



King County **INSTREAM PROJECT CHECKLIST**

For Construction and Maintenance of Flood and Erosion Protection Facilities and Habitat Restoration Projects that may include large wood elements

Project Name McElhoe Pearson Restoration Project 2012 Project Manager Fauna Nopp
River/River Mile/Bank Snoqualmie/RM 22.5/Right Bank Date 4/10/12

I. Project Background and Preliminary Design (30-40 Percent) Information

(Provide general information at a conceptual level)

- 1. Describe the goals and objectives of the project and its relative importance to the success of DNRP program goals and mandates. (Note: If the project is comprised of emergency work, then fill out and file this form within 30 days of completion of emergency work.)**

The McElhoe Pearson Restoration Project is intended to create important off-channel habitat through enhancement of an existing wetland, breaching of the McElhoe Pearson Levee, and construction of a backwater channel to improve the connection between the wetland and the river. These actions will provide critical rearing and refuge habitat that will support numerous salmonid species, including threatened Chinook salmon. These benefits occur within the reach of highest priority for Chinook recovery in the Snohomish River Basin Salmon Conservation Plan, and leverage considerable investments in habitat at other sites within the reach including the Chinook Bend, Lower Tolt, and Camp Gilead floodplain restoration projects that were implemented over the last several years.

- 2. Describe the existing (and historic, if relevant) site and reach conditions, including structural features, channel form, and the presence of naturally-deposited large wood.**

The project site is located east of the river in an area formerly occupied by the channel. It was separated from the river by the construction of the McElhoe Pearson levee in 1961. Since that time, the area landward of the levee has developed into a scrub shrub wetland, and the straightened and dredged river channel has gradually begun to migrate and aggrade. A significant point bar has formed along the downstream portion of the levee (where the proposed levee breach is located). This feature is dissected by a series of small floodplain channels that coalesce into a persistent low flow backwater habitat area that rejoins the channel at the downstream end of the project site. The point bar supports up to twenty inch DBH cottonwood trees, with larger trees growing on and behind the levee. Very little large wood is trapped on the site due to the smooth, rock armored face of the levee and the shadowing effect of the levee geometry on the forested bar downstream.

- 3. Describe what is known about adjacent land uses and the type, frequency, and seasonality of recreational uses in the project area. Are there nearby trail corridors, schools or parks? What is the source(s) of your information?**

Based on review of aerial photography and zoning maps, the project site is located downstream of the town of Carnation in an area dominated by agriculture. Single family residential development is concentrated within the town of Carnation with limited residential development, primarily associated with farms, in the surrounding area. Camp Gilead, a relatively large children's camp, operates immediately downstream of the project area on the opposite bank of the river. Discussions with the camp management for the Camp Gilead restoration project indicate that campers use the reach immediately below the project site for casual floating activities during the summer months. The site includes a small parking area and is crisscrossed with trails indicating relatively frequent use by recreational fishermen, birders or other informal recreational users. Existing improved boater access is located upstream near Tolt MacDonald Park and informal access is available downstream at Carnation Farm Road. Anecdotal information and direct observations suggest moderate boating and swimming use by people with wide ranging skill levels.

- 4. Describe the conceptual design of large wood elements of the project, including, if known at this stage in the design, the amount, size, location, orientation, elevation, anchoring techniques, and type of interaction with the river and stream at a range of flows.**

Three in-water habitat structures are proposed. They each consist of three logs with rootwads, three vertical piles and approximately ten cubic yards of smaller woody debris. Structures will be embedded in the bed and bank for stability and will employ boulders for additional ballast. The structures will rest on the bed and extend a maximum of ten feet into the summer low flow channel. At low flow, the structures will be in a backwatered area with no significant flow velocity. Above approximately 15,000 CFS (at or near ordinary high water), flow enters the upstream end of the floodplain channels and the structures will begin to interact with flowing water.

An additional 12 pieces of large wood and related branches and other woody debris will be placed among the trees on the point bar outside the ordinary high water mark, but adjacent to the main channel. These pieces will be stabilized by existing trees and will only interact with flows that exceed approximately 15,000 CFS.

Some remaining wood generated during construction will be placed within the off-channel wetland area. It will be placed in low energy areas and be racked on existing vegetation for stability.

5. **What is the intended function of the placed wood? What role does the placed wood have in meeting the project's goals and objectives? Is the project intended to recruit or trap additional woody debris that may be floating in the river?**

The proposed habitat structures are intended to provide cover and structure in an important salmonid rearing and refuge area. They will restore some of the functions lost when the river was dredged and the banks were armored, and they are also necessary to provide compensatory mitigation for off-site impacts related to a Washington State Department of Transportation (WSDOT) infrastructure project. WSDOT's project removed several large pieces of wood from Tokul Creek so the wood incorporated into McElhoe is compensating for those impacts. The location and design of the proposed structures make it very unlikely that they will recruit or trap additional woody debris.

Wood placed on the point bar is intended to provide a local increase in hydraulic roughness on the point bar during moderate to high flows (above 15000 CFS). The increased roughness is expected to help concentrate flows in the newly enhanced side channel area, and help maintain persistent surface water connections to the off-channel wetland.

Wood placed in the wetland will provide cover and structure as part of the larger wetland and off-channel fish habitat enhancement plan.

6. **Describe how public safety considerations have been incorporated into the project design [see section 1.B.2 of Ordinance 16581] and include a description of how the six (6) key steps provided in Public Rule LUD 12-1, Appendix A. (Rule) Section V.2.A. i)-vi) have been addressed.**

Given the intended function of the wood in this project, the design does not require high risk placements. Specifically, all wood that will be placed within the ordinary high water mark of the river is located in backwatered areas located off the main channel. No wood will be exposed to any significant water velocity until flows exceed 15,000 CFS, at which point recreational use is limited. No significant wood is expected to be recruited to the site as a result of project actions, and no geomorphic changes are expected in the main river channel. Geomorphic changes in the side channel and backwater areas are expected to be relatively minor and are not anticipated to recruit significant trees or impact recreational use. Finally, all placed wood greater than 6 inches in diameter and 20 feet in length will be anchored by ballast, pilings or live trees to minimize the potential for on-site wood to be mobilized downstream.

7. **What is the anticipated schedule for completing project milestones (30-40% design, final design, major construction/earthmoving) and for soliciting public input)?**

The project is moving toward construction in August 2012. Thirty percent plans were recently completed, and will be followed by 60 percent plans in May and final plans in July. Public input will continue to be solicited through 60 percent design and through the State Environmental Policy Act determination process.

Project Manager

Supervising Engineer, Project Supervisor or Unit Manager

Date

Date

II. Pre-Construction Information (70% or 100% design with permits) *These questions relate to the designed and permitted project. Information should include input resulting from permit review process, SEPA, boater safety meetings and any other*

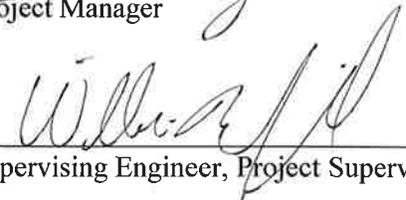
8. Have any answers provided in Section I at the Preliminary Design Phase changed in the interim? If so, provide the new answers and the rationale for the change. **The project design is 100% complete and has received all permits for the planned work. None of the answers provided above regarding setting or design approach have changed.**
9. The Rule requires project review and approval by a Licensed Professional Civil Engineer. The Engineer will ensure appropriate application of engineering studies and design standards. Describe the design review and approval process for the project, including review by the licensed professional engineer, as well as reviews by other licensed technical staff such as Licensed Geologist and Licensed Engineering Geologist. Specify the Engineer of Record for the design and any other Licensed Professionals who have sealed their portion of the design plans. Was the review and approval completed? **The project team includes two Licensed Professional Engineers and a Licensed Engineering Geologist each with many years of experience in their respective fields. The team has also had input from other professional engineers in the Water and Land Resources Division regarding analyses, elements of risk and design. As the Engineer of Record for the project, Will Mansfield reviewed engineering products at the 30, 60, 90 and 100% design milestones. He also played a large role in the identification, assessment and analyses of risks associated with the project and contributed to and reviewed scopes for engineering analyses and the resulting conclusions and products. At this time, the final plans have been reviewed and stamped by Mr. Mansfield in his role as Engineer of Record.**
10. The Rule requires project review and approval by a King County Professional Ecologist (e.g., person with an advanced degree in aquatic and/or biological sciences from an accredited university or equivalent level of experience) if ecological benefits are an intended project objective. The Ecologist will evaluate the consistency of the design with project goals, existing environmental policies and regulations, and expected or known permit conditions. Specify the Reviewing Ecologist for the project. Was this review and approval completed? Please describe steps undertaken by the Ecologist. **Ecological benefits are one of the key project goals and therefore ecological input has been included as part of the design from the beginning. The Professional Ecologist for the project is Dan Eastman who is a Fisheries biologist with a master's degree in fisheries from the University of Washington and fifteen years of restoration design experience. As a core design team member, he has played a significant role in all phases of design and has helped develop a post project monitoring plan to track physical and ecological outcomes. Over the course of the design process, Mr. Eastman has evaluated the design for consistency with project goals, regulatory requirements and anticipated permit conditions.**

Project reviews occurred throughout design, but more formal input was provided at the 30, 60, 90 and 100% design milestones by the Professional Ecologist as well as by the design unit manager who holds an advanced degree and over 20 years experience in the habitat restoration field. The final design has been reviewed and approved by both and determined to be consistent with the project goals and regulatory requirements.

11. What regulatory review or permits are required for the project (e.g. HPA, Clearing and Grading permit, COE permits)? List any conditions or requirements included in the permit approvals relevant to placement of large wood in the project. **The project has obtained permits from local, state and federal agencies with jurisdiction over work in and around the Snoqualmie River. This includes, but is not limited to the following permits: Section 404 permit (USACE), Hydraulic Project Approval (WDFW), Clearing and Grading Permit and Shoreline Exemption (King County). All of the permits approved the use of wood as shown on the plans, but none included conditions that required additional wood be installed.**
12. What specific actions or project elements were employed to consider public safety in the final, permit-approved design? **Consistent with the 30% checklist response the intended function of the wood in this project does not require high risk placements. Specifically, all wood placed within the ordinary high water mark of the river is located in backwatered areas located off the main channel. No wood will be exposed to any significant water velocity until flows exceed 15,000 CFS, at which point recreational use is limited. No significant wood is expected to be recruited to the site as a result of project actions, and no geomorphic changes are expected in the main river channel. Geomorphic changes in the side channel and backwater areas are expected to be**

relatively minor and are not anticipated to recruit significant trees or impact recreational use. Finally, all placed wood greater than 6 inches in diameter and 20 feet in length will be anchored by ballast, pilings or live trees to minimize the potential for on-site wood to be mobilized downstream.

13. Describe how the Public Outreach requirements in Rule Section V.3. have been addressed.? **In addition to the required SEPA notices, signs and mailings, the project has also sent project specific letters to adjacent property owners, created and maintained a project website, posted updates on the KC Large Wood Installation website and exchanged emails and phone calls with numerous stakeholders. Project representatives have also met onsite with specific stakeholders in an attempt to further understand and address their interests and needs.**
14. Describe the input received from the public and how, if appropriate, the project team has responded to this input. **Received limited questions/comments during the June 27, 2012 large wood meeting. Questions were addressed at the meeting and no design changes resulted from the meetings.**
15. Describe any additional design modifications or mitigating actions that were or will be taken in response to the public comments. **None**
16. Will further educational or informational materials be made available to the public to heighten awareness of the project (e.g., public meeting, press release, informational website, or temporary or permanent signage posted in the vicinity of the project)? If so, explain. **Mailings to adjacent residences containing construction updates are anticipated.**

 Project Manager	<hr/>	9/25/13 Date
 Supervising Engineer, Project Supervisor or Unit Manager	<hr/>	9/25/13 Date

III. Post-Construction Actions or Project Modifications

17. Have any answers provided in Sections I and II at the Preliminary design and Pre-Construction phases changed in the interim? If so, provide the new answers and the rationale for the change.
18. In accordance with the requirements of Rule Section V.4., describe post-construction monitoring and inspection activities planned for the project.
19. If post construction monitoring or inspections result in modifications to the project, please describe the action taken and the rationale (See Rule Section V.4.).

Project Manager

Date

Supervising Engineer, Project Supervisor or Unit Manager

Date