WASHINGTON STATE Recreation and Conservation Office

Project Review Comments

PROJECT: 21-1099 P, Dry Creek Fish Passage Design

Sponsor: Mid-Columbia RFEG Program: SALMON ST PROJ Status: Application Resubmitted

MEETING: Initial Review

Shared: 4/2/2021

Review Status: Needs more information

Considerations:

Topics	Comments
Review Panel Comments - Initial	
Questions (response required)	
	Will the design of this culvert include in-stream measures to prevent head-cut or loss of habitat complexity upstream of the culvert?
	Reply: Yes, the Forest Service's Aquatic Organism Passage design approach is geared toward a simulated stream design within our structures. This design and implementation will go upstream and downstream of the culvert influence on the channel to insure upstream and downstream habitat values are protected.
Improvements to Make Project Technically Sound (response required)	
	The sponsor stated that the habitat condition below the barrier is in need of some enhancement and/or restoration work. This portion of the project will be completed in phase 2 and that the USFS had an action plan for habitat improvements downstream of this culvert. A summary of the action plan including its connection with and timing in relation to the culvert replacement would improve the strength of the proposal.
	Reply: We added the Forest Service's draft Watershed Action Plan that gives details on planned projects in the Dry Creek watershed. It also estimates when the Forest Service is planning to implement the projects. Currently all are planned to be implemented and finished by 2024.
General Comments (response not required)	
	This is a fairly straight-forward, but large barrier removal design that makes 0.9 miles of high quality habitat available to summer steelhead spawning and rearing. It is also the last passage barrier in the sub-watershed.
	Reply:

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MEETING: LE Review

Shared: 4/15/2021

Topics	Comments
Lead Entity Comments	
Questions For Applicant	
	What is the distance from this crossing to the falls?
	Reply: The Forest Service's stream survey data measures the thalwag of the channel and side channels. This survey indicate there is 0.95 miles of total habitat available upstream of the barrier culvert. The length is 0.62 miles from the 64 road crossing to the falls upstream if you were to fly directly between the two points.
	How far upstream does the substrate description (Slide 20) apply above the xing? Is there a change in substrate at some point, and if so, what is the substrate?
	Reply: The level 2 stream survey collects wolman pebble counts occur at 1/3rd and 2/3rd of each stream reach. Downstream of the culvert the D84 was 146 and D50 was 64. Upstream of the culvert the D84 was 85 and the D50 was 34. These sediment surveys indicate there is better spawning gravel upstream of the culvert, which is expected due to the more complex habitat upstream. It also should be noted that the Big Hollow Fire burned through the reach above the 64 culvert. The USFS has already observed multiple large burned trees recruiting into the stream system. While this reach already has high-quality habitat, the additional large wood recruitment should further improve floodplain function, substrate sorting, pool creation, and overall spawning gravels for steelhead.
	Who owns the road?
	Reply: The USDA Forest Service
	Add details to application on whether or not the stream flows subterranean downstream of the culvert crossing. If this occurs, what is the frequency and duration, and how does it impede fish passage? A lack of surface flow does not necessarily impede adult summer steelhead passage if it is limited to late summer (August – September).
	Reply: Dry Creeks flow goes subterranean from River Mile 0-1.9 every year, generally beginning late July- September. Summer Steelhead go into Dry Creek March through end of May. They should be able to successfully spawn and kelt before the creek goes subterranean. Above the 64 road crossing and approximately 2 miles below the crossing, the flow in Dry Creek is perennial and does not go subterranean. Here is an excerpt from a 2015 Stream survey with information on reaches that go dry. From the mouth of the stream to RM 0.02, Dry Creek was dry. At the mouth of Dry Creek, no evidence of subterranean flow entering the Wind River from Dry Creek was evident. A small pool (SO2, S1, photo page 2) was present at RM 0.02, and unidentified fish were observed in the pool. After this pool unit, Dry Creek returned to a completely dry channel, and flow did not reappear until RM 1.9.

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	What are the design considerations and costs for alternatives? What is the ballpark cost of a bridge? Culvert?
	Reply: From the Correction Analysis form we have two possible alternatives for replacement: Option 1: Replace with bridge and provide adequate stream simulation channel connecting up and downstream channels Option 2: Replace with a bottomless arch and provide adequate stream simulation channel connecting up and downstream channels. Relief channel culverts may have to be installed due to bankfull width. It is difficult to correctly ballpark cost when the Forest Service has not gone through their Aquatic Organism Passage Design alternative protocol; however looking at past projects either the bridge or a bottomless culvert could be within the $400,000-$1 million range. Our Aquatic Organism Passage Design protocol process will help us choose the best ecological and most cost-efficient alternative.
	How does the proposed design approach re-aggrading the stream to correct potential incision caused by the barrier correction?
	Reply: The two possible design approaches that may be considered are a constructed riffle or work from the downstream channel up through the culvert to regrade the channel. The Forest Service's Aquatic Organism Passage Design approach is geared toward a simulated stream design within crossings. This design and implementation will go upstream and downstream of the culvert influence on the channel to insure upstream and downstream habitat values are protected. In addition to replacing the culvert on the 64 road, the Forest Service is planning, designing and implementing an instream restoration project downstream of the culvert on Dry Creek. This project will also help build resiliency in the channel for highly quality complex habitat that has connectivity to its floodplain. The instream restoration project is planned to occur from 2023-2025. Trees have been identified and NEPA is currently underway. The next steps will be design and funding requests before implementation can occur.
	Why do you think that you would need to conduct a geotechnical investigation?
	Reply: On a site visit Forest Service engineers recommended a geotechnical investigation as bedrock was observed on many portions of the road along Dry Creek. The investigation will insure we know how far to drive piles or footers into the ground. This will help our design and implementation for a strong, resilient, and cost-efficient structure. and eliminate any unwanted surprises during construction.
	Doesn’t the USFS have funding to correct barriers?
	Reply: Currently the Gifford Pinchot has over 198 known aquatic barriers and a differed maintenance backlog on road and building infrastructure. Coupled with reduced appropriated funding, the USFS must work with partners and find funding sources to accomplish all work. USFS will make all attempts to match and go above the required match as funding becomes available.
	Ensure designs factor in climate change impacts to stream conditions and processes. The WDFW has climate change resources available for fish passage projects on their website: https://wdfw.wa.gov/species-habitats/habitat-recovery/fish-passage/climate-change

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	Reply: The design factors will include both the WDFW and the USFS climate change impacts to stream condition processes. For example stream width and bankfull width will be identified, 100 year flow will be modeled and because threatened fish are present our structure will be built at a minimum of 1.2 x bankfull + 2 feet. This will allow for stream simulated passage that will allow for a wide variety of flows that allows Dry Creek to reach bankfull and access its floodplain.
	Provide more information on why on restoring access to habitat upstream of culvert is necessary, including quality and quantity of existing habitat.
	Reply: From data collected in the reach above the culvert, the stream is perennial, has twice as much large wood per mile, half the diameter size substrate (optimum steelhead spawning gravel sizes) and has colder water temperatures. We have attached the past stream survey reports for further information.
	Clarify why SRFB funds are the appropriate source to address USFS road upgrade needs.
	Reply: Salmon recovery grants are used to restore degraded salmon habitat and protect existing, high-quality habitat. These two activities are aimed at increasing the amount and overall health of the places salmon live, which will increase the number of salmon. The USFS owns 89% of the Wind River watershed. SRFB funding is an appropriate and necessary funding source to support the recovery of ESA-listed Summer Steelhead in the Wind River basin. SRFB regularly funds projects on the National Forest and has funded projects on the Wind River on the Gifford Pinchot National Forest in the past.