

SCOPE OF WORK – RESTORATION AND ACQUISITION PROJECTS (excluding Fish Passage)

INSTRUCTIONS: Salmon Recovery Funding Board applicants must respond to the following items. Local citizen and technical advisory groups will use this information to evaluate your project. Contact your lead entity for additional information that may be required. Limit your response to eight pages.

Submit information via the PRISM attachment process. Application checklists and attachment forms may be downloaded off the SRFB Web site at <http://www.rco.wa.gov/srfb/docs.htm>.

NOTE: Acquisition, Combination, and Diversions and Screening projects have supplemental questions embedded within this worksheet. Please answer the questions below and all pertinent supplemental questions.

1) PROJECT OVERVIEW

Explain your project overall and include the following elements:

- a) List your primary project objectives, such as how this project will improve or maintain habitat conditions and habitat forming processes.

In-stream habitat: Restore floodplain connectivity and natural floodplain processes. Provide off-channel rearing habitat, and both high flow and thermal refugia.

- b) State the nature, source, and extent of the problem that the project will address, including the primary causes of the problem, not just the symptoms. Explain how achieving the project objectives will help solve the problem. (Diversions and Screening projects should refer to the supplemental questions later in this worksheet for further guidance on information to include in their problem statement.)

The baseline conditions that salmonids presently face in the Lower Wenatchee subbasin result from considerable human alterations to the environment. Floodplain development and bank armoring in the Lower Wenatchee subwatershed have negatively affected ecological conditions in the river. Development in the floodplain altered the riparian community and gradually reduced the amount of large wood within the river channel. Channel confinement and bank armoring associated with roads, railways, and flood control disconnected the river mainstem from many of its historic pathways, reducing channel complexity and eliminating many wetland and riparian habitats along the river corridor (Andonaegui 2001, NPCC 2004, Biological Strategy 2008). Summer high temperatures are also problematic. Infrared imaging from the Department of Ecology indicates summer temperature can exceed 20.5 degrees Celsius on the mainstem Wenatchee in this region. Water diversions from the river and well water withdrawals from shallow aquifers in the floodplain amplify such problems associated with summer low flows (Andonaegui 2001).

The Goodfellow/Chotzen Floodplain Reconnection Project restores natural floodplain processes to an approximately 5-acre area located along the left bank (north side) of the Wenatchee River at RM 1.4. The project will remove a low earthen berm from the floodplain, allowing water from an existing side channel to access a larger portion of its historic floodplain during high flows. Additionally floodplain processes will be enhanced by creating a ~375 foot-long backwater

channel to serve as a reconnection point for water flowing across the newly opened floodplain area. This backwater will be excavated to intercept generally cooler groundwater, allowing it to function both as high flow and as thermal refuge for salmonids. All disturbed areas will be revegetated with native riparian species. The backwater channel has been specifically located to avoid existing floodplain trees to the extent feasible. Such trees will provide shade to the proposed channel.

- c) Describe the fish resources (species and life history stages present, unique populations), the habitat conditions, and other current and historic factors important to understanding this project. Be specific--avoid general statements.

The lower mainstem of the Wenatchee River is used by federally listed anadromous steelhead, fluvial bull trout, and chinook salmon for migration, spawning, and juvenile rearing. In addition to listed fishes, a variety of other resident and migratory species use this reach of the river as well. Table 1 indicates the federal status of listed fish known to use the project area.

Reconnection of floodplain habitats is primarily designed to benefit juvenile salmonids rearing, overwintering, or migrating through the project area. Spring-run Chinook salmon use the habitat within the project action area for juvenile rearing, overwintering, and migration and adult spawning and migration. Steelhead use the habitat within the project action area for juvenile rearing and outmigration and adult spawning and migration. Bull trout use the habitat within the project action area for juvenile rearing and migration and adult migration.

<i>Species</i>	<i>Federal Status</i>	<i>ESU/DPS/Region</i>	<i>Critical Habitat</i>
Spring Chinook salmon <i>Oncorhynchus tshawytscha</i>	Endangered	Upper Columbia River ESU	Yes
Steelhead <i>Oncorhynchus mykiss</i>	Endangered	Upper Columbia River ESU	Yes
Bull trout <i>Salvelinus confluentus</i>	Threatened	Columbia River DPS	No

- d) Discuss how this project fits within your regional recovery plan or local lead entity strategy (i.e., does the project address a priority action, occur in a priority area, or target priority fish species?).

When possible, list your sources of information by citing specific studies, reports, and other documents.

As mentioned above, channel confinement and bank armoring have reduced channel complexity and eliminated many wetland and riparian habitats along the river corridor (Andonaegui 2001, NPCC 2004, Biological Strategy 2008)

The proposed project is located in the Lower Wenatchee Subwatershed, which has a Category 2 status under the Revised Upper Columbia Biological Strategy (UCRTT 2008).

The Goodfellow/Chotzen project site was identified as CMZ #2, a high-priority area for floodplain restoration in the Wenatchee River Channel Migration Zone Study (Jones and Stokes 2004). The primary habitat limiting factors that currently exist on the Goodfellow/Chotzen project site include:

1. Floodplain function has been impaired by development.
2. Riparian habitat has been lost or degraded in this area.
3. Off-channel habitat and habitat complexity has been reduced or degraded in this area.

2) PROJECT DESIGN

- a) Describe the location of the project in the watershed (nearshore, estuary, main stem, tributary, off channel, etc.).

The Goodfellow/Chotzen floodplain reconnection project is located in WRIA #45 northwest of Wenatchee, WA and is situated on the left bank (north) of the Wenatchee River at RM 1.4. The proposed floodplain reconnection would occur along the left bank (north side) of the Wenatchee River at RM 1.4, within the channel migration zone. Land ownership is predominantly private along this reach of the Wenatchee River. The existing high flow channel is located within the Wenatchee River floodplain, and the proposed floodplain reconnection project would also take place within the river floodplain area. The right (south) bank of the Wenatchee River mainstem (across the river from the proposed project) is occupied by the Burlington Northern Railroad, which runs along the base of a steep hillslope with a bedrock base. The bedrock and railway limit any further lateral movement by the river in that direction.

- b) Describe the project design and how it will be implemented. Describe the extent of the project. Describe specific restoration methods and design elements you plan to employ. If restoration will occur in phases, explain individual sequencing steps, and which of these steps is included in this application. (Acquisition-only projects need not respond to this question.)

The proposed floodplain reconnection project has four primary components, each designed to address the limiting factors specific to the project site. The four project components are:

1) Remove/excavate the low earthen berm currently lining the edge of the existing side channel. This excavation area will not be designed to intercept groundwater, and is expected to be active during high-flow periods only. This area of excavation will measure approximately 4,000 square feet with an average depth of excavation of less than one foot. Approximately 120 cubic yards of material will be excavated and disposed of on-site, in an approved upland location. During periods of high flow, some water from the existing side channel is expected to flow through the newly excavated area, across the historic floodplain, and will re-enter the Wenatchee River at a natural low spot located near the downstream end of the floodplain.

2) Excavate a backwater channel off the Wenatchee River mainstem that will increase aquatic habitat complexity and also serve as a reconnection point for water flowing across the newly accessible floodplain. This reconnection point is located at a natural low spot near the downstream end of the floodplain where old scour marks indicate that water historically exited the floodplain. The excavated backwater channel at the reconnection point will be accessible to juvenile salmonids using the Wenatchee River mainstem, and will function as a high-flow refuge and off-channel foraging area. The backwater channel is designed to intercept groundwater throughout the year. Groundwater temperatures have not been sampled, but it is expected that groundwater will be cooler than the surface water of the Wenatchee, allowing the backwater to serve as thermal refuge. The elevation of groundwater in the project site, as well as surface water in the side channel and Wenatchee mainstem, was measured using a series of groundwater wells (Figures 4 and 5) that were monitored continuously from March to October of 2007. This area of excavation will measure approximately 375 feet in length (29,630 square feet). Approximately 4,546 cubic yards of material will be excavated from the floodplain to create the lower backwater channel. This material will also be deposited on-site, in an approved upland location.

3) All disturbed areas will be replanted using native riparian vegetation.

4) Anchored log structures and habitat snags will be placed in the lower excavation areas. Logs will be clustered into groups of generally 4 or more logs and used to serve as anchor points to capture and hold woody debris that comes in from upstream sources. The structures will provide overhead cover for juvenile salmonids, increase habitat complexity in the backwater area, promote channel-forming processes on the backwater, and may help stabilize soils while riparian

plantings mature. Additionally, two log jams will be placed near the mouth of the backwater channel, each consisting of approximately 12 logs. These log jams are proposed to help maintain the integrity of the mouth of the backwater.

- c) Describe the scale and size of the project, and its proximity to protected, functioning, or restored habitats. (Diversion and screening only projects [i.e., not a combination] need not respond to this question.)

The proposed project site is approximately 9 acres, of which approximately 7 acres will be affected either directly (0.75 acres) or indirectly (6.25 acres). Direct effects include excavating an approximately 375 feet long backwater channel connected to the mainstem Wenatchee and removing approximately 60 linear feet of man-made berm adjacent to an existing Wenatchee River side channel. Total excavation will be approximately 4,600 yards, which will be disposed of at a nearby upland (i.e. non-floodplain) location on the same parcel. Upstream and downstream of the site, a small riparian/floodplain corridor does exist, but is diminished by 50% to 75% from pre-developed conditions. The property owners have actively sought to purchase additional property adjacent to the project site, with the goal of future expansion of habitat restoration.

In addition to the direct effects, over 6 acres of floodplain that had been largely separated from the river by the berm will once again be fully connected to the river, allowing more normal floodplain processes to become re-established.

- d) Describe the salmonid species and life cycle stage(s) that are targeted to benefit by this project.

As mentioned above, the lower mainstem of the Wenatchee River is used by federally listed anadromous steelhead, fluvial bull trout, and chinook salmon for migration, spawning, and juvenile rearing. In addition to listed fishes, a variety of other resident and migratory species use this reach of the river as well. Table 1 indicates the federal status of listed fish known to use the project area.

Reconnection of floodplain habitats is primarily designed to benefit juvenile salmonids rearing, overwintering, or migrating through the project area. Spring-run Chinook salmon use the habitat within the project action area for juvenile rearing, overwintering, and migration and adult spawning and migration. Steelhead use the habitat within the project action area for juvenile rearing and outmigration and adult spawning and migration. Bull trout use the habitat within the project action area for juvenile rearing and migration and adult migration.

- e) Describe the long-term stewardship and maintenance obligations for the project or acquired land. For acquisition and combination projects, identify any planned use of the property, including upland areas.

The landowners initiated this project with the goal of creating high-quality habitat, and are firmly committed to establishing such habitat. To date, they have spend over \$120,000 towards this goal. Their future contribution will include access to the site and continued use of the property for habitat restoration. Chelan County Natural Resource Department will be responsible for managing the grant and for providing overall project management and implementation, including construction, oversight, final designs, budgets, permit revisions and monitoring for the project.

3) PROJECT DEVELOPMENT

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

The landowners, Steve Goodfellow and Tamar Chotzen, approached The Watershed Company to assist with the development of a habitat restoration plan on their property. The Watershed Company staff discussed the location with Bob Steele of the Washington Department of Fish and Wildlife and also reviewed the pertinent literature discussing the site (Jones and Stokes 2004,

Andonaegui 2001, NPCC 2004, Biological Strategy 2008). A preliminary concept plan was developed based on the habitat needs at the site as determined through these investigations.

Additional work that has been completed at the site includes the following:

1. *Survey Work*: Detailed survey of topography and significant trees throughout the project site (Figure 3). A complete wetland delineation and OHWM survey were also conducted on the site, and are included in this survey.
2. *Hydrologic Study*: Hydrologic study of ground water elevations throughout the project site, as well as surface water elevations in the existing side channel and in the Wenatchee River mainstem (Figures 4 and 5). These groundwater and surface water elevations were monitored continuously from March 2007 through October 2007.
3. *Cultural Resources Study*: A complete cultural resources study has been conducted at the project site by Northwest Archeological Associates, and was completed in June 2008.
4. *Preliminary Design*: A preliminary design (grading plan and riparian planting plan) was developed for the project site (Figure 6). The preliminary design was reviewed by the RTT in February and in July of 2008, and their comments are reflected in the current design.

b) Explain how the project's cost estimates were determined.

Cost estimates were derived based on quantities measure from the proposed design. Local unit costs were developed based on recent experience with similar projects in the region, estimated by The Watershed Company and verified by Chelan County staff with extensive construction experience in the region.

c) Describe other approaches, opportunities, and design alternatives that were considered to achieve the project's objectives.

Earlier design concepts included creation of a new, sinuous side-channel to connect the existing side channel to the Wenatchee. The channel would have been excavated deep enough to intercept groundwater along the entire 1,300+ foot length. Large woody debris was proposed in the channel and along the banks, including several habitat snags. The route of the new channel was carefully chosen to avoid unnecessary impact to existing riparian vegetation. Two instream ponds were included in the initial design concept to provide additional terrestrial and aquatic habitat. The goal was to provide a complete groundwater-fed floodplain channel and wetland system.

After receiving comments from the RTT the plan was revised to allow floodplain processes to develop more naturally. The first revision eliminated the ponds and several hundred feet of channel, essentially creating two backwaters, one off the existing side channel and the other off the Wenatchee. The final revision eliminated the upstream backwater channel, and simply removed the man-made berm, allowing flow to spill out of the side channel more often and thereby restoring floodplain processes. The plan also incorporates the Wenatchee River backwater as recommended by the Channel Migration Zone Study (Jones and Stokes, 2004) for rearing habitat, as well as high flow and thermal refugia.

d) Describe the consequences of not conducting this project at this time. Consider the current level and imminence of risk to habitat in your discussion.

This type of project has been recommended at this site for at least 4 years, based on the Jones and Stokes report. Habitat conditions have not changed significantly in that time: the floodplain is still largely disconnected from the river, rearing and foraging habitat is still limited, high-flow and thermal refuge is still limited, and large woody debris is still not abundant. There is no reason to believe that habitat conditions will improve in the future unless the recommended actions are taken.

- e) Include a Partner Contribution Form, when required, from each partner outlining its role and contribution to the project. This form may be downloaded off the SRFB Web site. State agencies are required to have a local partner that is independently eligible to be a project sponsor. A Partner Contribution Form is also required from partners providing third-party match.
- f) List all landowner names. Include a signed Landowner Acknowledgement Form (available on the SRFB Web site) from each landowner acknowledging their property is proposed for SRFB funding consideration. If a restoration project covers a large area and encompasses numerous properties, Landowner Acknowledgement Forms are not required. For sponsors proposing work on their own property this form is not required. For multi-site acquisition projects involving a relatively large group of landowners, include, at a minimum, signed Landowner Acknowledgement Forms for all known priority parcels.

Steve Goodfellow and Tamar Chotzen. See below for Acknowledgement Form.

- g) List the names, qualifications, roles, and responsibilities for all known staff, consultants, and subcontractors who will be implementing the project. If unknown, describe the selection process.

Mike Kaputa, CCNRD Director. Mike is the Director of the CCNRD and has Bachelor and Master's Degrees in environmental science and environmental policy and planning. Mike has over 15-years experience in natural resource planning, assessment and project implementation, including the past 5 years as Director of the CCNRD. Mike reports directly to the elected County Commissioners and represents the County on land, water, and other natural resource issues.

Joy Juelson, Natural Resource Specialist, Project Development. Joy Juelson is responsible for the coordination of habitat project development and policy justification. She has a Master's Degree in Natural Resource Management with an emphasis in ecological restoration. Joy has 15-years experience with the US Forest Service as an ecologist. In addition to her extensive field work experience in a variety of areas, Joy worked on a variety of fisheries-related projects and has experience in snorkeling, electro-fishing, radio telemetry, and spawning and stream surveys.

Michael Kane, Natural Resource Specialist, Project Coordinator. Michael Kane joined the CCNRD in June and will be coordinating habitat projects. Michael worked as a field biologist/consultant on forestry, wildlife habitat, wetlands and restoration projects in Chelan County for 12 years. He spent three years developing a successful stream restoration program for a Seattle based non-profit, Earth Corps. While at Earth Corps, he developed a field-based training program for corps members on site assessments, project management and restoration techniques.

Alan Schmidt, Habitat Program Manager, Project Manager. Alan Schmidt has over 25 years of experience with project management and implementation. Alan has owned his own forestry resources consulting business, served as a Transportation Engineer 2 for the Washington Department of Transportation, and managed major development and utility projects for the Chelan County Public Works Department. Alan's areas of expertise include project surveying; engineering and design; and on-the-ground project implementation, including bid procedures, construction management, and landowner negotiations.

Erin Fonville, Natural Resource Specialist, Riparian and Public Outreach. Erin Fonville joined the CCNRD in April 2007 and is responsible for managing the Riparian Habitat Restoration Program, the Shoreline Master Program Update, and project outreach. Prior to joining the team, Erin was employed for over 6 years with the Washington State Department of Natural Resources as a Natural Resource Specialist managing state trust land in Kittitas and Chelan Counties. Erin has over 9 years of experience managing natural resources in eastern Washington including

developing forest management plans, environmental documents, riparian management plans, project coordination, and working with multiple agencies, landowners, and other stakeholders.

Lee Duncan, Natural Resource Specialist, Project Inspector and Project Monitoring. Lee Duncan is the staff scientist responsible for providing technical expertise in the in the field during construction and also implements implementation and effectiveness monitoring. His background is in geomorphology, hydrology and water quality. Lee has 4 years experience with the US Forest Service as a Hydrologic Technician. This included leading stream survey crews, coordinating habitat and stream assessments and analyzing field data. Lee's experience also includes several years as a watershed coordinator which involved developing, overseeing and implementing stream restoration projects.

Kathy Bangs, Chief Accountant. Kathy Bangs joined the CCNRD in December 2006 to fill the position of Chief Accountant/Project Coordinator. She has over 15-years experience in Governmental Accounting and was employed for over 12 years by the Chelan County Department of Public Works as the Chief Accountant, attaining 12 years of successful audits conducted by the Washington State Auditor's Office. She has extensive knowledge and experience with budgeting, grant and project management, governmental accounting, and reporting requirements.

Matt Shales, Natural Resource Tech: Project Tech Support: Matt is responsible for on site project support; including project surveying, inspection and monitoring. Matt has been with CCNRD for over a year and has a degree in Natural Resource Management.

Mark Indrebo, Geomorphologist, The Watershed Company. A decade of experience in the study of stream and landscape processes give Mr. Indrebo exceptional skills in wetland, shoreline, stream and river assessment, restoration and habitat design. His work has encompassed planning for anticipated impacts to river and lake process, design, and construction oversight of river bank and shoreline protection and rehabilitation projects, site hydrological analysis and water quality planning for diverse clients, including private property owners, native tribes and state and local governments.

Bill Way, President, The Watershed Company. Founder of The Watershed Company in 1982, Mr. Way has more 25 years of experience in the managing, planning, designing, and implementing of river, stream, lake and wetland rehabilitation projects. His work encompasses both natural resource assessment, enhancement and mitigation. Bill's insistence on client service and practical, technical solutions has built a company with an outstanding reputation for successful project completion.

4) TASKS AND 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.

Item/Milestone	Outcome	Target Date (Month/Year)
Landowner agreement	Complete	November 2007
Survey of topography, significant vegetation, wetlands, and OHWM	Complete	August 2007
Preliminary Project Plans	Complete	December 2007
Cultural resources Study	Complete	June 2008
RTT review of preliminary project	Complete	February 2008
RE-design, incorporate RTT comments	Complete	June 2, 2008

RE-design, incorporate RTT comments	Complete	August 2008
Amend permit applications with approved plan	Receive federal, state and local permits for construction	March 2009
Project construction	Complete excavation and log placement	Summer 2009
Project construction	Riparian planting in disturbed areas	Fall 2009

CCNRD's staff has extensive experience in natural resource planning, assessment, and project implementation with regard to the ongoing salmon recovery efforts in the Wenatchee Subbasin.

5) CONSTRAINTS AND UNCERTAINTIES

Each project should include an adaptive management approach that provides for contingency planning. State any constraints, uncertainties, possible problems, delays, or unanticipated expenses that may hinder completion of the project. Explain how you will address these issues as they arise and their likely impact on the project.

Excavating the backwater channel off the Wenatchee will necessarily involve work below the water table. Excess water could hinder construction, and care will need to be taken, using Best Management Practices, to control construction-related water and runoff. Given the soil conditions at the site, it should be feasible to pump water out of the work area to adjacent upland locations with established vegetation to allow for biofiltration and infiltration. In a worst-case scenario, a portable water tank could be brought in to collect pumped water.

After construction, there will be a period before plants are fully established in which the excavated area may be subject to erosion. If significant volumes of eroded material are deposited in the backwater channel, it may become necessary to remove it if it is deemed to have a negative impact on habitat. In such a case, adaptive management money has been included in the budget for such a need. Additionally, the property owner has already contributed a significant amount of resources towards this project. In the extremely unlikely event that the adaptive management funds are insufficient to cover the expenses, the landowner may be willing to assist financially or in-kind.

Proper irrigation will be key to establishing the riparian vegetation. The project budget includes money for a temporary irrigation system. We probably don't need to mention this part and will deal with no irrigation if necessary

APPENDIX H – LANDOWNER ACKNOWLEDGEMENT FORM

Landowner Information:

Name of Landowner: Steve Goodfellow and Tamar Chotzen

Landowner Contact Information:

Mr. Ms. Title

First Name: Tamar Last Name: Chotzen

Contact Mailing Address: Goodfellow Brothers Inc., PO Box 220, Kihei, HI 96753

Contact E-Mail Address: tamar@chotzen.com

Property Address or Location: Non-address lots off of Lower Sunnyslope Road, Wenatchee WA 98801, Chelan County

I certify that Tamar Chotzen Goodfellow and Steve Goodfellow is the legal owner of property described in this grant
(landowner or organization) ^{are}

application to the Salmon Recovery Funding Board (SRFB). I am aware the project is being proposed on my property. My signature authorizes the applicant listed below to seek funding for project implementation, however, does not represent authorization of project implementation.


Landowner Signature

5-20-08
Date

Project Applicant Information

Project Name: **Wenatchee River Side Channel Extension Project**

Project Applicant Contact Information:

Mr. Ms. Title:

First Name: Aaron Last Name: Bosworth

Mailing Address: The Watershed Company, 750 - 6th Street South, Kirkland, WA 98033

E-Mail Address: abosworth@watershedco.com

Lead Entity Organization: Chelan County Department of Natural Resources