

Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project

Technical Proposal for FY23 WaterSMART Aquatic Ecosystem Restoration Projects

Funding Opportunity No. R23AS00106



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Executive Summary

May 25, 2023

The Confederated Tribes and Bands of the Yakama Nation (Yakama Nation), in partnership with the Washington State Department of Transportation (WSDOT), the U.S. Forest Service (USFS), the Bonneville Power Administration (BPA), and in coordination with the Wenatchee Subbasin Watershed Action Team (WAT), are leading a large scale salmon habitat restoration project taking place along Nason Creek near the City of Leavenworth in Chelan County, Washington, within the Northern Treaty Territory of the Yakama Nation. The Yakama Nation is a Category A applicant seeking Task A: Study and Design funding for the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project, which is a project that seeks to remove a problematic 0.65-mile-long segment of State Route 207 from the Nason Creek floodway to restore stream habitat for Endangered Species Act (ESA) listed spring Chinook salmon, steelhead, and bull trout.

The Yakama Nation requests WaterSMART design funding support from the U.S. Bureau of Reclamation so that final permitting and construction designs can be engineered in January 2024 through July 2025 that will create a new State Route 207 roadway alignment in adjacent uplands away from the Nason Creek floodplain, and so that that final permitting and construction designs can be engineered in January 2024 through 2026 that will allow extensive floodplain, instream, side channel, and off-channel habitats to be created and enhanced in disconnected floodplain areas once State Route 207 is removed from the floodway. The Yakama Nation is building a large coalition of partners and funders to support implementation of the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project in May 2025 through November 2026, which occurs on USFS managed lands in one of the highest priority assessment units for salmon habitat restoration actions under the federally adopted Upper Columbia Basin Spring Chinook Salmon and Steelhead Recovery Plan.

The Yakama Nation leads and implements large scale salmon habitat restoration projects throughout the Upper Columbia Basin through its Yakama Nation Fisheries Upper Columbia Habitat Restoration Project.

Project Location

The Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project is located in the Wenatchee Subbasin along Nason Creek in Chelan County, Washington, approximately 15 miles north of the city of Leavenworth, near the junction of State Highway 2 and State Route 207, Figure 1. The project latitude is 47°45'38.86" N and the longitude is -120°44'02.16" W.

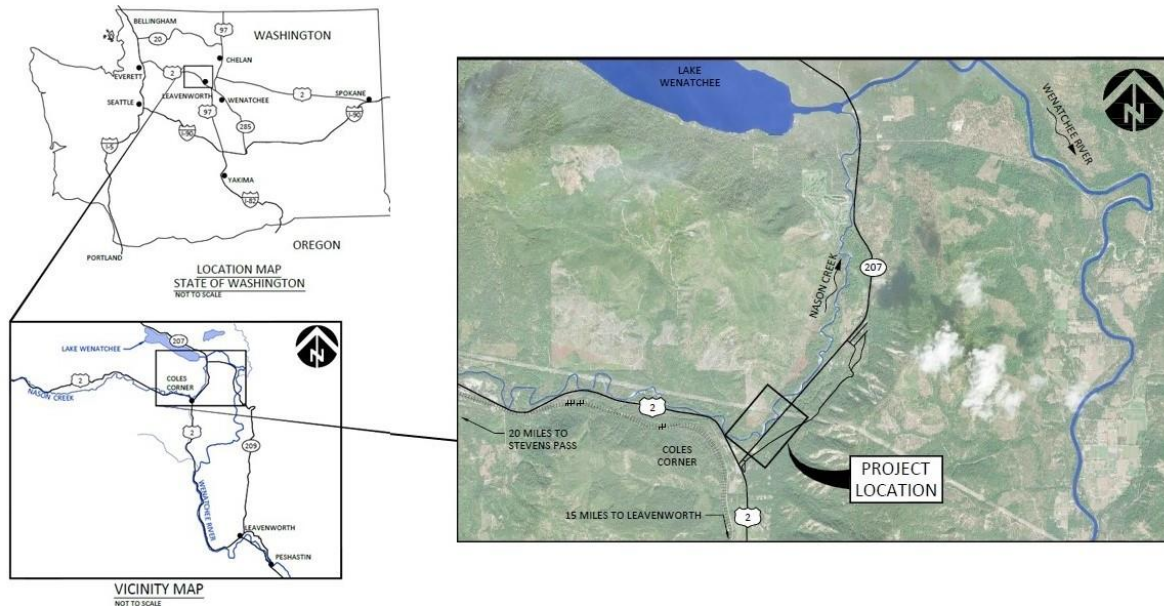


Figure 1, Vicinity Map of the SR 207 Reroute and Restoration project, 2023.

Project Description

The Yakama Nation is seeking \$500,000 for Task A: Study and Design work that will support the creation of engineered permit and construction level designs for constructing a new 0.87-mile length of roadway of State Route 207 outside of the Nason Creek floodplain, and for creating engineered permit and construction level designs for salmon habitat restoration in the disconnected floodplain zone where State Route 207 currently bisects the Nason Creek floodplain. The ultimate goal of the project is to reroute a particularly damaging segment of State Route 207 away from Nason Creek so that roughly 13 acres of floodplain habitat, including side channels and wetlands important to fish life, can be restored to benefit ESA listed spring Chinook salmon, steelhead, and bull trout.

There are four major design tasks being proposed for funding through this application. These include the following task/deliverable elements:

1. Engineered permit level (60%) designs for the new State Route 207 road alignment.

Yakama Nation will hire an expert civil engineering consultant who will create accurate depictions of project footprint, project impacts to environmentally sensitive areas (including potential mitigation elements to offset impacts), property boundaries, geotechnical evaluations and roadway engineering specifications, updated basis of design report, grading and surfacing CAD models, new highway easement boundaries, replacement specifications for new utility lines, construction sequencing plan, traffic management plans, site drainage and stormwater control plans, and other relevant permit level criteria.

2. Engineering construction level (100%) designs for the new State Route 207 road alignment.

Yakama Nation will hire an expert civil engineering consultant who will create final construction plans that specify the methods of construction, construction limits, construction quantities, locations, and elevations of project elements, required best management practices and conservation measures to protect human health and environmentally sensitive areas, construction task definitions and task bid sheets, final basis of design report, construction performance criteria, final traffic management plans, timing of performance requirements, and other relevant construction level criteria needed to competitively bid, award, and implement construction of the new highway alignment away from the Nason Creek floodplain.

3. Engineered permit level (60%) designs for stream and floodplain habitat restoration.

Yakama Nation will hire an expert engineering consultant with expertise in hydraulic modeling and instream habitat restoration who will create accurate depictions of the project footprint, project impacts to environmentally sensitive areas (including potential mitigation elements to offset impacts), property boundaries, geotechnical evaluations and engineered log structure construction/stability specifications, updated basis of design report, grading CAD models, wetland and side channel creation plans, vegetation restoration plans, construction sequencing plan, traffic management plans, stormwater control plans, and other relevant permit level criteria.

4. Engineering construction level (100%) designs for stream and floodplain habitat restoration.

Yakama Nation will hire an expert engineering consultant with expertise in hydraulic modeling and instream habitat restoration who will create final construction plans that specify the methods of construction, construction limits, construction quantities, locations, and elevations of project elements, required best management practices and conservation measures to protect human health and environmentally sensitive areas, construction task definitions and task bid sheets, final basis of design report, construction performance criteria, final traffic management plans, timing of performance requirements, and other relevant construction level criteria needed to

competitively bid, award, and implement construction of the instream and floodplain restoration plan for the area once State Route 207 is removed from the floodplain.

Yakama Nation has previously updated multiple technical reports and studies recommending removal of State Route 207 away from Nason Creek, including a 2022 Supplemental Alternatives Analysis that demonstrates a preferred road realignment alternative that meets all project objectives. Since completion of the 2022 Supplemental Alternatives Analysis the Yakama Nation has contracted with multiple engineering and design firms to create conceptual and 30% designs of the roadway realignment and stream/floodplain habitat restoration actions. The 30% design process is currently underway and should be completed by the end of 2023. It is Yakama Nation's intention to use FY23 WaterSMART Task A: Study and Design funding to complete the 60% and 100% design deliverables for both the roadway engineering work and the habitat restoration engineering work, that will allow the project to proceed to implementation. It is hoped that by being successful in obtaining Task A: Study and Design funding the Yakama Nation will be eligible for applying for Task B: Construction funding once 60% designs are completed to ensure the estimated \$10 million construction project can be completed using a mix of federal, state, and local funds.

Given the Yakama Nation experience in conducting river restoration in the Upper Columbia Basin, we understand that it will be necessary to implement the construction of the new State Route 207 roadway alignment a year prior to the floodplain/instream habitat restoration work being implemented. Following this overall sequencing concept will ensure that construction windows for both project elements are long enough to succeed given the short summer time work windows available in this region of Washington State, where winter conditions can linger for up to seven months. This two year sequencing concept will also ensure that traffic disruptions for users of State Route 207 will be minimized because most highway construction work can take place while the current roadway is operable, and then the habitat restoration can take place in year 2 after traffic has been diverted to the new roadway alignment. Because of the split of the two actions into two different implementation years, it is recommended that we use different specialized engineering firms between the roadway designs versus the habitat restoration designs, based on our experience with regional consultants in both of these types of practices. This is why the four major tasks and deliverables described for this grant application are split up the way they are for this specific project.

Project Benefits

The Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project is being developed as an endangered species salmon recovery action consistent with the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (UCSRB, 2005), and the 2020 Columbia River System BiOP (National Marine Fisheries Service, 2020). Nason Creek has historically been a critically productive spring Chinook salmon, steelhead, and bull trout spawning and rearing tributary in the Wenatchee Subbasin. The reduction of salmonid abundance in the Wenatchee Subbasin correlates closely with increased habitat impairments induced in Nason Creek during railway, powerline, highway, logging, and residential development over the past century. These development actions have cut off hundreds of acres of biologically critical wetlands, alcoves, side channels, and river oxbow habitats, and much of Nason Creek is now a simplified single thread/low sinuosity system disconnected from the historic floodplain.

Given its historic importance for supporting salmon runs and the high geomorphic intrinsic potential to be productive salmonid habitat, the Lower Nason Creek Assessment Unit has consistently been identified as a logical top priority stream system to focus salmon habitat restoration efforts within the Upper Columbia Basin salmon recovery framework. The current Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region (UCRTT, 2021) identifies channel complexity restoration, floodplain reconnection, and side channel and off-channel habitat restoration as top priority restoration action categories needed in Nason Creek to contribute to improved status of the viable salmonid population parameters for spring Chinook salmon, steelhead, and bull trout.

In the proposed project area, Nason Creek has become artificially constrained and significantly cut off from historically productive side channel and floodplain habitats by the placement of State Route 207 in the floodway in 1943 (Figure 2). The location and down valley alignment of State Route 207 in the floodway has become increasingly problematic in recent decades as Nason Creek has attempted to naturally meander into the historic floodplain corridor.

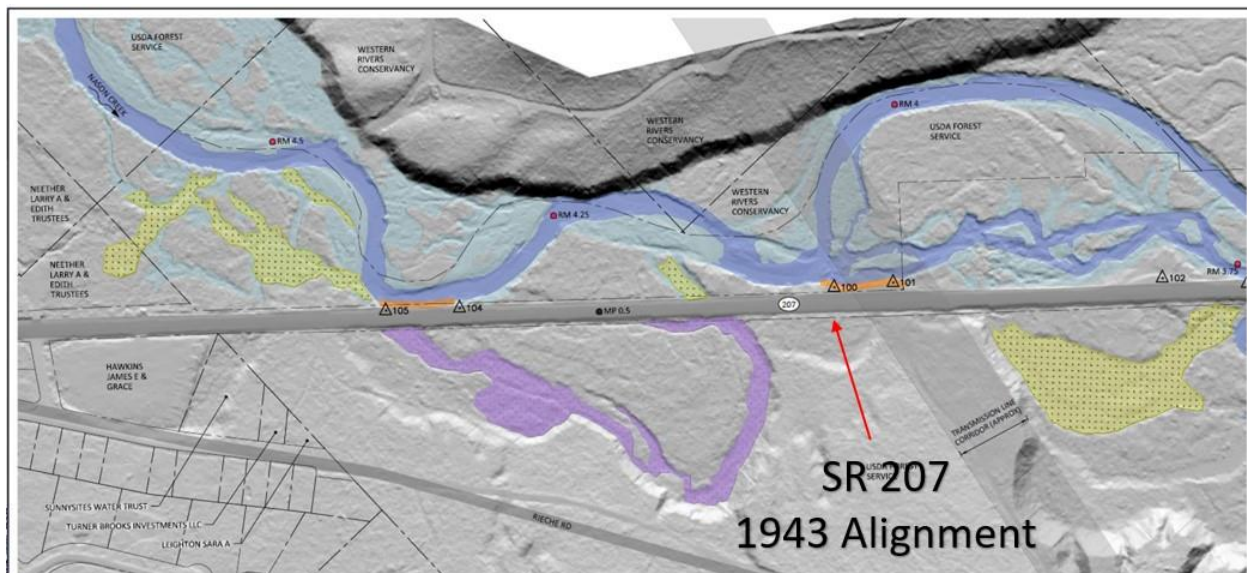


Figure 2, Nason Creek with State Route 207 located in center of floodplain with the disconnected floodplain identified in purple, 2023.

Repeated flood events since 1943 have caused natural channel migration trends to increasingly encounter the roadway prism which has now actively destroyed two different segments of the two-lane highway (Figure 3). This has caused the Washington State DOT to create new rock fortified streambanks along hundreds of feet of the creek body which diminishes instream habitat quality and impedes riparian vegetation growth (Figure 4).



Figure 3, Roadway erosion in 1995.



Figure 4, Rock fortified streambank with rock barbs in channel, summer 2022.

The Washington State DOT has now registered the roadway erosion sites as top priority Chronic Environmental Deficiency sites requiring additional funding and planning to resolve the conflicting interactions between the roadway and the aquatic environment. In 2018 the Washington State DOT engaged Yakama Nation Fisheries in developing a partnership to address the top priority Chronic Environmental Deficiency sites so that the best restoration and fisheries outcomes could be obtained while also accounting for the needs of the highway to continue to function. One of the first actions Yakama Nation Fisheries and the Washington State DOT undertook to develop a restoration plan for this was to conduct further geomorphic assessments of the project area to fully understand the river processes and the likely trajectories of habitat and roadway erosion conflicts based on existing conditions. This analysis indicates that that spawning and rearing habitat in the project area has been vastly diminished by the roadway development and protection actions, and that the current residual creek channel meanders are at risk of being further cutoff, which would have deleterious effects on the remaining intact spawning and rearing habitats, as well as causing further damage to the state highway.

In response to these issues of concern, Yakama Nation Fisheries has developed a project concept that removes the most damaging and at-risk segments of SR 207 out of the floodway and floodplain, realigns SR 207 in to adjacent federally managed uplands already impacted by road and powerline development, and restores extensive side channel, floodplain, and mainstem complexity habitats in the project reach, while also directly addressing the river avulsion risks (Figure 5).



Figure 5, Depiction of the road realignment concept and the location of the two Washington State Department of Transportation Chronic Environmental Deficiency sites along Nason Creek, 2021.

For context on the project benefits, Figure 6 provides a hydraulic modeling illustration of the floodplain reconnection and floodway expansion benefits the proposed roadway realignment project will realize for the Nason Creek watershed. In the figure the red circles depict the two high priority WSDOT CED sites that would be fully removed from the project area upon implementation. Figure 7 provides an illustration of the stream habitat restoration we are designing to improve river processes and salmon spawning and rearing habitat in the project reach assuming the highway is successfully relocated to adjacent uplands.

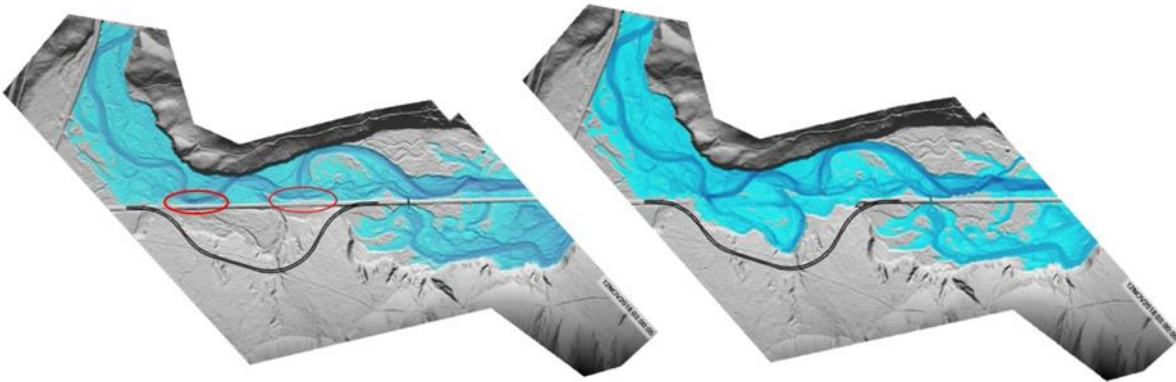


Figure 6, Illustration of the modeled inundation for a 100-year flood for existing conditions vs. the removal of the roadway out of the floodplain, 2021.

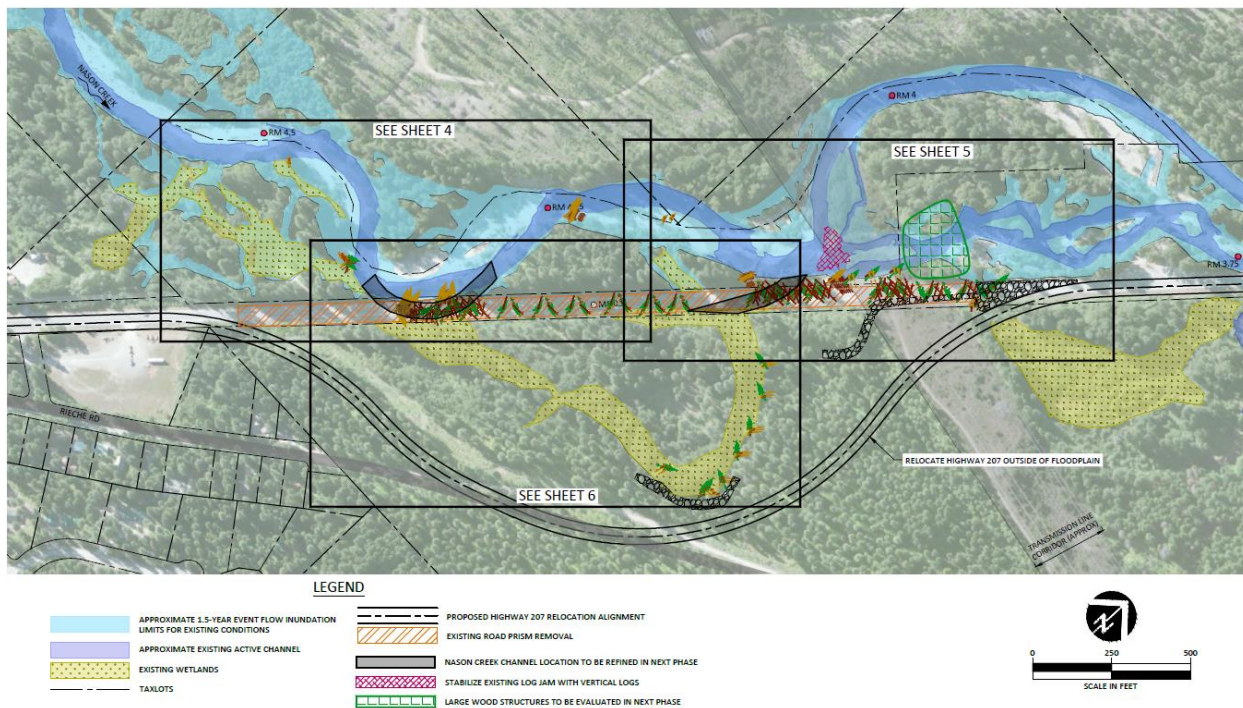


Figure 7, Habitat and floodplain restoration designs without SR 207 in the floodplain, IFI 2022.

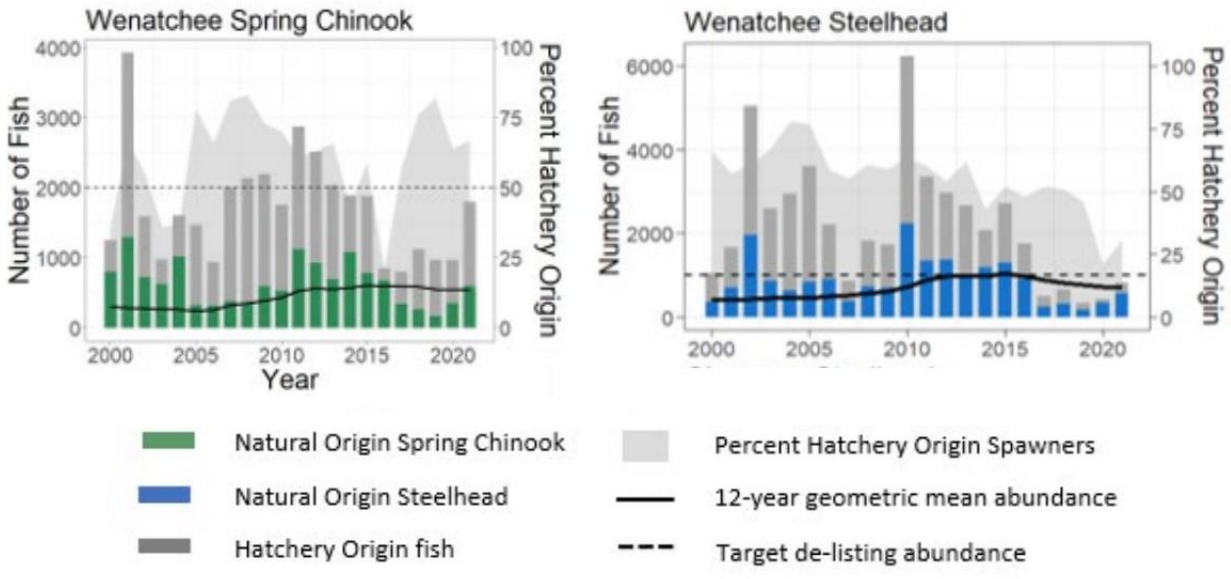
We anticipate through this project that 13 acres of floodplain will be reconnected to Nason Creek, 0.5 miles of artificial fill and bank protection will be removed from the creek system (eliminating two registered WSDOT CED sites), 0.5 miles of side channel rearing habitat will be reconnected and enhanced, 0.5 miles of spawning habitat will be protected by preventing further unnatural channel avulsions, another 1 mile of side channel rearing habitat will be protected by preventing further unnatural channel avulsions, and ten new habitat log structures will be installed in the main channel to enhance salmonid spawning and rearing conditions. These project elements will provide a major biological uplift for ESA listed spring Chinook salmon, steelhead, and bull trout that use the habitats in this area for spawning and rearing life stages.

In addition to the aquatic benefits listed, this project will also directly benefit the stability and safety of transportation infrastructure for State Route 207, which serves as a critical route connecting the Lake Wenatchee, Plain, and Chiwawa Loop Road neighborhoods to Leavenworth and State Highway 2. The project will minimize the risk of further damage being done to the roadway by Nason Creek hydraulics, and will ensure the road stays open for important safety access and for the economic benefit of maintaining tourism connections with the Lake Wenatchee recreational landscape.

The project also benefits the treaty resource interests of the Confederated Tribes and Bands of the Yakama Nation, by helping to increase the quality of fish habitat for culturally important fish runs within the Ceded Area of the Yakama Nation. This project will continue to empower the Yakama Nation to be a leader for salmon recovery in the Upper Columbia region, and will help strengthen the Yakama Nation's important partnerships with the U.S. Bureau of Reclamation, the Washington State Department of Transportation, and the U.S. Forest Service.

Quantification of Specific Project Benefits

Population status of ESA listed spring Chinook salmon and steelhead in the Wenatchee Subbasin (UCSRB, 2021):



The Upper Columbia Regional Technical Team’s 2021 Habitat Action Prioritization Within the Upper Columbia River Basin identifies the following facts about habitat health in the project area:

Priority Actions: Restore Reach Function, Address Limiting Factors

Priority Species: Spring Chinook, Steelhead, Bull Trout

Priority Life Stages: Spawning and Incubation, Winter Rearing, Summer Rearing, Holding and Maturation, BT Natal Rearing

Rank 1 (Unacceptable) Limiting Factors: Pool Quantity and Quality, Temperature- Rearing, Temperature- Adult Spawning, Temperature- Adult Holding, Brook Trout

Rank 2 (At Risk) Limiting Factors: Bank Stability, Channel Stability, Stability, Cover- Wood, Floodplain Connectivity, Off-Channel- Side-Channels, Riparian-Disturbance, Riparian-Canopy Cover, Riparian

Priority Action Categories: Bank Restoration, Brook Trout Management, Channel Complexity Restoration, Channel Modification, Fine Sediment Management, Floodplain Reconnection, Instream Flow Enhancement, Riparian Restoration and Management, Side Channel and Off-Channel Habitat Restoration, Water Quality Improvement

Our project will directly benefit all of the priority fish species and life stages identified in the UC RTT habitat prioritization, and will directly address most of the priority limiting factors and action categories by removing artificial constraints to natural riverine processes and restoring more natural channel roughness, geometries, and complexity that support productive salmonid spawning and rearing habitat.

This project is consistent with priorities for habitat restoration for ESA listed species that take into account full watershed processes and conditions. The project will have direct benefits on stream

sediment transport dynamics, riparian forest health, water quality affecting temperature and pollution discharge, and road density within the floodplain of Nason Creek.

The project will also effectively eliminate two of the top priority WSDOT CED sites in North Central Washington (WSDOT, 2021), lowering annual maintenance costs caused by annual flood induced erosion and enhancing the sustainability of a roadway that sees over 2,000 vehicle trips per day during the peak tourist season (May – August).

Prior Restoration Planning and Stakeholder Involvement and Support

Prior Planning and Design

The current project proposal builds on decades of work conducted by multiple federal, state, and local agencies seeking to resolve conflicts between SR 207 and Nason Creek. The following list of technical documents highlights the history of assessments have been completed for the project area: • A Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region, September 2021 • Nason Creek Tributary Assessment, Bureau of Reclamation 2008 • Lower Nason Assessment of Geomorphic and Ecologic Indicators Nason Creek, Wenatchee Subbasin, Bureau of Reclamation 2011 • Nason Creek, RM 3.4-4.6 Floodplain Enhancement, Interfluve Inc. 2019 • Feasibility Analysis SR 207 Realignment, Pertee 2021 • Nason Creek RM 3.3 to 4.6 Supplemental Alternatives Analysis, Interfluve Inc. 2022 • Nason Creek Watershed Analysis, USFS 1996, • Salmon and Steelhead Biological Assessment for the Nason Creek N1 Floodplain Reconnection Project, ICF International 2012 • Nason Creek N1/KDIZ3 Alternatives Analysis Report, CCNRD 2011 • Nason Creek River Mile 3.3-4.6 Feasibility Study, CCNRD 2012

In 2022 Yakama Nation Fisheries completed a new Supplemental Alternatives Analysis (Yakama Nation, 2022) with the engineering consultant Inter-Fluve, Inc. to re-analyze which of the myriad of restoration and roadway realignment alternatives should be selected for implementation in the project area. The Supplemental Alternatives Analysis indicated that the current road re-alignment proposal being considered in this funding application fulfilled the most resource objectives requested for analysis by project partners such as WSDOT, USFS, WDFW, and Chelan County. All of the other alternatives considered had critical feasibility constraints or did not adequately meet the project objectives (Figure 8).

Alternative ID:	Alternative Description	Count of Occurrences	Sum of Occurrences			
			Green	Yellow	Orange	Red
1	Chelan County Road Re-alignment		6	6	5	1
2	Chelan County Road Re-alignment		6	5	7	0
3	Chelan County Road Re-alignment		6	5	7	0
4	Chelan County Road Re-alignment		6	5	7	0
5	Chelan County Road Re-alignment		11	1	5	1
6	Chelan County Road Re-alignment		11	1	3	3
7	Yakama Nation Road Re-alignment		8	9	1	0
8	Chelan County Raised Road Causeway		7	3	8	0
9	Chelan County Floodplain Reconnect (Bridges)		7	3	8	0
10	Chelan County Floodplain Reconnect (Culverts)		8	2	8	0
11	Engineered Large Wood Jams		9	3	4	2
12	No Action		10	0	4	4

Green=exceeds objective/criteria.
Yellow=adequately meets objective/criteria.
Orange=only partially meets objective/criteria.
Red=does not meet objective/criteria, potential fatal flaws.

Figure 8, Output summary table from the 2022 Supplemental Alternatives Analysis, Yakama Nation 2022.

Based on the recommendations of the Supplemental Alternatives Analysis, Yakama Nation Fisheries has commissioned two further engineering studies to develop 15% engineer’s designs for the roadway realignment work and the habitat restoration work. We are now working on development of 30% designs for both the roadway realignment work and the habitat restoration work with the shared intent with WSDOT and the USFS to attempt to implement restoration in this project area starting in 2025 based on funding timelines associated with WSDOT CED obligations.

We are using the following shared goals and objectives to further develop the restoration plan between the project partners:

1. Restore quality salmon habitat & habitat sustaining natural processes by addressing the ecological concerns in a cost effective manner by;
 - Restoring winter & summer low flow connectivity to available peripheral and transitional habitats necessary for rearing juvenile ESA listed species.
 - Increase mainstem habitat complexity & channel roughness to increase surface water connectivity with adjacent floodplain for year round habitat availability.
 - Increase surface water contributions to the disconnected floodplain to improve riparian & wetland vegetation conditions, & to enhance groundwater storage & hyporheic discharge.
 - Decrease energy & velocities which will increase sediment fallout & improve spawning areas for returning adults.

2. Reduce or eliminate stream system impacts to the SR 207 roadway in a manner that preserves roadway integrity and protects the traveling public.
 - Realign a 0.55 mile length of SR 207 infrastructure from out the floodplain.

- Realign powerline & utilities infrastructure from the floodplain.

3. Address WSDOT CED sites along SR 207.

- Remove 2 of Washington State Department of Transportation CED sites along Nason Creek.

4. Prevent unnatural creek channel avulsions from occurring adjacent to SR 207 so that productive spawning & rearing habitats can be maintained & enhanced in the broader project reach.

- Use habitat complexity treatments and new channel meander paths to stabilize hydraulic function.

These additional objectives are also being used by the project design team to develop the road realignment and habitat restoration project elements:

- Ensure Highway 207 maintains efficient and safe traffic flow similar to current conditions by constructing to American Association of State Highway and Transportation Office standard (AASHTO).
- Minimize impacts of Highway 207 to Nason Creek and associated critical areas and promote salmon habitat restoration opportunities.
- Decrease ongoing flooding impacts and damage to the Highway 207 road prism.
- Minimize earthwork and impacts to US Forest Service land.
- Avoid impacting private lands with the new highway alignment.

Stakeholder Involvement and Support

Yakama Nation Fisheries is working closely with the Bonneville Power Administration, the United States Forest Service, the Washington State Department of Transportation, the Washington State Department of Fish and Wildlife, and Chelan County to develop the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project. We currently have an intergovernmental agreement with WSDOT that provides funding support to the Yakama Nation for development and implementation of the project. WSDOT will also provide engineering and technical review of the highway construction designs to ensure the project meets state highway standards.

We are processing a new Tribal 638 Agreement with the Okanogan/Wenatchee National Forest that will provide additional funding support to the project from the USFS Collaborative Forest Landscape Restoration Program, and will designate the Forest Service as the federal NEPA, ESA, and NHPA lead. Outside of the WSDOT highway easement the project occurs extensively on federal lands managed by the Okanogan/Wenatchee National Forest.

Bonneville Power Administration is providing funding support for the fish habitat components of the project through the 2008 Columbia Basin Fish Accords, and will also review the project proposal for potential impacts to BPA powerline infrastructure.

The Washington State Department of Fish and Wildlife helps administer the WSDOT CED program for the Washington State Department of Transportation, and they will be a key permitting agency for the project under the Washington State Hydraulic Code.

Based on the project's large scale and potential impacts to important infrastructure that supports economic resiliency in Chelan County, Yakama Nation Fisheries has been meeting regularly with the Chelan County Board of Commissioners and the Natural Resources Department to take in their input about the project. Chelan County has provided key technical resources regarding past evaluations of habitat restoration opportunities in the project area, and they continue to provide important information to Yakama Nation Fisheries about the community's interests in the project area.

Yakama Nation Fisheries is also engaged in an extensive outreach effort with the general public, neighboring landowners, regional commercial interests, to develop local awareness of the project and to solicit direct input by interested parties. In March 2022 we hosted a public meeting that was advertised by mail to over 3,000 households regarding the project proposal. Roughly 100 people attended that event. We have also created a website and published our public presentation regarding the project proposal for interested parties to see. The website provides ways for anyone to provide us direct comment regarding the current project proposal: <https://yakamafish-nsn.gov/restore/projects/yakama-nation-fisheries-state-route-207-project-chelan-county>

When this project enters the NEPA and permitting review phase there will be more extensive public outreach and agency coordination through the Okanogan/Wenatchee National Forest as the federal NEPA lead. Further outreach and stakeholder engagement will happen at that time with support from the Yakama Nation as the key project proponent.

While we anticipate there will be some negative comments about the project from the public due to the scale and high visibility of the project, so far the comments we have received have been supportive of the rigorous data backing up the purpose and need for the project action, and appreciation for there being ways to improve both the roadway safety and fish habitat.

Project Implementation and Readiness to Proceed

The current road realignment proposal has taken into account likely impacts to sensitive areas like wetlands which could influence project construction techniques, project footprint standards, or require compensatory mitigation. Yakama Nation Fisheries has already engaged regional project permitters to discuss the likely project scope and impacts to understand whether additional permitting burdens may exist. At this time, based on the concept that the new road realignment will mostly be in a stable upland location, actual permitting constraints and requirements are likely to be relative straight forward and should not require significant changes for the current conceptual designs. Field visits have been scheduled for summer 2023 in anticipation of implementation in 2025 and 2026. The actions for the Historic preservation act have already begun and to date no issues have been identified. Soon the project proposal will be evaluated through NEPA and SEPA processes where the project funders and land management agencies will have to make decisions on how to proceed based on public feedback. This project proposal has been developed in close coordination with the likely NEPA and SEPA leads, and we believe the purpose, needs, and cost/benefits of the proposal are clear and this action is supported by the local community. Permit level designs for the roadway removal and habitat restoration will be completed by the end of 2023 and construction level designs will be completed December 31, 2025, thus allowing for implementation of the roadway to begin in 2025 and the habitat restoration to begin summer of 2026.

We anticipate the following major steps to be completed moving forward:

1. Build final consensus and agreement with WSDOT and USFS on the proper placement and designs for this project.
2. Complete permitting and final construction designs for project based upon the partnership agreements (this is the element we are currently seeking WaterSMART funding for).
3. Complete ROW negotiations between USFS, WSDOT, and utility franchises.
4. Begin and complete construction of the roadway alignment out of the floodplain between mile posts 0.20 and 0.85 while the original roadway remains in place for traffic access. This action includes realignment of utilities sited along the roadway once the new roadway construction is mostly completed.
5. Commission the new SR 207 segment for public use.
6. Begin and complete all instream and floodplain habitat restoration actions in the project area, including ELJ construction, side channel and alcove construction, riparian vegetation and wetland plantings, and removal of old highway bank protection and roadway fill from the floodplain.

The following schedule describes how we intend to move forward with this project:

- Engineer's Design of the New Roadway, - 30% Permit level Plan Set - This work is already contracted by the Yakama Nation –2023
- Engineer's Design of Instream Habitat Restoration, – 30% Permit Level Plan Set – This work is already contracted by the Yakama Nation – 2023

- Public Outreach Process – Public meetings and outreach products – Yakama Nation will be the lead along with Washington State Department of Transportation, and United States Forest Service – 2023 through 2026
- Site Tours – Yakama Nation will be the lead along with Washington State Department of Transportation and United States Forest Service. – 2023 through 2027
- Review, Comment, and Acceptance of Road Removal 30% Designs – The Yakama Nation, Bonneville Power Administration, Washington State Department of Transportation, and United States Forest Service – Fall 2023
- Review, Comment, and Acceptance of Restoration 30% Designs – The Yakama Nation, Bonneville Power Administration, and United States Forest Service – 2023
- Utility realignment planning – The Yakama Nation will lead the discussions and coordinate the work with Washington State Department of Transportation, and United States Forest Service 2023 through 2026
- WSDOT Easement Realignment on USFS Lands, (this includes franchise ROW) - United States Forest Service, Washington State Department of Transportation, and Utilities 2023-2025
- Engineer’s Design of the New Roadway - 60% Plan Set - The Yakama Nation will contract this deliverable - 2024
- Engineer’s Design of Habitat Restoration - 60% Plan Set - The Yakama Nation will contract this deliverable - 2024
- Permitting; NEPA, ESA Section 7 Consultation, and NHPA Section 106 Consultation - The Yakama Nation, Bonneville Power Administration, and United States Forest Service – 2023 through 2025
- Review, Comment, and Acceptance of Roadway, 60% Designs – The Yakama Nation, Bonneville Power Administration, Washington State Department of Transportation, and United States Forest Service – 2024
- Review, Comment, and Acceptance of Habitat Restoration, 60% Designs – The Yakama Nation, Bonneville Power Administration, and United States Forest Service – 2024
- Environmental Permitting through WDFW, USCOE, WDOE, and Chelan County - The Yakama Nation and Washington State Department of Transportation, United States Forest Service – 2023 through 2025
- Final Roadway Construction Design – 100% - The Yakama Nation will finalize this deliverable by the end of 2024
- Final Instream Habitat Restoration Construction Design – 100% - The Yakama Nation will finalize this deliverable in 2024 or in 2025
- Roadway Construction Contracting - The Yakama Nation will create a competitive bid and hire a roadway construction contractor by late 2024 to early 2025.
- Begin Roadway construction Activities for building the new road segment – Construction contractor with Yakama Nation as the Owner spring to fall 2025.
- Relocate utilities along the right of way – CCPUD, Ziplly Fiber and T-Mobile - spring and fall 2025.
- Complete roadway construction and commission new roadway alignment for public use Yakama Nation and Washington State Department of Transportation – fall 2025.
- Habitat Restoration, Construction Contracting - The Yakama Nation will create competitive bid and hire a habitat restoration construction contractor by March 2026.

- Begin Construction Activities for Instream Habitat Restoration – Construction contractor with Yakama Nation as the Owner summer 2026.
- Remove obsolete SR 207 original roadway from the Nason Creek Floodplain – fall 2026.
- Site stabilization and plantings - The contractor hired by the Yakama Nation will plant, seed and restore all staging areas, access routes and riparian areas – October/November 2026 to 2027.

Department of Interior and Bureau of Reclamation Priorities

This project directly addresses climate change priorities by increasing flood damage resilience to the Nason Creek ecosystem and SR 207 roadway infrastructure. The project will also help support additional riparian forest growth and shading of the stream corridor to help offset anticipated increased stream temperatures caused by climate change.

The Yakama Nation is identified on the Council on Environmental Quality’s interactive Climate and Economic Justice screening tool map as one of the most deserving of the Disadvantage and Underserved Communities. Receiving funding from BOR for design and potentially implementation for a project such as this will help BOR fulfill its Tribal trust responsibilities and will protect and enhance valuable treaty resources and help support the tribal fish management goals. This project will have a direct effect on the first foods of the Yakama Nation for future generations.

Project Budget

Yakama Nation Fisheries is seeking funding BOR WaterSMART funding to support 60% and 100% engineering and design efforts for both the highway re-alignment and the habitat restoration components of the project. We currently have match funding provided by the Bonneville Power Administration and the Washington State Department of Transportation for completing these phases of the project (Table 1). We are attaching the template Attachment B - Budget Detail and Narrative spreadsheet to this proposal to satisfy the Budget Narrative requirements.

Table 1. —Summary of Non-Federal and Federal Funding Sources

Funding Sources	Amount
Non-Federal Entities	
1. Bonneville Power Administration	\$165,600.00
2. Washington State Department of Transportation	\$100,000.00
Non-Federal Subtotal	\$265,000.00
Requested Reclamation Funding	\$500,000.00

Environment and Cultural Resource Compliance

This current design only project proposal does not anticipate ground disturbing activities to be completed using BOR WaterSMART funding during the project performance period. Later construction phases of the project will require NEPA, NHPA, and ESA consultations, which will be led by the Okanogan/Wenatchee National Forest as the federal land manager. Bonneville Power Administration will also participate as a cooperating agency during NEPA, NHPA, and ESA consultations when this project proceeds to the construction phases.

Overlap or Duplication of Effort Statement

The Yakama Nation is unaware of any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. The Yakama Nation is seeking additional construction funding for this project from America the Beautiful (pre-proposal submitted in April 2023) and WA State RCO (proposal will be submitted in June 2023). No estimated cost overlaps exist between these applications.

Conflict of Interest Disclosure Statement

The Yakama Nation has no Conflict of Interest concerning this application. At the time of submitting this application by the applicant, there are no conflict-of-interests for the award of the WaterSMART grant, No. R23AS00106.

Uniform Audit Reporting Statement

The Confederated Tribes and Bands of the Yakama Nation receives more than \$750,000 in federal funding on an annual basis and is required to submit Single Audit reports. The Employer Identification Number is 91-0576806.

References

Inter-Fluve 2019. Nason Flood plain RM 3.4-4.6 10% Basis of Design Report.

Inter-Fluve 2020 updated 2023. Nason Creek, RM 3.8-4.6 Floodplain Enhancement Concepts Basis of Design Report

Perteet 2021. Feasibility Analysis SR 207 Realignment Nason Creek Floodplain.

Inter-Fluve 2022. Nason Creek RM 3.3 to 4.6 Supplemental Alternatives Analysis.

Upper Columbia Salmon Recovery Board 2007. Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan.

Upper Columbia Regional Technical Team 2017 & Revised 2021. A Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region.

U.S. Department of Interior Bureau of Reclamation 2011. Reclamation Managing Water in the West, Lower Nason Creek Assessment of Geomorphic and Ecologic Indicators Nason Creek, Wenatchee Subbasin Chelan County, Washington.

U.S. Department of Interior Bureau of Reclamation 2008. Reclamation Managing Water in the West, Nason Creek Tributary Assessment, Chelan County, Washington.

Lake Wenatchee Ranger District Wenatchee National Forest 1996. Nason Creek Watershed Analysis.

U.S. Department of Interior Bureau of Reclamation 2009. Reclamation Managing Water in the West, Kahler Reach Assessment, Nason Creek, Chelan County, Washington.

Chelan County Natural Resources Department 2012. Nason Creek River Mile 3.3-4.6 Feasibility Study.

Chelan County Natural Resources Department 2011. Nason Creek N1/KDIZ3 Alternatives Analysis Report.

Cardno 2012. Technical Memorandum, Geomorphic Assessment of Lower Nason Creek from RM 3.3 to 4.6.

ICF International 2012. Salmon and Steelhead Biological Assessment for the Nason Creek N1 Floodplain Reconnection Project.

April 5, 2023

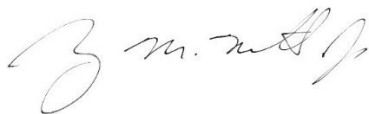
M. Camille Calimlim Touton
Commissioner, Bureau of Reclamation
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Dear Commissioner Touton:

I am writing to express Washington State Department of Transportation's (WSDOT) support for the Yakama Nation Fisheries FY23 WaterSMART grant application to the Bureau of Reclamation Aquatic Ecosystem Restoration Program for Task A: Study and Design funding for the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project.

WSDOT manages State Route 207 for the State of Washington and is currently contributing design and construction funding towards this project to the Yakama Nation through a Cooperative Agreement. WSDOT supports this project's objective to remove substantial known artificial impediments to natural stream processes caused by the current alignment of SR 207 in the Nason Creek floodplain and to remediate multiple Chronic Environmental Deficiency (CED) sites in a manner that will have habitat benefits for Endangered Species Act listed anadromous fish species in Nason Creek. Yakama Nation Fisheries has been diligent in pursuing and analyzing a large suite of potential restoration alternatives needed to address multiple CED sites caused by SR 207 along Nason Creek. The Yakama Nation Fisheries Upper Columbia Habitat Restoration Project, which is managing this project, has conducted extensive river and stream restoration in the Upper Columbia Basin, including a previous partnership with WSDOT for habitat restoration on Skinny Creek.

Given the Yakama Nation's extensive resources and expertise in salmon habitat restoration, and our previous working relationship with the Yakama Nation, WSDOT supports the Yakama Nation's grant application for the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project.



Roger Millar, PE, FASCE, FAICP

Secretary of Transportation

File Code: 1500
Date: May 19, 2023

Chris Butler
Habitat Fisheries Biologist II
Yakama Nation Fisheries
2 Johnson Lane
Winthrop, WA 98862

Dear Mr. Butler,

The Okanogan-Wenatchee National Forest and the Yakama Nation Fisheries have had a long history of working collaboratively to improve watershed conditions throughout the Wenatchee Valley. Over the last few years, the OWNF and YNF have collaborated on numerous projects to improve habitat conditions within the Nason Creek watershed. Removing or relocating human made infrastructure that lies within the historic floodplain of Nason Creek would greatly improve watershed health and salmonid habitat within the watershed.

The OWNF is supportive of the Yakama Nation Fisheries FY23 WaterSMART grant application to the Bureau of Reclamation Aquatic Ecosystem Restoration Program for Task A: Study and Design funding for the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project. OWNF staff have been involved in previous proposals and analysis of proposals to relocate portions of HWY 207 and are supportive of moving forward with the current Nason Creek RM 3.3. to 4.6 Supplemental Alternative Analysis with the goal of developing projects that would benefit habitat for ESA-listed species while reducing ongoing maintenance and long-term risk to WSDOT Chronic Environmental Deficiency sites.

OWNF is the federal land management agency for the components of the Nason Creek Floodplain (DOT – N1) RM 3.2 to 4.6 Stream Restoration Project immediately surrounding the WSDOT Highway 207 road easement; however continued coordination amongst all our cooperators including Chelan County Natural Resources Department and WSDOT will be essential to the successful implementation of any projects developed through this effort.

We look forward to working collaboratively with the Yakama Nation and Yakama Nation Fisheries to continue to improve the health of our watershed and Forest.

Sincerely,

Erica Taecker, District Ranger
Wenatchee River Ranger District



Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan, 2007 –
Nason Creek Assessment Unit

- *Re-establish connectivity throughout the assessment unit by removing, replacing, or fixing artificial barriers (culverts).*
- *Increase habitat diversity and natural channel stability by increasing in-channel large wood complexes, restoring riparian habitat, and reconnecting side channels, wetlands, and floodplains to the stream.*
- *Improve road maintenance to reduce fine sediment recruitment to the stream.*
- *Reduce high water temperatures by reconnecting side channels and the floodplain and improving riparian habitat conditions.*

A Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region, 2017 –
Assessment Unit: Nason Creek -
Assessment Unit Description: Nason Creek (RM: 0-17).

Current fish use status: MaSA for spring Chinook and steelhead. Spawning and rearing habitat for spring Chinook salmon, coho salmon, steelhead and bull trout.

Secondary and tertiary sub-watersheds: Coulter, Roaring, Gill, Whitepine, and Kahler creeks.

Factors Affecting Habitat Conditions:

- *The state highway, railroad, and private land development affect large wood recruitment, channel migration, and gravel recruitment.*
- *Lack of marine nutrients (see discussion under Universal Ecological Concerns and Actions).*
- *Brook trout are abundance throughout the watershed.*

Ecological Concerns and (subcategories) in priority order:

1. *Peripheral and Transitional Habitat (Side Channel and Wetland Connections)*
2. *Channel structure and form (Bed and Channel Form)*
3. *Riparian Condition (Riparian Condition)*
4. *Channel structure and form (Instream Structural Complexity)*
5. *Food (Altered Primary Productivity)*
6. *Sediment Conditions (Increased Sediment Quantity)*
7. *Species Interaction (Competition)*

Level of Certainty/Data gaps

- *Reach assessments have been conducted and impediments have been identified.*
- *There is some uncertainty about the most appropriate means to restore floodplain function, given the existing social and logistical constraints.*
- *The cumulative effects of timber harvest, development, and road densities on stream channel function and sediment delivery are not fully known.*

Ecological concerns and habitat action recommendations in priority order:

1. *Peripheral and Transitional Habitat (Side Channel and Wetland Connections)*

Reconnect side channels and off-channel habitat, where appropriate, from Whitepine Creek to the confluence with the Wenatchee River; for additional specific information, see (BOR 2009a; 2009b; 2010a).

2. *Channel structure and form (Bed and Channel Form)*
Increase large wood complexes from Whitepine Creek to the confluence with the Wenatchee River
Remove (or modify) levees, berms, and roads where feasible.
Restore channel structure and form to reduce sediment transport capacity and competency in order to counteract recent incision and confinement where it unnaturally occurs (i.e.: adjacent road and rail corridors).
3. *Riparian Condition (Riparian Condition)*
Focus riparian plantings in floodplain areas, residential developments, and side-channel reconnections from Whitepine Creek to the confluence with Nason Creek.
4. *Channel structure and form (Instream Structural Complexity)*
Restore instream habitat diversity by enhancing large wood recruitment, retention, and complexity.
5. *Food (Altered Primary Productivity)*
See discussion under Universal Ecological Concerns and Actions.
6. *Sediment Conditions (Increased Sediment Quantity)*
USFS road maintenance and actions
Decommission roads that are affecting sediment deliver to stream
7. *Species Interaction (Competition)*

Nason Creek Tributary Assessment, Bureau of Reclamation 2008 - *Nason Creek is located near the city of Leavenworth in Chelan County, Washington (Figure 1). It is approximately 27 miles in length, drains nearly 8,000 square miles, and is the first tributary to the Wenatchee River below Lake Wenatchee (about 0.6 mile below outlet at Wenatchee river mile 53.6). Elevations range from 1880 feet at the confluence with the Wenatchee to 4240 feet at the headwaters that originate in the eastern Cascades Mountain range. Just over 80 percent of the vegetation in the subwatershed consists of various fir and hemlock species (USFS 1996).*

Much of the land ownership in the Nason Creek subwatershed is federally owned, of which 51 percent is non-designated recreational forest and 21 percent is part of the Alpine Lakes Wilderness Area (see map 2 in atlas). Privately-owned land makes up another 22 percent (14,000 of 69,000 acres total) of the subwatershed and includes a mixture of uses including rural home development, a golf course, small businesses, and corporate timber lands. The lower 15 miles, along with Kahler and Coulter Creek subdrainages, are dominated by privately-owned land (USFS 1996)

Anthropogenic land use activities in the riparian area include beaver trapping in the early to mid-800s, construction and maintenance for U.S. Highway 2 (1,250,000 vehicles a year), private homes, campgrounds, recreation, power and transmission line maintenance, and railroad activities (Appendix B – Historical Timeline) (USFS 1996). The railroad was completed in 1892. U.S. Highway 2, known as Stevens Pass, was present in the early 1900s and improved and relocated closer to the river in 1960. Highway 207, located downstream of the assessment area between RM 4 to RM 0, was also improved and relocated closer to the river in 1943.

The power lines were present on 1930s maps but their initial construction date is unknown. Native Americans occupied the valley prior to the 1890s, and American pioneer settlements began with the railroad in the 1890s and increased thereafter. Housing and infrastructure is fairly spread out in the Nason subwatershed, but urban areas are present at the town of Merritt located at RM 12, Coles Corner at RM 4.5, a downhill ski area at the pass (Figure 2), and a Nordic center in the Mill Creek subdrainage. As of 1996, approximately 125 homes, businesses, and other structures were present within the Nason Creek subwatershed (USFS 1996). Within the Nason Creek subwatershed, substantial changes to channel processes and resulting habitat have occurred since the 1800s (USFS 1996; Andonaegui 2001). As a result of both in- and out-of-subwatershed impacts, populations of several important fish species are now at risk and some species have been listed under the Endangered Species Act (ESA). Protection of existing aquatic habitat and restoration or improvement of altered habitat is generally an accepted method that benefits important fish species (UCSRB 2007).

In order to make good decisions about where and how to implement aquatic habitat restoration projects, a strong understanding of river processes is necessary. This science based tributary assessment provides decision makers with preliminary project implementation opportunities that will be elaborated on in more detail at the reach assessment scale.

Lower Nason Assessment of Geomorphic and Ecologic Indicators Nason Creek, Wenatchee Subbasin, Bureau of Reclamation 2011 - Nason Creek is a tributary to the Wenatchee River in the State of Washington. There are three ESA-listed fish species (UCSRB 2007) that utilize the Wenatchee River subbasin as part of their life stages before returning to the Columbia River and to the Pacific Ocean. The statuses of these listed species, based on biological indicators, were as follows: (1) all biological indicators for spring Chinook salmon are currently in unacceptable condition; (2) biological indicators for steelhead are in unacceptable condition for life history, diversity and isolation, and persistence and genetic integrity indicators; and (3) the subpopulation size biological indicator for bull trout is in unacceptable condition (USFS 1998b; 2006a). At the reach scale, this report documented physical features and analyzed riverine processes that may affect the overall health of the system. Anthropogenic disturbances to channel floodplain interactions through the construction of roads with elevated road grades have disconnected about 29 percent (132.7 acres) of historic channel paths and floodplain area. The channel was re-routed in several locations for road construction and has resulted in channel shortening, increased channel gradient, and decreased channel sinuosity. Impacts on physical processes were (1) an increase in streampower and sediment transport capacity, which may have resulted in a reduction of sediment and wood retention that would have contributed to formation of diverse habitat types (i.e. pool-run-riffle sequences); and (2) isolation of historic channel paths and floodplain areas that are no longer hydraulically connected to the stream and no longer contribute as much to the transfer of energy (i.e. food web), riparian vegetation health and maintenance, and ecological connectivity.

Nason Creek, RM 3.4-4.6 Floodplain Enhancement, Interfluve Inc. 2019 - *The valley bottom within the project area is bisected by Highway 207, which was constructed circa 1942. This significant reduction in the river migration corridor, and associated reduction in stream length, appears to have disrupted equilibrium, putting Nason Creek in a relatively imbalanced state. Nason Creek has repeatedly damaged the highway during flood events.*

Nason Creek Watershed Analysis, Lake Wenatchee Ranger District Wenatchee National Forest 1996 - *This reach has been largely disturbed by highways (US Hwy 2, SR 207), powerlines, and railroad construction. This has resulted in long channelized pools and glides where the highway and railroad cut the creek off from oxbows and wetlands.*

Reclamation Managing Water in the West Kahler Reach Assessment, Nason Creek Chelan County, Washington 2009 - *Ecosystem processes in the Kahler reach are in a degraded state as a result of human-constructed constraints. The multiple functions associated with the three regimes have been impacted by the dissection of the floodplain by U.S. Highway 2, Highway 207, the hardening of the banks with riprap, and general development within the reach. These features have reduced the overall width of the available floodplain and length of the stream channel. Protection and rehabilitation strategies are recommended to prevent further degradation of the stream ecosystem.*

Where restoration is the ultimate aim in many instances, it is realized that a more measured approach is sometimes necessary due to multiple human constraints, including the U.S. Highway 2 and Highway 207. Rehabilitation provides an approach that is consistent with restoration objectives to return critical stream ecosystem function to the best possible condition. In addition, rehabilitation is incremental and iterative in nature to accommodate the notion that complete restoration may not be possible due to anthropogenic structures and/or disturbance regimes. Key rehabilitation strategies include a combination of floodplain reconnection and riparian rehabilitation for promoting a return of natural ecosystem processes. Restoration strategies identified by the Upper Columbia Salmon Recovery Board (UCSRB), consisting of both potential protection and rehabilitation actions, are recommended to prevent further degradation of the stream ecosystem (UCSRB 2007).

Chelan County Natural Resources Department 2012 - *The analysis conducted for this feasibility study predicts that the no action alternative will likely result in a 3,000-foot-long straightened stream channel locked against the SR 207 highway prism. Thus, a reach scale solution needs to be developed so that each individual future road maintenance action is not implemented separately resulting in further degradation to fish habitat in Nason Creek.*

Cardno Technical Memo 2012 - *SR 207 crosses portions of the floodplain between RM 3.5 and 4.6 and impacts geomorphic and ecologic processes in the stream corridor. The 1940's road construction project relocated the stream channel out of the historic alignment between RM 3.5 and 4.0 to a new alignment which parallels the west side of the roadway (Figure 4). The active floodplain trended easterly across the valley near RM 4.0 prior to the forced relocation. Construction of SR 207 across this section essentially dammed the historic stream corridor which was confined between the east valley margin and an alluvial terrace at RM 3.9. The road stays on the terrace surface until it reaches RM 3.6 and again crosses the historic floodplain. The new channel created as part of the 1940's road construction project excavated material from the terrace surface between RM 3.6 and 4.0 (Figure 2). Note that the terrace on the west side of the valley naturally constrained the stream's active floodplain width (600 feet) to less than half of the valley bottom width (1600 feet) in this area and that the road is positioned on the terrace surface between RM 3.6 and 3.9 (Figure 5).*

Salmon and Steelhead Biological Assessment for the Nason Creek N1 Floodplain Reconnection Project, 2012 - *Not surprisingly, the EDT analysis found that summer steelhead and spring Chinook performance (diversity, productivity, and abundance) improved with the realignment of SR 207 and the restoration of Nason Creek floodplain. The analysis included the major effects of the road realignment on environmental conditions relative to salmonids. However, it is also possible minor additional effects may be reasonable such as benefits to the reach immediately downstream of the project area (e.g., it may be reasonable to assume more wood will recruit to that reach with road realignment).*