

# INSTREAM PROJECT CHECKLIST

*For Design and Construction of Flood and Erosion Protection Facilities and Habitat Restoration Projects that May Include Large Wood Placement or Natural Wood Recruitment*

**Project Name** Cedar River Trail 5B Repair Project    **Project Manager** Linda Bartolini Venegas

**River/River Mile/Bank:** Cedar River, River Mile 9.8, Left Bank

**Date:** June 16, 2022

Check one or both:

Project includes placement of large wood elements

Project may influence the recruitment, mobility and accumulation of natural large wood.

*Note: If the project is comprised of emergency work, then fill out and file this form within 30 days of completion of emergency work.*

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

*(Provide general information at a conceptual level)*

1. **Describe the overall river management context, strategy and objectives for the river reach. Refer to pertinent plans, policies or documents pertaining to flood hazards, salmon recovery, etc.**

Management approaches in this river reach are informed by several plans and related documents that provide context for flood hazard management and salmon recovery.

- This project is consistent with the alternatives for managing King County’s flood protection facilities in the adopted 2006 King County Flood Hazard Management Plan (updated in 2013).

2. **Describe the goals and objectives of the project and its relative importance to the success of DNRP program goals and mandates. Identify funding source(s) and describe any applicable requirements or constraints.**

The Cedar River Trail 5B (CRT5B) Revetment Repair project will repair up to 60-feet of damage at the CRT5B Revetment at River Mile 9.8, near a natural gas pipeline operated by the Williams Companies. The damage to the revetment occurred during the February 2020 flood event on the Cedar River. The CRT5B Revetment is a flood protection facility which protects the adjacent Cedar River Trail, the buried fiber optic line, and two buried natural gas pipelines. If left unrepaired, the damages could expand, posing increased risk to adjacent infrastructure.

The project is funded by the King County Flood Control District.

3. **Describe the existing (and historic, if relevant) site and reach conditions, including structural features, channel form, and the presence of naturally-deposited large wood. Describe known utilization by salmonids and any important or unique biological or ecological attributes.**

The reach at the repair site of the Cedar River is a single channel, confined reach. Construction of levees and revetments along the majority of its length have contributed to straightening and confinement of the channel, resulting in increased depths and velocities, impacting salmon spawning and rearing habitats, and reduction in overall sediment and wood storage potential. Naturally occurring large wood is occasionally present but rarely persistent.

Chinook, coho and sockeye salmon, rainbow trout/steelhead, and coastal cutthroat trout utilize the Cedar River for spawning and rearing. Chinook salmon and steelhead are protected as threatened species under the Endangered Species Act.

**4. 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?**

Land use in the immediate vicinity of the project site includes undeveloped open space, low density residential and transportation. In the immediate vicinity is the Cedar River Regional Trail and Belmondo's Reach natural area. Both are owned and maintained by King County Parks Department and support active and passive recreation. Water-dependent active recreation includes floating (inner tubing) and fishing.

**5. If the project includes wood placement, 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.**

The repair at right bank does not include any large wood incorporated into the design. The repair will use large rock at the toe and willow stakes and trees planted on the upper bank. There are approximately 11 trees that will be removed to repair the rock revetment.

Most of the trees have trunks that are 4-8 inches in diameter at breast height (DBH) with the exception of a few measuring over 12 inches DBH. These trees will be placed near the edge of river after their removal during construction. The exact location that the wood will be placed will be determined during construction by the Project Ecologist and Project Engineer.

**6. If the project includes wood placement, what is the intended structural, ecological or hydraulic 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 large wood that may be floating in the river?**

The wood placement is intended to serve an ecological function as fish habitat. Ecological functions include:

- Increased complexity of riverine habitat.
- Increase shading and refuge for wildlife and fish. or recruit additional wood accumulations.

**7. Is the project likely to affect the recruitment, mobility or accumulation of natural large wood, e.g., by encouraging wood deposition on or near the site or promoting bank erosion that may cause tree toppling? Describe expected site evolution and its potential effects on natural wood dynamics.**

Current patterns of wood mobility or accumulation are not likely to change as a result of the project. Existing recruitment of small/medium woody debris is evident within this reach upstream and downstream of the project site. Racking of small woody debris after construction is expected at the local project site, which will likely be highly transient. This project will not change the accumulation regime of natural large wood. This project design is intended to stabilize the bank.

**8. Describe how public safety considerations have been incorporated into the preliminary project design. For placed wood, address each of the considerations:**

- a. **Type, frequency, and seasonality of recreational use:** Recreational use in the Cedar River Basin has been monitored in the last decade. The Cedar River Regional Trail is used year-round by walkers, joggers and bikers regularly. The 2011 Cedar River Recreational Study noted that aquatic activities vary seasonally in the Cedar River and include fishing, swimming, floating and boating. Lower recreational use levels were recorded at this site compared to other reaches of the Cedar River in the King County 2013 River Recreation Study.
  - b. **Wood location, positioning, and anchoring techniques:** Wood will not be anchored. It will be placed on the bank just above OHWM, and may recruit to the river during first high flows after construction. The placement location will be determined on site during construction in late summer.
  - c. **Maximizing achievement of project goals and objectives while minimizing potential public safety risks:** The repair project goals do not include wood placement. It is a mitigative measure integral to the environmental permitting process. The wood that will be placed is not expected to change the background wood loading in the system
  - d. **Use of established and recognized engineering, geological, and ecological expertise:** Professional engineers, geologists and ecologists have been involved in design and review of the project. The methods used to design this project are consistent with best professional practices.
9. **Has the project been reviewed and approved by a Licensed Professional Civil Engineer? Please list other licensed technical staff who have reviewed and provided input on the design (e.g., 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. Were all reviews and approvals completed?**

Yes. Valerie Wu (Engineer of Record, Professional Engineer), Jessy Hardy (Professional Engineer) and Mark Ruebel (Professional Engineer) designed the revetment repair and will oversee the wood placement. The project is currently at 30% design. All design reviews and approvals have been completed.

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

Thomas Bannister, Project Ecologist, approved of the revetment repair design and placement of the wood. The project is currently at 30% design. The anticipated project construction date is August 2022.

<i>Linda Bartolini Venegas</i>	6/16/22
Project Manager	Date
Mark Ruebel 2022.06.16	
Supervising Engineer, Project Supervisor or Unit Manager	Date