12c. Evaluation Proposal
In-Stream Passage

Applicants must respond to the following items. The local citizen and technical advisory groups will use the evaluation proposal to evaluate your project. Applicants should contact their lead entity for additional information that may be required.

Up to eight pages may be submitted for each project evaluation proposal.

(SUBMIT INFORMATION VIA PRISM ATTACHMENT PROCESS OR ON PAPER)

For prioritization questions or technical assistance, contact Dave Caudill at Department of Fish and Wildlife (WDFW) at (360) 902-2486 or at caudidsc@dfw.wa.gov. For engineering design questions or technical assistance, contact Patrick Powers at WDFW at (360) 902-2546 or at powerpdp@dfw.wa.gov.

NOTE: this information, along with information provided in Section 12d-WDFW Fish Passage Data Forms will be evaluated by WDFW and comments forwarded to the Advisory Panel for consideration.

I. BACKGROUND

Describe the fish resources (number of species or unique populations), the current habitat conditions, and other current and historic factors important to understanding this project. Be specific—avoid general statements. When possible, document your sources of information by citing specific studies and reports.

Tepee Creek, a tributary to White Creek in the Klickitat River subbasin, provides important spawning and rearing habitat for ESA-listed Middle Columbia River steelhead. The White Creek watershed as a whole is likely the most important spawning and rearing tributary watershed within the Klickitat subbasin. In recent years, the White Creek watershed has accounted for up to 40% of the observed steelhead spawning in the entire Klickitat subbasin. Tepee Creek has accounted for up to 21% of the observed spawning in the Klickitat subbasin in recent years, however in most years it likely accounts for between 5 and 10% (Sampson and Evenson 2003, YN Fisheries Program 2002-2004 spawner survey data).

The White Creek watershed is 138 square miles in area. Elevations range from 1140 to 5100 ft.; most of the watershed lies between 2500 and 3300 ft. in elevation. Average annual precipitation is between 20 and 29 in., with roughly half falling as snow. Current habitat conditions in Tepee Creek and White Creek reflect past riparian timber harvest and road construction throughout the watershed; instream large woody debris (LWD) levels are low in some reaches and base flows are very low to non-existent in many reaches. Many sites that provide steelhead spawning habitat during spring flows are dry in mid- and late summer. Impacts from grazing (in the form of altered riparian vegetation, bank erosion, and channel incision) are also evident in several meadow reaches within the watershed. Anecdotal evidence, along

with watershed size, elevation, and precipitation, suggest that more reaches had perennial flow historically. The watershed lies within the Yakama Reservation forest; commercial timber harvest has occurred since the 1950's in this area. Current and future land uses also include timber harvest, although riparian management areas (as laid out in the Yakama Nation/Bureau of Indian Affairs Forest Management Plan) will limit timber harvest in streamside areas.

In addition to the conditions described above, several road culverts in the watershed act as partial fish barriers (primarily to juvenile and small resident salmonids). Because of the very low to nonexistent base flow conditions at many spawning areas, post-emergence movement by steelhead fry and juveniles is critical to their survival. Access to refugia (in the form of perennially-flowing stream reaches or remnant pools in otherwise dry reaches) is necessary for successful rearing within this watershed. Upper Tepee Creek and East Fork Tepee Creek, due to groundwater inputs or intact wetlands that act as reservoirs, provide some of this necessary perennial habitat. Three road crossings (two on upper Tepee Creek and one near the mouth of East Fork Tepee Creek – see map at end of document) represent juvenile fish barriers with high potential for negative impacts to this population. In 2000 the YN Fisheries Program conducted culvert assessment surveys using WDFW Fish Passage Barrier Assessment protocols.

II. PROBLEM STATEMENT

Concisely describe the passage problem (outfall, velocity, slope, etc). Describe the current barrier (age, material, shape, and condition). Is the structure a complete or partial barrier? Describe the amount and quality of habitat to be opened if the barrier is corrected.

When possible, document your sources of information by citing specific studies, reports, or personal communication.

<u>Tepee Cr./IXL Crossing Road</u>: This site currently consists of 2 structural plate steel squash culverts of unknown age. Both culverts are barriers due to slope (5.7% and 3.3% respectively) and both culverts also have an outfall drop (0.75 m and 0.70 m respectively) (YN Fisheries Program 2000 culvert survey data). The culverts are partial barriers – most adult steelhead can likely pass (as evidenced by upstream observations of adult steelhead and redds) but juvenile fish most likely cannot pass. Upstream of the barrier is approximately 2.2 miles of high quality spawning habitat and approximately 4.0 miles of rearing habitat. The upper reaches of the rearing habitat contain perennial refugia due to groundwater inputs; therefore access to this reach is likely very important for post-emergent fry and juveniles in this vicinity.

Meadow reaches immediately downstream of this crossing exhibit channel incision, limited riparian vegetation, and very low base flows. Restoration work is planned in these reaches (primarily consisting of riparian revegetation and grade control to raise channel elevation). Funds for this

work will come from another funding source SRFB, but construction sequencing will be timed to coincide with culvert replacement to avoid upstream degradation and minimize costs.

<u>Tepee Cr./Tepee Cr. Road culvert</u>: This site currently consists of 2 structural plate steel squash culverts of unknown age. Survey data currently only exists for one of the culverts; it is a barrier due to slope (2.5%) and it also has an outfall drop of 0.49 m (YN Fisheries Program 2000 culvert survey data). The adjacent unsurveyed culvert has a similar slope and a slightly higher outfall drop. The culverts are partial barriers – most adult steelhead can likely pass (as evidenced by upstream observations of adult steelhead and redds) but juvenile fish most likely cannot pass. Upstream of the barrier is approximately 4.7 miles of high quality spawning habitat and approximately 6.5 miles of rearing habitat (including the habitat upstream of the Tepee Cr./IXL Crossing Rd. culvert described above). The 2.5 stream miles between this site and the Tepee Cr./IXL Crossing Rd. site provide high quality spawning gravels, but this reach also exhibits channel incision in meadow reaches and very low base flows. Therefore access to the perennial rearing habitat upstream of the Tepee Cr./IXL Crossing Rd. site is likely very important for post-emergent fry and juveniles coming from just upstream and just downstream of this site.

<u>East Fork Tepee Cr./Tepee Cr. Road culvert</u>: This site currently consists of 2 structural plate steel circular culverts of unknown age. Both culverts are barriers due to slope (both at 1.4%) and both culverts also have an outfall drop (0.19 m and 0.18 m respectively) (YN Fisheries Program 2000 culvert survey data). The culverts are partial barriers – juvenile fish most likely cannot pass. Adult steelhead have not been observed upstream of this site; habitat upstream of the crossing is primarily rearing habitat (due to smaller size of dominant substrate). There is approximately 1.5 miles of high quality rearing habitat upstream of this barrier in East Fork Tepee Cr. and a small tributary stream, and an additional 0.8 miles in East Fork Tepee Cr. above another possible barrier culvert which has not been surveyed yet (this culvert is approximately 1.1 miles upstream of the East Fork Tepee Cr./Tepee Cr. Road site. The habitat in East Fork Tepee Cr. is some of the highest quality rearing habitat in the Tepee Cr. system due to reliable perennial flow and low gradient stream reaches. Access to this habitat is likely very important for post-emergent fry and juveniles coming from various parts of Tepee Creek.

III. PROJECT OBJECTIVES

List the project's objectives. Objectives are statements of specific outcomes that typically can be measured or quantified over time. Objectives are more specific than goals (visions of the desired future condition) and less specific than tasks (the specific steps that would be taken to accomplish each of the objectives). For example, the objectives of a barrier removal project might be to provide fish passage, restore natural stream function, and riparian revegetation in the treated area. Explain how achieving the objectives will address and help solve the problem identified in II above.

Objectives of this project include:

- **restore of fish passage at three road crossings**

  The primary objective of restoring fish passage will benefit the steelhead population in Tepee Creek (and in the White Creek watershed as a whole) by providing juvenile fish unobstructed access to perennial rearing habitat within the watershed, presumably increasing potential for survival during low base flow periods.
- **restore natural bedload and streamflow conveyance through project reaches**

IV. PROJECT APPROACH

ω Has the project received a Priority Index (PI) Number? If yes, provide the PI number and indicate the method used: Physical Survey, Reduced Sample Full Survey, Expanded Threshold Determination, or WDFW Generated PI (list source, such as a study or inventory).

No PI Number has been received for this project. It is located within the closed area of the Yakama Reservation on roads and land managed by the Yakama Nation and the Bureau of Indian Affairs. Culvert assessment surveys, using WDFW Fish Passage Barrier Assessment protocols, were conducted by the YN Fisheries Program in 2000 and 2003.

ω Identify if there are additional fish passage barriers downstream or upstream of this project.

There are no fish passage barriers downstream of the project. There are no fish passage barriers upstream of the two Tepee Creek sites in this project. There is one potential barrier culvert (which has not been surveyed) approximately 1.1 miles upstream of the East Fork Tepee Creek site.

ω Briefly describe the location of the project within the context of the watershed (estuary, main stem, tributary, etc) and the life cycle stage(s) affected.

The project location is on Tepee Creek and its main tributary (East Fork Tepee Creek) in the upper portion of the White Creek watershed, a tributary to the Klickitat River. High numbers of adult Mid-Columbia River steelhead are regularly observed in the vicinity of the project, with some

spawning occurring upstream of the project sites. Juvenile steelhead and resident rainbow trout will be the primary beneficiaries of this project, as it will improve their passage from spawning and emergence sites to nearby perennial rearing habitat.

ω List the individuals and methods used to identify the project and its location.

Yakama Nation Fisheries Program staff (crew leader Sandy Pinkham, Fisheries Technician) conducted culvert assessment surveys, using WDFW Fish Passage Barrier Assessment protocols, to identify barrier status of culverts within this project. Will Conley, YN Fisheries Habitat Restoration Specialist, and Joe Zendt, YN Fisheries Biologist, identified project and location significance and prepared project grant application.

ω Describe the project design and how it will be implemented.

See Section 12f for each crossing.

ω Explain how the project's cost estimates were determined.

Longitudinal profiles and upstream and downstream channel dimensions have already been surveyed. Structures were sized based on measured dimension plus added width to accommodate skew and provide a safety factor. Estimates for the structures were provided by BigR Manufacturing. Installation and materials estimates were based on experience and discussions with contractors. All estimates anticipate a 20% rise in steel prices in the next year and a 15% increase in excavation and backfill costs, mainly as a function of fuel prices.

ω Describe other approaches and opportunities that were considered to achieve the project's objectives.

Design alternatives are presented in Section 12F-Part2 for each crossing.

- List project partners. When appropriate, include a letter from each participating partner briefly outlining its role and contribution to the project. (See Section 15 for a sample format.) **n/a**
- List all landowner names. Include a signed form from each landowner acknowledging their property is proposed for SRFB funding consideration. (See Section 16 for a sample format.) **n/a**

ω Describe your approach to the long-term stewardship of the facility.

The Yakama Nation Fisheries Program has an active monitoring and habitat enhancement program. BIA Forestry and the Tribal Roads Program provide maintenance of on-reservation roads.

ω When known, identify the staff, consultants, and subcontractors that will be designing and implementing the project, including their names, qualifications, roles and responsibilities. If not yet known, describe the selection process.

Will Conley, YN Fisheries Habitat Restoration Specialist, 4 years experience in Klickitat basin, will be responsible for project design oversight, implementation, and administration. Sub-contracts for design and implementation assistance will be awarded based on a Request-For-

Qualifications approach. Construction sub-contracts will be put out for bid either on a lump-sum or hourly basis and awarded based on experience and price.

V. TASKS AND TIME SCHEDULE

List and describe the major tasks and time schedule you will use to complete the project. Describe your experience with managing this type of project.

Tasks	Date
30% design complete	**December 2004**
Submit permit applications	**March 2005**
Design complete	**April 2005**
Bid and award construction sub-contract	**May 2005**
Start construction and revegetation	**July 2005**
Complete construction and revegetation	**August 2005**
Monitor re-vegetation success	**October 2005-June 2006**

VI. CONSTRAINTS AND UNCERTAINTIES

State any known constraints or uncertainties that may hinder successful completion of the project. Identify any possible problems, delays, or unanticipated expenses associated with project implementation. Explain how you will address these constraints.