14. Evaluation Proposal
In-Stream Habitat

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)

I. BACKGROUND

Describe the fish resources, 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.

In the late 1990s, three fish species that depend upon habitats within the Wenatchee River subbasin (Watershed Resource Inventory Area 45) were listed as threatened or endangered under Section 7 of the Endangered Species Act (ESA):

- Upper Columbia River Spring-Run Evolutionarily Significant Unit (ESU) of Wenatchee River run Chinook salmon (endangered);
- Upper Columbia River ESU of Wenatchee River run steelhead (endangered); and
- Columbia River Distinct Population Segment (DPS) bull trout, including Wenatchee River Subbasin populations (threatened).

Within the lower Wenatchee River, historic steelhead, and Chinook fish runs were severely depleted by the mid 1930's due to irrigation practices, poor mining practices, grazing, and logging (Andonaegui 2001). Degradation of fish runs continues to the present day due to the construction of seven dams on the Columbia River between the mouth of the Columbia River and the Wenatchee Rive confluence, overfishing, and continued habitat alterations.

As stated in Andonaegui (2001), the significance of the Nason Creek watershed lies in its potential to contribute to spring Chinook production in the Wenatchee subbasin, and its connection to the upper Wenatchee subbasin salmonid populations. Furthermore, the Nason Creek watershed is one of two watersheds in the Wenatchee subbasin that supports the bulk of the spring Chinook spawning in the Wenatchee subbasin.

However, habitat loss and the confinement of Nason Creek have resulted from the construction of local highways, the railroad, and power line corridors. Within the lower 4 miles of Nason Creek, only 3% of the historic off-channel habitat remains (e.g. ponds, sloughs, and standing water). There has also been an 11% loss of riparian floodplain habitat, and a 21% loss of backchannel connectivity (Jones & Stokes 2003, nhc 2003, Jones & Stokes 2004, Andonaegui 2001).

The Nason Creek Oxbow Reconnection Project site is located within the historic floodplain of Nason Creek that was cut off from the main channel by the construction of Highway 207. This 34.5-acre oxbow remains ponded throughout the year and is connected to a shallow groundwater table associated with Nason Creek. The oxbow maintains the historic channel form of Nason Creek and is naturally confined by steep slopes to the east and old river terraces to the west. This

off-channel oxbow habitat accessible to fish only through a culvert located at the downstream end of the oxbow under Highway 207. This culvert makes the habitat inaccessible to adult fish, and only allows juvenile passage during high-flow backwatering events associated with the mainchannel Nason Creek. During summer months this culvert is dewatered. A series of beaver ponds and a lack of a defined channel upstream of this culvert also limit juvenile access to the greater oxbow habitat. The greatest potential for allowing 100% fish passage to the oxbow is the replacement of the existing culvert and the installation of a new culvert at the upstream end of the oxbow under SR 207.

II. PROBLEM STATEMENT

State the nature, source, and extent of the problem that this project will address and help solve. Address the primary causes of the problem, not just the symptoms. When possible, document your sources of information by citing specific studies and reports.

The Nason Creek watershed is one of two watersheds in the Wenatchee subbasin that supports the bulk of the spring Chinook spawning in the Wenatchee subbasin. As stated in Andonaegui (2001), the significance of the Nason Creek watershed lies in its potential to contribute to spring Chinook production in the Wenatchee subbasin, and its connection to the upper Wenatchee subbasin salmonid populations. Within the lower Nason Creek, the largest impact on the fishery resource has resulted from human activities occurring outside of the main channel. The construction of roads, highways, and railroads, has resulted in the disconnection of off-channel habitat and floodplain, and an increase in instream sedimentation (Andonaegui 2001).

The total juvenile salmonid densities in Nason Creek are primarily limited by the availability of high flow refuge habitat for post-emergent fry, and the degradation of spawning habitat (Andonaegui 2001, Upper Columbia Regional Technical Team [UCRTT] 2002). In general terms, the confinement of Nason Creek through roads, highways, and railroads, has cut off approximately 400 acres of side channels and oxbows, altered channel form (width:depth) resulting in a semi-braided system with severe aggradation, has reduced LWD input, instream cover, instream habitat complexity, streambank stability, and temperature regulation. Today, Nason Creek has approximately 25% as much side channel habitat as nearby reference reaches (Andonaegui 2001), and as stated above in Part I, within the lower 4 miles of Nason Creek, only 3% of the historic off-channel habitat remains (e.g. ponds, sloughs, and standing water). There has also been an 11% loss of riparian floodplain habitat, and a 21% loss of backchannel connectivity (Jones & Stokes 2003, nhc 2003, Jones & Stokes 2004, Andonaegui 2001).

Following the guidance of the Wenatchee Watershed Habitat Sub-Committee and the other sources cited above, the priority actions within the Nason Creek watershed are to protect remaining floodplain and riparian habitat, restore channel migration to historical function, and if restoration is not possible, improve fish access to oxbows and historical side channels (UCRTT 2003).

Within the lower 4 miles of Nason Creek, the restoration of channel migration is limited as the removal or realignment of Highway 207 is not viewed as feasible at this time (Jones & Stokes 2006). The Nason Creek Oxbow Reconnection Project proposes the installation of two 12’ CMP culverts in SR 207 to reconnect partial flows and year-round fish access to 4,600 linear feet (34.5 acres) of off-channel oxbow habitat. This will create off-channel rearing and foraging habitat, high-flow refuge, and overwintering habitat for federally ESA-listed salmonids within Nason Creek, including spring Chinook salmon, summer steelhead, and bull trout.

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 an in-stream habitat project might be to increase channel complexity, to provide cover, to capture sediment, to reduce erosion, to create pools, and to reconnect side-channels or floodplain. Explain how achieving the objectives will address and help solve the problem identified in II above.

The objective of the Nason Creek Oxbow Reconnection Project is to connect year-round fish access to 34.5 acres of oxbow habitat to address limiting salmonid habitats in Nason Creek. The oxbow was created during the construction of SR 207 as the mainchannel was moved from its historic alignment and postioned to the west of the highway (1940's). Once reconnected hydrologically, the oxbow will provide off-channel rearing and foraging habitat, high-flow refuge, and overwintering habitat for federally ESA-listed salmonids within Nason Creek, including spring Chinook salmon, summer steelhead, and bull trout.

IV. PROJECT APPROACH

- ▷ Briefly describe the geographic setting of the project (marine nearshore, estuary, main stem, tributary, etc) and the life cycle stage(s) affected.

This project site is located is in the lower Nason Creek at RM 3.4, within an abandoned oxbow to the east of Highway 207. The reconnection of this oxbow is designed to provide juvenile salmonid (Chinook, steelhead, and sockeye) high-flow refuge and year-round foraging habitat, as well as deep-water overwintering habitat. The riparian vegetation restoration will benefit all life history stages of salmonids utilizing the habitats within both the mainchannel and the off-channel habitat. These include adult migratory and spawning stages, as well as juvenile foraging and migratory life history stages.

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

CCNRD currently administers watershed planning and salmon recovery efforts in Chelan County, including efforts in the Wenatchee River watershed. In 2001, CCNRD was awarded a grant from SRFB to conduct the Lower Wenatchee River Channel Migration Zone (CMZ) Study. The purpose of the CMZ Study was to provide the technical foundation for selection and prioritization of salmonid habitat restoration, enhancement, and preservation project opportunities within the lower Wenatchee River (26 miles) and Nason Creek (lower 4 miles).

CCNRD subsequently retained Jones & Stokes to conduct Phase I and Phase II of the CMZ Study, which was completed in the spring of 2004 (Jones & Stokes 2004). The CMZ study quantified physical and biological mechanisms linked to the salmonid habitat limiting factors within the; and prioritized potential habitat restoration, enhancement, and preservation actions.

From the outset of the CMZ Study the Nason Creek oxbow site provided and excellent opportunity to connect off-channel oxbow habitat to the mainchannel. The CMZ prioritized a total of 26 potential restoration, enhancement, and preservation project sites, including the Nason Creek oxbow site. Through this prioritization, the Nason Creek Oxbow Project Site ranked number eight out of the 26 sites. At the request of the CCNRD, Jones & Stokes conducted an additional site prioritization of the top-10 CMZ project sites based upon design and construction

feasibility and risk factors (Jones & Stokes 2004b). **Subsequently, the Nason Creek Oxbow Project Site ranked No. 1 of these sites based upon the high design feasibility and very low risk to infrastructure, cost, and biological benefit.** Thus, the Nason Creek Oxbow Project Site has become the top priority within the CCNRD for salmonid restoration within lower Nason Creek.

▷ Describe the consequences of not conducting this project at this time. For acquisition projects, also describe the current level and imminence of risk to habitat.

Since the federal listing of spring Chinook, and summer steelhead, few habitat restoration projects have been completed within lower Nason Creek that directly benefit the spawning or rearing habitat. The majority of the money spent within this area has focused upon the study of limiting habitat factors. This project proposes to improve current habitat conditions by directly addressing the primary salmonid habitat limiting factors within lower Nason Creek.

This project is the direct result of studies partially funded by the SRFB. The CCNRP and their consultants have spent the past six years intent upon implementing salmon recovery restoration projects. With the completion of Phase II of the CMZ Study (Jones & Stokes 2004), the scientific and technical foundation was established to pursue and implement the types of habitat restoration projects recommended by the UCRTT (UCRTT 2003), and the WRIA 45 Habitat Limiting Factors Report (Andonaegui 2001). With this support, the SRFB funded Phase I Design and Engineering of the Nason Creek Oxbow Reconnection Project (Jones & Stokes 2005, Jones & Stokes 2006). The CCNRD worked closely with UCRTT to create a project that safely reconnects the abandoned oxbow at the Nason Creek Oxbow Project Site. Without these studies and local coordination, no salmonid restoration action will occur at this site.

The consequences for not implementing this particular project would be to maintain existing conditions and degraded habitats, which will continue to limit the productivity of listed salmonids within Nason Creek. Failure to implement the project would fail to capitalize upon excellent collaboration that the CCNRD has built with the UCRTT and WSDOT.

▷ If project includes an acquisition element, then briefly describe the extent to which habitat to be acquired is currently fully functioning and/or needs restoration; the timeframe in which responses or improvements in habitat functioning are expected; and the continuity of the proposed acquisition with other protected or functioning habitat in the reach

No acquisition element.

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

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

The project cost estimate was based upon the 35% design plans drafted in the Nason Creek Oxbow Reconnection Project Design Report (Jones & Stokes 2006). The CCNRD worked with Jones & Stokes to determine unit costs for all items listed in the table in Section 8 of this application.

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

An Alternatives Analysis (Jones & Stokes 2006) was conducted to determine the best project alternative. Five alternatives were identified through an iterative process with the UCRTT. The five alternatives included the following:

- Alternative 1 - Removing SR 207 from the Nason Creek CMZ;
- Alternative 2 - Installing two 200-foot long bridges to and restoring Nason Creek to the historic oxbow alignment;
- Alternative 3 - Installing two 12-foot diameter, 90-foot long CMPs;
- Alternative 4 - Installing two 36-foot span, 80-foot long arch culverts; and
- Alternative 5 - Installing one 12-foot diameter, 90-foot long CMP at the downstream oxbow connection.

Based upon biological benefit, construction feasibility, and cost, the Preferred Alternative as presented by CCNRD and as agreed upon by the RTT is Alternative 3. Please refer to the attached Alternatives Analysis (Jones & Stokes 2006) for details.

- 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.)

Washington Department of Transportation – Engineering review and project maintenance.

- 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.)

Washington State Department of Transportation.

- Describe the long-term stewardship and maintenance obligations of the project. Projects should be consistent with habitat forming processes in the watershed, requiring reduced up-keep and long-term maintenance over time.

The CCNRD and WSDOT will agree to the longterm maintenance of the culverts to ensure that fish passage and hydraulic capacity is maintained.

- 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.

The CCNRD staff will be working with consultants who have previously designed CMZ projects.

V. TASKS AND TIME SCHEDULE

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

Phase I
Spring 2006 (Task Complete): Coordination with local WDFW representatives and UCRTT to agree on a "best approach" to design.
Spring 2006 (Task Complete): CCNRD will work with subconsultants to complete the preliminary engineering and design plans.
Phase II
Fall 2006 (Current): Chelan County Lead Entity will pursue construction funding opportunities; specifically the SRFB 7th Round.
Winter 2006: Complete final site design, plans and specification. Apply for project permits. Prior to the end of permitting process, solicit bids for construction.
Spring - Summer 2007: Hire contractor and begin construction.
Fall 2007: Complete culvert installation and begin monitoring.

The CCNRD has recently implemented several salmon passage projects within WRIA 45.

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.

The primary constraint to the project involves the completion of project permitting prior to construction bid. The CCNRD expects to go to bid with the project in May or June of 2007 in order to construct in the summer of 2007. Permitting for Section 404, 401, Section 7 of the ESA, the HPA, and local permits is expected to take a minimum of 6 months. The CCNRD has worked hard with the local, state, and federal permitting agencies to obtain feedback on the preliminary design and prepare them for the upcoming permitting. If permitting delays the construction bid to the point that construction would not be timed with the in-water work window for Nason Creek the project construction may be delayed until 2008.