Nason Creek N1 - KDIZ3 Floodplain Reconnection

13th Round Funding Cycle

June 29, 2012

Anticipated Request from SRFB:	\$621,000.00
Anticipated Total Request:	\$621,000.00
Anticipated Other Contributions/Match :	\$110,000.00
Anticipated TOTAL Project Budget:	\$731,000.00

SRFB/TRIB Proposal Checklist

Project Title: Nason Creek N1 - KDIZ3 Floodplain Reconnection

Proposal Contents	Page of Application
A) Title Page: includes sponsor, project title, and funding request	1
B) Summary of project changes since pre-proposal	2
C) Checklist – yes, this checklist or a similar one specific to your proposal	3
 D) Scope of Work (1) Project Overview (2) Salmon Recovery Context (3) Citations (please don't include entire reports as attachments; rather summarize and reference) (4) Project Design (5) Project Development (6) Tasks and Schedule (7) Constraints and Uncertainties (8) Cost Estimate 	4-13
E) Stakeholder Review and Comment Tables	14-15
F) Figures 1-7	16-22
G) Photos (3 pages of 5 photos)	23-25
H) Landowner Acknowledgement Form(s)	26

SUMMARY OF PROJECT CHANGES SINCE THE PRE-PROPOSAL AND RESPONSE TO COMMENTS

1. Action Proposed

This project proposes to hydrologically reconnect the N1-KDIZ-3 floodplain through 2 culverts under the SR 207 highway. This will provide high flow refugia and rearing habitat for adult and juvenile spring Chinook and juvenile steelhead.

2. Sequence and Project Identification

During review, there were questions about project identification, development, and selection of the proposed alternative. This proposal provides more in depth information about the extensive project development at this site. CCNRD has worked with stakeholders on an alternatives analysis and a SR 207 feasibility study. A summary of stakeholder review is included from each report (see Tables 9 and 10 at the end of the proposal text). See also the description of project development in Sections 2 and 3 of this proposal.

- 1. Project Overview
 - A. Describe the primary goal and objectives of this project. When answering this question please refer to chapter 4 of the *Stream Habitat Restoration Guidelines* for a definition of restoration goals and objectives. Link to *Stream Habitat Restoration Guidelines* wdfw.wa.gov/publications/pub.php?id=00043

The goal of this project is to provide high flow refugia for adult and juvenile spring Chinook and juvenile steelhead in Lower Nason Creek. The objective is to reconnect a 4.6 acre high flow channel to the mainstem. In addition, there is over 9 acres of adjacent forested floodplain habitat. The total disconnected floodplain area is over 13 acres as defined by the 100 year floodplain LIDAR topography.

B. Describe the location of the project in the watershed, including the name of the water body(ies), upper and lower extent of the project (if only a portion of the watershed is targeted), and whether the project occurs in the near-shore, estuary, main stem, tributary, off channel, or other location.

The proposed project is located in lower Nason Creek at RM 4.6 (Figure 1). This section of Nason Creek flows north from Coles Corner adjacent to SR 207 in Chelan County. Nason Creek is a tributary to the Upper Wenatchee River.

C. Is the project located on state owned aquatic lands? Please refer to page 20 of this manual for information on state owned aquatic lands and who to contact at the Washington Department of Natural Resources for assistance.

No

D. Provide an overview of current project site conditions and the nature, source, and extent of salmon recovery problem(s) that the project will address. Include current and historic factors important to understanding the need for this project. Be specific – avoid general statements. When possible, list your sources of information by citing specific studies, reports, and other documents.

When the new alignment of SR 207 was constructed in the 1940's, Nason creek was disconnected from a 13 acre floodplain near RM 4.6. This area has been identified as a disconnected floodplain and high flow channel (N1, LN DOZ1, and KDIZ3) in three previous studies which are further described in Section 2B below.

In the 1940's, Nason Creek was nearly 100 feet away from the new highway prism at this location (Figure 2). In November 1995, a flood event on Nason Creek washed out a portion of

SR 207 (Photos 1 and 2). WSDOT repaired the road bed in 1995 and installed riprap along the banks of Nason Creek. The emergency highway repair was constructed during high-water conditions; therefore, the toe of the slope was not constructed below the potential scour depth. Thus, additional rip rap was added to repair additional scouring along the base of the highway riprap protection. This second repair did not fix the toe of slope or the limited width of the highway shoulder. Thus, in 2011, Washington State Department of Transportation (WSDOT) maintenance crews installed additional riprap to reinforce the toe of slope and slightly expand the width of the bank protection to create a 5-foot wide highway shoulder consistent with highway safety standards (Photos 3 and 4 depict the rip rap bank). This project also included the installation of four rock barbs to help deflect stream flows away from the highway prism. Today, at RM 4.6, Nason Creek makes a 90 degree turn against the road prism at the upstream end of the project corridor (Photo 3).

Near the upstream of end of the rip-rap bank, there is a 24" concrete culvert that conveys high water flows from Nason Creek under SR 207 and into the disconnected floodplain. The surface water connection through this culvert is currently limited to a small area near the culvert. Beyond that limited area, the 13 acre disconnected floodplain consists of a high flow channel partially vegetated with red osier dogwood. The adjacent floodplain is dominated by Ponderosa pine and fir trees with native understory vegetation.

At the downstream end of the disconnected floodplain, there is a wide (approximately 50') open canopy area (Photo 5). This area is currently inundated by groundwater and there is a limited duration seasonal surface water connection to high flows in Nason Creek through a 48" culvert under SR 207. The Bonneville Power Administration (BPA) powerlines cross Nason Creek just north of the project area. There is bank erosion and Nason Creek has a split flow channel underneath the powerlines.

E. Provide a detailed description of the proposed project, including project size, scope, design, and how it will address the problem(s) described above. Describe specific restoration methods and design elements you plan to employ.

This project proposes to reconnect the 13 acre floodplain to Nason Creek by installing a 30' diameter box culvert at the downstream end of the floodplain and a 10' diameter metal pipe at the upstream end of the floodplain. These structures will reconnect a 4.6 acre high flow channel with over 9 acres of adjacent forested floodplain habitat (Figure 3). Please note that the floodplain connection acreage calculations vary slightly depending upon the flood event chosen and the limits of the floodplain polygon boundaries. The 13 acre floodplain limits described in this proposal are defined by the SR 207 road prism and the100 year floodplain boundary in the Tributary Assessment LIDAR (USBR 2008).

This floodplain is currently hydrologically connected to Nason Creek through a 24" diameter culvert at the upstream end and a 48" diameter concrete culvert at the downstream end. However, the downstream culvert outlet to Nason Creek is located on a floodplain gravel bar so it is inaccessible to fish for most of the year. The downstream culvert connection will be adjusted slightly downstream to connect into Nason Creek near a pool rather than at a gravel bar (Figure 4). This location was also selected to minimize impacts to riparian vegetation; it avoids riparian tree removal.

The proposed reconnection will provide backwater connectivity to the floodplain habitat throughout the spring, and flow through connectivity through the upstream culvert during 2-year events or greater. Flow-through channel activation during the 2-year storm event will allow this system to function similar to the CMZ-13 project on the Wenatchee River. A high flow channel with seasonal activation provides high flow refugia and off-channel rearing habitat. For example, during the 2-year event, there would be a floodplain channel ranging in width from 20 to 50 feet with about 100 cfs flowing about 2.5 feet deep. During the 10-year event, about 500 cfs would flow through the floodplain channel with a depth of about 4 feet. At the 100-year event, about 1,000 cfs would flow through the floodplain channel with a depth of about 5 feet.

In addition to the culvert installation, there would be some excavation in the downstream end of the floodplain to enhance the duration of the connectivity. The water depth in the enhanced side channel would be over 1' throughout most of the spring. Excavation would be limited to that necessary to provide greater connectivity and remove potential fish stranding areas. Figure 5 depicts a typical cross section showing existing elevation, proposed excavation, and a low flow channel that would be created. All disturbed areas would be replanted with native vegetation. Figures 4 and 5 depict conceptual design that would be advanced to preliminary design, routed for stakeholder review, and then moved to final design while permits were being obtained for construction.

F. If restoration or acquisition will occur in phases or is part of a larger recovery strategy, describe the goal of the overall strategy, explain individual sequencing steps, and which of these steps is included in this application.

This project is not proposed to occur in phases. However, if both 2012 SRFB Nason Creek proposals are funded, these could be designed, permitted, and constructed at the same time.

This project will occur following a suite of high priority actions in Nason Creek that have been identified from the Nason Creek Tributary Assessment and subsequent Reach Assessments. This project was originally identified in the Kahler Reach Assessment (USBR 2009) and through subsequent site-specific alternatives analysis, reach scale geomorphic evaluation, and stakeholder review and input. Project identification, prioritization, and watershed scale sequencing is further described in Section 2 below.

G. 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.

CCNRD would conduct implementation monitoring for one to two years (if funded) to ensure that the culverts and plants installed continue to meet the project objectives. If adaptive management actions are needed, CCNRD would work with project partners to secure funding and implement those actions. USFS is the landowner so they would provide the long-term stewardship of the project areas.

H. Has any part of this project previously been reviewed or funded by the SRFB? If yes, please provide the project name and SRFB project number

(or year of application if a project number is not available). If the project was withdrawn from funding consideration or not awarded SRFB funding, please describe how the current proposal differs from the original.

This project was previously proposed in the 2010 grant round (PRISM project # 10-1788). The 2010 application was for the final design and permitting of the N1 Nason Creek floodplain reconnection. This proposal was submitted to SRFB when CCNRD was working on the alternatives analysis for project actions in this reach. The final proposal did not score highly with the RTT because local reviewers wanted to pursue the feasibility of SR 207 relocation. The project was an alternate for SRFB funding and the review panel comments were as follows: While relocating Highway 207 may be the ideal alternative from a fish habitat perspective, it is hard to imagine this alternative being considered in the near future.

3. Salmon Recovery Context

Describe the fish resources present at the site and targeted by this project.

Species	Life History Present	Current Population Trend	ESA? (Y/N)	Life History Target
Steelhead	Egg, juvenile, adult	Stable	Y	Juvenile rearing
Spring Chinook	Egg, juvenile, adult	Stable	Y	Adult high flow refuge, juvenile rearing, and adult spawning
Bull trout	Adult	stable	Y	Adult (migratory)

Table 1: Fish Species Present

B. Discuss how this project fits within your regional recovery plan or local lead entity strategy to restore or protect salmonid habitat in the watershed (i.e., does the project address a priority action, occur in a priority area, or target priority fish species?).

The Upper Columbia Region Biological Strategy (UCRTT 2008) and the Recovery Plan (UCSRB 2007) have identified Nason Creek as the top priority for habitat restoration in the Wenatchee subbasin. Nason Creek has a high potential to increase salmonid abundance and productivity, therefore, the restoration of ecosystem function through the reconnection of off-channel habitats and floodplain is a priority. Within Nason Creek, side-channel and/or off-channel reconnection is a Tier 1 action and top priority for addressing limiting habitat factors, improving channel function, and the recovery and long-term viability of salmonids in Nason Creek (USBR 2009).

The Nason Creek Tributary Assessment (USBR 2008) describes instream and riparian conditions from RM 4.6 - 14. Initially, the Tributary Assessment and subsequent Reach Assessments completed in Nason Creek did not cover lower Nason Creek (RM 0 - 4.6) because the Channel Migration Zone (CMZ) study (Jones and Stokes 2004) described potential habitat

enhancement projects in this area. USBR completed an assessment of existing conditions in Lower Nason Creek in 2011. The Reach Assessments and the CMZ study are used to select high priority projects for implementation.

This disconnected floodplain was most recently identified in the Lower Nason Creek Assessment of Geomorphic and Ecologic Indicators (USBR 2011) (Figure 3). It is described as LN DIZ-1, or Lower Nason Disconnected Inner Zone – 1 which is a 4.6 acre high flow channel. The report also identifies surrounding areas as LN DOZ-1, LN DOZ 3b, and LN-DOZ 5b as Lower Nason Disconnected Outer Zones. These areas lie within the historic 100 year floodplain of Lower Nason Creek. Currently, LN DOZ 5b is mostly high ground under the BPA powerlines.

This project was previously identified in an amendment to the Kahler Reach Assessment (USBR 2009) identified K DIZ-3 and KDOZ-6 at RM 4.6 (Figure 6). KDIZ-3 is a potential disconnected inner zone (former stream channel or active floodplain area) and the adjacent K DOZ-6 is a disconnected outer zone (riparian or floodplain area). The Wenatchee River Channel Migration Zone Study (Jones & Stokes 2004) identified N1 as remnant oxbow channel that is disconnected from the active valley flat by SR 207 (Figure 7). In the subsequent Nason Creek Subreach Unit Prioritization (ICF Jones & Stokes 2009) the N1 project site was ranked as the highest reconnection priority in the Kahler Reach.

C. Explain why it is important to do this project now instead of at a later date. Consider its sequence relative to other needs in the watershed and the current level and imminence of risk to habitat in your discussion.

As described in Section 2B above, Nason Creek is identified as a high priority for restoration actions as part of the Recovery Plan. The highest priority floodplain reconnection projects are currently in progress at Upper White Pine and Lower White Pine. Thus, restoration actions in Lower Nason Creek are intended to follow the priority sequence in this watershed.

- 3. Design and Implementation Questions for Restoration Projects (Acquisition-only projects need not respond to these questions.)
 - A. Will the project design be (or has it been) developed by a licensed professional engineer? If your project will not be designed by a professional engineer, please describe the qualifications and experience of your project design team.

Preliminary design has been developed by a licensed professional engineer.

B. Describe your experience managing this type of project. Please describe other projects where you have successfully used a similar approach.

CCNRD has managed two similar projects, the 2007 oxbow reconnection and the 2009 oxbow reconnection, on Lower Nason Creek. Both of these projects involved placing culverts under SR 207 to reconnect floodplain (and former Nason Creek mainstem) habitat.

C. Please describe who will provide construction management for the project.

Alan Schmidt, Habitat Project Manager for CCNRD will provide construction management oversight for this project. Alan has a total of 30 years of construction management experience working for CCNRD, Chelan County Public Works, and WSDOT.

D. The design process for restoration projects is expected to follow that described in <u>Appendix D1-4</u>. If your process differs from those

expectations, please describe your process and how it differs. This includes projects where you intend to follow a "design-build" process. Please describe the design and construction process you intend to follow.

This project will follow Appendix D 1-4.

E. As-built drawings must be prepared if changes are made to the final design during construction and if the sponsor is using a design-build construction approach. Describe how you anticipate documenting as-built conditions.

CCNRD will prepare as-built drawings.

F. Describe other approaches, opportunities, and design alternatives that were considered to achieve the project's objectives and why the preferred alternative was selected.

CCNRD has been working with USFS, WSDOT, Wenatchee Habitat Subcommittee, USBR, and RTT to identify and prioritize actions in Lower Nason Creek RM 3.3 - 4.6. CCNRD completed an alternatives analysis that identified 6 alternative actions to improve habitat in this reach.

- 1. Re-locate SR 207 and reconnect 74 acres of floodplain
- 2. Build a causeway to span the 13 acre disconnected floodplain
- 3. Build two bridges to hydrologically reconnect the 13 acre floodplain
- 4. Install one or two culverts under SR 207 to reconnect the 13 acre floodplain
- 5. Install large wood structures in Nason Creek
- 6. No action

During RTT review of this document in January 2011, the RTT voted to pursue feasibility of Highway 207 re-location as the highest priority alternative and reconnection of the 13 acre floodplain with one or two culverts as the second option. The highway re-location feasibility study completed in April 2012 identified costs of 6 alternative highway locations that ranged in cost from 10-20+ million.

The following comments are from the April 2012 RTT meeting notes:

A general question was posed to the RTT: whether the cost of the project is worth the potential biological benefit. Discussion ensued and some felt outright that the cost was

too excessive for potentially little biological benefit. Others were interested in seeing additional information, and how the modeling team determined biological benefit. Others would be more encouraged if the WSDOT would cost share on this project, and it was suggested that the cost of continuing to fix the road in the vicinity be part of the analysis. It was decided that the CCNRD should move forward with development of the pre-proposal, and consider all of the information and input that was discussed. After the pre-proposal is developed, the RTT would be able to offer additional input on the proposal.

This proposal is to implement the culvert reconnection under SR 207 since it does not appear that SR 207 relocation funds are available. The Alternatives Analysis (CCNRD 2011) and the SR 207 Relocation Feasibility Study (CCNRD 2012) are available online through habitat work schedule: http://hwsconnect.ekosystem.us/Project.aspx?sid=290&id=15026

G. Have members of the community, recreational user groups, adjacent landowners, or others been contacted about this project? Describe any public safety or other concerns about the project raised from these contacts and how those concerns were or will be addressed.

Stakeholder outreach has been part of the development of the alternatives analysis and the SR 207 Feasibility Study. Stakeholder contacts are documented in both of those reports and those summary tables are attached at the end of this proposal. In summary, the SR 207 relocation options meet WSDOT (AASHTO) safety standards, however, WSDOT does not have funds to contribute towards re-location of SR 207. CCNRD has presented the SR 207 relocation options to the RTT and it appears that there may not be sufficient funding for highway re-location without a significant contribution from WSDOT.

- 4. Project Development
 - A. Explain how the project's cost estimates were determined. Please include a detailed project cost estimate and attach in PRISM. Clearly label the attachment in PRISM "Cost Estimate."

Cost estimates were prepared by a consulting engineer, CCNRD construction manager, and CCNRD staff based upon costs for implementation of similar projects. The project budget or cost estimate is attached at the end of this proposal text.

B. Include a Partner Contribution Form (<u>Appendix J</u>), when required, from each partner outlining the partner's role and contribution to the project. Refer to Section 3 of this manual for information on when a Partner Contribution Form is required.

Partner Contribution Form(s) will be included with the final proposal uploaded into PRISM.

C. List all landowner names. If the proposed project occurs on land not owned by the grant applicant, attach a signed Landowner Acknowledgement Form (<u>Appendix K</u>) in PRISM, when applicable, from each landowner acknowledging that his or her property is proposed for SRFB funding consideration. Refer to Section 3 of this manual for information on when a Landowner Acknowledgement Form is required.

A landowner acknowledgement form from USFS is included at the end of this proposal.

- 5. Tasks and Schedule
 - A. List and describe the major tasks and time schedule you will use to complete the project.

PROJECT TIMELINE

Item/Milestone	Outcome	Target Date (Month/Year)
Design	Contracting	January 2013
	30% Design drawings	February – March 2013
	Stakeholder	March 2013
	review/comment	
	Permit ready plan view and	April – June 2013
	cross section drawings	
Permitting	Permit preparation and	July 2013
	submittal	
	Permit authorization and bid	December 2013
Construction	Bid	Spring 2014
	Construction	Summer 2014
	Planting	Fall 2014
Close-out	Adaptive management and	Summer 2015 and 2016
	implementation monitoring	

- 6. Constraints and Uncertainties
 - A. 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.

As described above, CCNRD has worked extensively with stakeholders to develop this project. As constraints or uncertainties arise, we will continue to work with stakeholders to address them.

REFERENCES:

CCNRD. 2012. Nason Creek RM 3.3 – 4.6 SR 207 Relocation Feasibility Study. Available online at <u>http://hwsconnect.ekosystem.us/Project.aspx?sid=290&id=15026</u>

CCNRD. 2011. Nason Creek N1/KDIZ3 Alternatives Analysis. Available online at <u>http://hwsconnect.ekosystem.us/Project.aspx?sid=290&id=15026</u>

ICF Jones & Stokes. 2009. Final Report. Nason Creek Subreach Unit Prioritization. June. Prepared for the Chelan County Natural Resources Department. (ICF J&S 00224.09) Bellingham, WA.

Jones & Stokes. 2004. Chelan County Natural Resource Program, Final Wenatchee River Channel Migration Zone Study - Phase II. April 16. (J&S 01243.01) Bellevue, WA. Prepared for the Chelan County Natural Resource Program, Wenatchee, WA.

Upper Columbia Regional Technical Team (UCRTT). 2008 A Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region. April 30, 2008. Available online at http://www.ucsrb.com/resources.asp.

UCSRB. 2007. Upper Columbia Salmon Recovery Board's Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan. August 2007. Available online at http://www.ucsrb.com/plan.asp or http://www.ucsrb.com/UCSRP% 20Final% 209-13-2007.pdf.

U.S. Bureau of Reclamation (USBR). 2008. Nason Creek Tributary Assessment, Chelan County, Washington. Technical Service Center, Denver, CO. and Pacific Northwest Regional Office, Boise, ID. March 2009.

U.S. Bureau of Reclamation (USBR). 2009. Kahler Reach Assessment, Chelan County, Washington. Technical Service Center, Denver, CO. and Pacific Northwest Regional Office, Boise, ID. March 2009.

USBR. 2011. Lower Nason Creek Assessment of Geomorphic and Ecologic Indicators, Nason Creek, Wenatchee Subbasin. Chelan County, Washington. Pacific Northwest Regional Office, Boise, ID. March 2011.

Table 9: Summary of Community Involvement, Stakeholder, and Technical Review (From the CCNRD2011 Alternatives Analysis Report)

Meeting	Date (2010)	Attendees/Notes
Wenatchee Habitat	Monthly	Monthly project status updates have been provided to the Wenatchee
Sub-committee	April-Sept,	Watershed Action Team which consists of agency staff, interested public,
	November	and watershed planning unit members. At the November 17 meeting, the
	presentation	results of the alternatives analysis were presented and attendees were asked
		to provide comments on the alternatives.
WA Dept. of	May 6,	Meetings with WSDOT regional planners and maintenance staff have
Transportation	October 6,	indicated that WSDOT would support any of the draft alternatives,
	December 1	however, they do not have funds (or unfunded staff time) to contribute
	and 22	towards this project.
US Forest Service	May 4, May	Meetings with USFS staff have indicated that the USFS Nason Creek
	15, October	watershed action plan identifies restoration of stream processes as the
	4, January 6	highest priority. Therefore, USFS supports the road re-location
		(Alternative 1). USFS can seek funds for project development and
		permitting, however, they would need project partners to provide financial
		support for project construction.
Design Team	June 15	Provided a detailed project overview to agency staff and potential future
		funders including WA Dept. of Fish and Wildlife, Yakama Nation, Upper
		Columbia Salmon Recovery Board, US Bureau of Reclamation, and US
		Fish and Wildlife Service
Longview Timber	June 22	Met with Steve Tift, Longview Timber who expressed support for the
		project, however, the County GIS layer property boundaries are incorrect.
		Longview only owns the land west of Nason Creek and SR 207.
		Depending upon the final design plans and staging area locations, they may
		not be a landowner within the project area.
Salmon Recovery	June 23	SRFB review panel members, Regional Technical Review Team members,
Funding Board		and Citizens Advisory Committee members visited the site and expressed
(SRFB) Project		interest in consideration of one additional project alternative, SR 207
Tour		relocation. This design alternative will be added to the alternatives
		analysis for consideration.
Regional Technical	July 7,	July 7 presentation included a project overview and Q/A session with the
Team	December 17,	SRFB review panel members and Regional Technical Team members.
	January 12	Written feedback from both groups indicated that the downstream
		connection or road relocation will likely be the recommended alternatives.
		On December 8, RTT members were provided a summary of project
		alternatives for review and the results of the alternatives analysis were
		presented on January 12.
Salmon Recovery	July and	SRFB provided the following review comments: While relocating
Funding Board	October	Highway 207 may be the ideal alternative from a fish habitat perspective, it
Review Panel		is hard to imagine this alternative being considered in the near future.

Table 10. Summary of Community Involvement, Stakeholder, and Technical Review for the development of the SR 207 Nason Creek Feasibility Study (red text indicates edits for this proposal)

Meeting	Date (2011)	Attendees/Notes
Wenatchee Habitat	Monthly	Monthly project status updates have been provided to the Wenatchee
Sub-committee	updates,	Watershed Action Team which consists of agency staff, interested public,
	August	and watershed planning unit members. At the August 17 meeting, the SR
	presentation	207 relocation alternatives were presented.
WA Dept. of	April 22, June	The 2011 office and field meetings with WSDOT regional planners and
Transportation	15 and 29,	engineers, Olympia CED office, and maintenance staff have focused on
	Sept 6 and 12,	review of the SR 20/ relocation options since 2010 meetings covered
	March 20	review of the other 5 alternatives. wSDO1 prefers alternatives $1 - 4$ due to the steeper clones and possible cycloneshe become consistent with
		alternatives 5 and 6 WSDOT does not have funding to contribute
		towards this project
US Forest Service	April 1 and	USES owns the majority of the land for the SR 207 relocation alternative
es i clest service	22. June 9. 15.	Therefore, office and field meetings with USFS staff focused on
	and 29, Sept	reviewing the SR 207 relocation options to determine whether or not this
	12 and 15,	alternative would be consistent with forest plan documents and
	October 4	designations. USFS has indicated that restoring natural stream processes
		in Nason Creek is a high priority for this watershed. Thus, the USFS
		Wenatchee River Ranger District supports working collaboratively with
		other stakeholders to explore in greater detail options for relocation of
		HWY 207.
BPA	Sept. 27	Coordination with BPA engineering department has been to evaluate the
	memo and	construction feasibility of the SR 207 relocation options. On October 13,
	October 13	CCNRD provided a detailed project update to BPA fish and wildlife staff
	meeting, May	Wono funded the SK 207 feasibility study as part of the CCNRD-BPA
	0, 2012	indicated that they would not contribute more than 3 million towards SP
		207 relocation and that level of contribution would need to be towards a
		project with high biological benefit.
CPUD	June 29	A June 29 th meeting with CPUD, USFS, and WSDOT staff discussed
		utility lines within the SR 207 alignment
Private Landowners	March 25,	These dates represent phone calls, emails, letters, meetings, and/or field
	April 12, 19,	visits with private landowners in the project area and community members
	28, May 7,	in the Nason Creek watershed. Future correspondence with landowners
	June 10, 16,	and the community will be necessary to select a preferred alternative.
	23 and 24,	
	July 26,	
	October 26	
Regional Technical	January 12	The results of the 2010 alternatives analysis were presented on January 12, 2011. The DTT wated to further investigate the facilities of the SD 207
Team	and Sontombor 14	2011. The KTT voted to further investigate the feasibility of the SK 20/
	2011 and	the road relocation alternative alignments and they provided feedback on
	April 11	how to analyze the biological benefit of this project. The biological
	2012	benefit analysis has been made available to RTT members for review to
		determine if there is sufficient benefit to support the costs of SR 207 re-
		alignment.



Figure 1: Location map depicting the vicinity of the Nason Creek floodplain reconnection project.





Figure 3. This graphic was produced by USBR to clarify the acreage and polygons of the 4.6 acre high flow channel in blue. This graphic also depicts disconnected floodplain polygons in lavender which total over 13 acres because it includes the SR 207 road prism and some topographic high areas under the BPA powerlines. This graphic is based upon the data collected in the Lower Nason Creek Assessment of Geomorphic and Ecologic Indicators (USBR 2011).





Figure 5: Cross section of existing and proposed bed elevations in the downstream portion of the high flow channel. Spring and 2 year water surface elevations are also overlaid on this graphic. However, spring water depth would likely be even higher due to existing groundwater levels. Note that this design is conceptual so final design could incorporate a more defined low flow channel, large wood structures, or other edits based upon stakeholder review and comment.



Figure 6: KDOZ-6 and KDIZ-3 depict the floodplain and high flow channel area disconnected from Nason Creek by SR 207 (Kahler Reach Assessment USBR 2009).



Figure 7: N1 site identified in the Channel Migration Zone Study (Jones and Stokes 2004).



Photo 1: 1995 flood that washed out the SR 207 road prism near RM 4.5. Photo taken from the north looking south.



Photo 2: 1995 flood that washed out the SR 207 road prism near RM 4.5. Photo taken from the south looking north.



Photo 3: 2010 site conditions in Nason Creek where there have been 3 road maintenance repairs in the last 10 years.



Photo 4: Fall 2011 site conditions in Nason Creek depicting the additional rip rap and rock barbs installed to protect the road prism.



Photo 5: Existing spring conditions in the downstream portion of the disconnected high flow channel. The source of standing water is primarily groundwater as the existing culvert under SR 207 did not have a surface water connection to Nason Creek on the date this photo was taken (June 15, 2012). This area would be enhanced with minor excavation and a larger culvert under SR 207 would provide fish access for spring high flow refugia and juvenile rearing habitat.

Landowner Information

Name of Landowner: US Forest Service

Landowner Contact Information:

Mr. Ms. Title: District Ranger, Wenatchee River Ranger District

First Name: Jeff Last Name: Rivera

Contact Mailing Address: 600 Sherbourne, Leavenworth, WA 98826

Contact E-Mail Address: jrivera02@fs.fed.us

Property Address or Location: Nason Creek RM 3.5 - 4.7

- 1. US Forest Service (Landowner or Organization) is the legal owner of some of the property described in this grant application.
- 2. I am aware that the project is being proposed on my property.
- 3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
- 4. My signature does not represent authorization of project implementation.

Landowner Signature

<u>ØSM</u>AY12 Date

Project Sponsor Information

Project Name: Nason Creek RM 3.5 – 4.7 Reach Based Restoration

Project Applicant Contact Information: Mike Kane

Mr. Title: Natural Resources Specialist, Chelan County Natural Resources Department

First Name: Mike

Last Name: Kane

Mailing Address: 316 Washington Street, Suite 401, Wenatchee, WA 98801

E-Mail Address:mike.kane@co.chelan.wa.us