ratios than the current channel. The channels will be narrower than the current channel, thus easier to shade. Raising the groundwater table and increasing sinuosity will enhance hyporheic exchange. We are providing access to the existing known cold-water areas. 2) We do not anticipate reductions in flow, and might expect to find increases in flow in some seasons due to elevated groundwater table. Velocity will be increased to provide better spawning conditions. Depth will be decreased to provide better spawning. Substrate will be coarsened to provide better spawning. Rearing is expected to be improved by lowering summer temperatures, removing mega-deep ponds, coarsening the substrate, providing more channel margin habitat, and providing more large wood complexity. Flood refuge provided by alcoves, high floodplain connectivity, and better access to side-channel habitat.
	Can you clarify why the alternative 3 hybrid is preferred to alternative 3? Specifically, what makes it a “hybrid” approach? Clarify the components and desired outcomes of this alternative in your application to help reviewers better understand data needs.
	Reply: The initial proposal for Alternative 3 involved a much higher degree of braiding and distributaries. After receiving feedback from the Technical Oversight Group, and after additional analysis, we reduced the amount of braiding. The hybrid approach incorporates both braiding as well as formation of dominant channels. In the presentations Alternative 3 *Hybrid* is also referred to as Alternative 3 *Revised*.
	How much additional field data and modeling is necessary to move forward with this project? Clarify the existing unknowns in your application.

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	Reply: There are remaining data needs for the Final Design. Roughly half the proposed budget for field data collection is to address the comment below -"Final designs should consider the impacts of mining areas, including related levees and berms, outside the project area." The tasks in the budget titled, *Geomorphology Analysis/Avulsion Risk* are specifically to evaluate existing levees and berms within, and upstream, of the project area. The budget also has a line item for B*athymetric and Topographic Survey*. The last bathymetric and topographic survey that we did was in 2018. There have been several large flood events on the East Fork which necessitate updating both the bathymetry & topography due to changes in streambed and floodplain elevations. Changes in streambed elevations will effect local hydraulics and sediment transport, which in turn effects current conditions and predicted (restored) habitat conditions for salmonids. Updating and quantifying the physical conditions will allow us to produce more robust designs.
	Final designs should consider the impacts of mining areas, including related levees and berms, outside the project area.
	Reply: As part of Final Design efforts we are including an initial *Geotechnical and Avulsion Risk Analysis* to address the main levee and berms that surround the Daybreak Pits, which are adjacent to the Ridgefield Pits. This levee that protects Daybreak Pits is the main concern and we need to make sure that understand what it's current condition is. Anything outside this area will not have a marked effect on the Ridgefield Pits design.
	What is the expected date for completing the preliminary design? It will be important to review the preliminary design before effectively reviewing and funding a final design. This proposal will likely be conditioned for final design review by the Review Panel.
	Reply: The Preliminary Designs for Ridgefield Pits Final Design are attached.
	Provide supporting documentation on how the Ridgefield Pits stakeholder work group selected a design alternative in the PRISM application materials.
	Reply: The Restoration Technical Memo, with stakeholder comments, is attached in PRISM. We have also attached stakeholder comments in a separate document.