SEATTLE PUBLIC UTILITIES
SEPA ENVIRONMENTAL CHECKLIST

This SEPA environmental review of Seattle Public Utilities' Cedar River—Upper Royal Arch Habitat Enhancement Project has been conducted in accord with the Washington State Environmental Policy Act (SEPA; Revised Code of Washington 43.21C), State SEPA regulations (Washington Administrative Code [WAC] Chapter 197-11), City of Seattle SEPA ordinance (Seattle Municipal Code [SMC] Chapter 25.05), and King County Code (KCC) 20.44. Preparation of an environmental checklist is not necessarily required given that the proposed action is a Fish Habitat Enhancement Project, meeting criteria found in RCW 77.55.181 and RCW 77.55.480; these projects can be exempt from further review under SEPA as per 43.21C.0382. Seattle Public Utilities has elected to prepare this SEPA checklist given the community-centered benefits of disclosing proposed project and its potential impacts and benefits.

A. BACKGROUND

1. Name of proposed project, if applicable:

Cedar River – Upper Royal Arch Habitat Enhancement Project

2. Name of applicant:

Seattle Public Utilities (SPU)

3. Address and phone number of applicant and contact person:

Seattle Public Utilities
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4. Date checklist prepared:

August 22, 2022

5. Agency requesting checklist:

SPU

6. Proposed timing or schedule (including phasing, if applicable):

SPU proposes to construct the project in mid-2023, following receipt of all required permits and approvals. Project construction is expected to conclude in late-2023, but may require additional time based on the availability of timely construction funding sources and potential delays associated with

specific project elements, such as the potential road relocation. Construction would require an estimated 40 to 60 working days.

The agency-approved in-water work window for the project site is July 1 to August 31, and primary in-water work activities would occur during that time. Because project construction occurs during low flow months, SPU is requesting agency approval to work below the ordinary high water mark (OHWM)–but above the water–outside of the prescriptive in-water work window.

Monitoring and maintenance of the completed project would include managing invasive species and monitoring events consistent with anticipated requirements in project permits and other authorizations. In addition, SPU anticipates the potential need to conduct one sediment removal event. For purposes of this environmental review, the potential sediment management event may occur within the next 10 to 50 years, and general maintenance and monitoring events are estimated to occur four times per year for 3 years.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

SPU has been acquiring properties within the Royal Arch Reach of the Cedar River to conduct a floodplain and habitat restoration project and may continue additional property acquisition if other opportunities become available. This project has been designed to be compatible with these potential future additional floodplain and habitat restoration sites.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- Inter-Fluve. 2021 (June). *Alternatives Analysis, Cedar River – Upper Royal Arch Habitat Restoration Project*
- Inter-Fluve. 2021 (July). *Existing Conditions Report, Cedar River Upper Royal Arch Project*
- Floyd|Snider. 2022 (January). *Cedar River Royal Arch Reach Project Water Quality Monitoring and Protection Plan*
- U.S. Fish and Wildlife Service, National Marine Fisheries Service, SPU, and Foster Wheeler Environmental and Subconsultants. 1999 (May). *Environmental Assessment/Final Environmental Impact Statement for the Proposed Issuance of a Permit to Allow Incidental Take of Threatened and Endangered Species – Cedar River Watershed Draft Habitat Conservation Plan*
- Phase 1 Environmental Site Assessments
    - Aspect Consulting. 2017 (April). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 22305 & 22317 – SE 214th Street*
    - Aspect Consulting. 2017 (May). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 21323 221st Avenue SE*
    - Aspect Consulting. 2016 (September). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 21317 & 21309 - 221st Avenue SE*
    - Aspect Consulting. 2017 (July). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 21329 – 221st Avenue SE*
    - Aspect Consulting. 2017 (May). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 22111–SE 214th Street*

  - Aspect Consulting. 2017 (June). *Phase I Environmental Site Assessment, Cedar River Land Acquisitions 22210 – SE 214th Street*
- Inter-Fluve. 2021 (July). *Cedar River Upper Royal Arch Project Existing Conditions Report: Attachment 7 Pebble Count Data*

Materials Not Available for Public Review:

- Beckner, Schultze, and Little. 2017 (December). *Cultural Resources Inventory for Seattle Public Utility's Newitt, Haworth, and Feuerborn Property Acquisitions and Restoration Project, City of Maple Valley, King County, Washington*
- Little and Beckner. 2017 (August). *Cultural Resources Inventory for Seattle Public Utility's Hamasaki and Murray Property Acquisitions and Restoration Project, City of Maple Valley, King County, Washington*
- Durkin and McPeak. 2020 (September). *Draft—Cultural Resources Assessment Report for Seattle Public Utility's Royal Arch Restoration Project, City of Maple Valley, King County, Washington*
- Historical Research Associates, Inc. 2020 (September). *Final – Cultural Resources Assessment Report for SPU's Royal Arch Restoration Project, City of Maple Valley, King County, Washington*

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no pending governmental approvals of other proposals directly affecting the project site.

10. List any government approvals or permits that will be needed for your proposal, if known.

All or some of the following permits or approvals would be required before project construction can commence:

U.S. Army Corps of Engineers

- Clean Water Act Section 404 – Nationwide Permit 27, Aquatic Habitat Restoration, Enhancement, and Establishment Activities

U.S. Fish and Wildlife Services (USFWS) and National Marine Fisheries Service (NMFS)

- Endangered Species Act (ESA) Section 7 – Consultation and Biological Opinion. SPU intends to consult using the NMFS programmatic consultation for fish passage and restoration actions (FPRP III) and the USFWS programmatic consultation for fish passage and habitat enhancement restoration (FWS No. 13410-2008-FWS # F-0209).

Washington State Department of Ecology (Ecology)

- Clean Water Act Section 401 Water Quality Certification (WQC) – certification provided under Nationwide Permit 27, unless Ecology determines an individual WQC is required.

Washington Department of Natural Resources (DNR)

- Aquatic Use Authorization for DNR-managed aquatic lands

Washington Department of Fish and Wildlife (WDFW)

- Hydraulic Project Approval for Fish Habitat Enhancement Project (FHEP)

King County

- Construction Permit
- Clearing and Grading (for off-site soil placement only)
- Floodplain Development Permit
- Flood Hazard Certification

Authorization for work in the Shoreline Master Program (SMP) district and within critical areas and their buffers is not required as this project is a FHEP, consistent with RCW 77.55.181(4) and verified by WDFW.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

This project is a habitat enhancement project that includes the following actions:

Potential Road and Utility Relocations

This includes the potential removal / relocation of 221st Ave SE, an existing neighborhood road providing continued access to a home downstream of the project area. SPU has considered vacating 221st Ave SE and a portion of SE 214th St within SPU-owned properties and, if the road is vacated, a new access road for the adjoining property to the north (parcel 2752200050) would be constructed. This new access road would extend from the existing SE 214th St and lie along the eastern edge of SPU property (parcel 2752200066) to connect to the private parcel to the north (parcel 2752200050). This action is pending continued coordination and approvals from the landowner and King County. Removing and relocating the road would allow for the full extent of off-channel work to occur at the downstream portion of the site. Powerlines and other utilities that service adjoining properties would also be relocated.

Removal of Remaining Structures and Bank Armor

Several utilities, structures, and other residential appurtenances would be removed, including three to four wells, two well houses, a recessed concrete vault, and bank protection associated with former homesites. Should the project expand to include other nearby parcels, remnant structures that may exist where project actions would occur may be removed to support full project build out.

Bank protection in the lower portion of the project includes concrete rubble, loose riprap, a rock-filled wire basket gabion, and a multi-level grouted stone wall and steps. Each of these would be removed and the streambank recontoured to tie into existing grades. Resulting slopes would be approximately 3H:1V and would be treated with erosion control fabric and revegetated except where proposed mainstem log jams coincide with the sites.

Off-Channel and Floodplain Enhancements

Habitat and floodplain enhancements include two work areas, one upstream of the gas line crossing and one downstream. At the upstream site, the project would construct a 1,350 linear foot flow-through perennial side channel following the alignment of the existing prominent floodplain depression within the river-right floodplain. The upstream inlet would be situated near the upstream end of the project site. A secondary inlet would be located approximately 350 feet downstream that

connects into the primary side channel. The off-channel network includes an additional 935-foot-long perennial secondary channel, a 320-foot-long connector channel, and a seasonally connected tertiary channel that connects into a 1.3-acre low-lying floodplain complex further into the floodplain. The channel design takes advantage of clearings between trees to reduce the amount of tree removal. The complex includes low lying floodplain areas, inset floodplain benches, alcoves, and microtopography to increase habitat availability and diversity and to support a variety of plant communities. The primary and secondary channels would be wetted perennially, and the tertiary channel and low-lying floodplain areas would be wetted seasonally/intermittently. An existing foot/all-terrain vehicle bridge would be removed, along with an existing culvert at the downstream end. The channel alignment has been designed to avoid earthwork within the Northwest Pipeline Company (parcel 2752200081). Channel excavation would be required to connect the existing depression to the mainstem river with the middle 600 feet requiring little to no grading; this would occur after the upland site work.

The off-channel complex downstream of the gas line would be similar to the upstream design and would include an 850-foot-long perennial side channel that weaves through the existing trees on river-right. The channels would direct flow into a seasonally connected 1-acre low-lying floodplain complex. Portions of the channel would have a relatively shallow depth to allow for seasonal overbank flows. Additional habitat enhancements include seasonally inundated alcoves and microtopography to increase habitat availability and diversity and support a variety of plant communities.

In both complexes, a variety of large wood habitat placements are planned for the off-channel areas. The large wood would support the function of the off-channel habitat as well as provide complex juvenile salmonid rearing cover, support pool scour, and provide high flow refuge habitat. Anchoring of wood would occur through a combination of partial burial, extending boles up high banks, and bracing against existing trees and vertically driven logs that would also serve as snags to support avian species. Little-to-no mechanical anchoring is expected to be needed for smaller wood and for wood placements in the low-lying floodplain area farthest from the main channel.

Work to create side channel habitat and additional flood storage capacity would require excavating up to approximately 50,000 cubic yards (CY) of material. SPU is evaluating opportunities to divert this spoil from local landfills. SPU is engaged with neighboring landowners to identify whether there is an opportunity to place this spoil across their properties, following written agreement. Spoil placement would be designed to avoid changes in existing drainage patterns and areas would be reseeded after grading. Spoil placement may occur on properties adjacent to SE 214th St or on properties adjacent to Renton Maple Valley Road.

No gravel or other imported substrate is proposed.

<u>Mainstem Large Wood Placements</u>
Large woody material would be placed along the right-bank. At each of the side channel inlets, bar apex log jams would be placed at the apex of the flow split to encourage flow into the side channel and to maintain scour depths and sediment transport through the side channel inlet areas. This includes two apex log jams in the upstream portion of the site and one apex log jam at the downstream portion. Other large wood placements would extend along the bank through the

project area, except within and nearby the pipeline crossing and between the two upstream apex jams to avoid deflecting flow away from the second inlet.

The apex jams would generally consist of layered installations of 14 to 20 logs. They would incorporate whole trees salvaged during on-site clearing of access routes and side channel construction corridors. Cleared smaller woody material would be reused as slash material for added complexity in the jams. The logs would be stabilized through a mix of bank burial, backfill with gravel-cobble ballast, and bracing against vertical piles driven into the ground. Where appropriate, bumper logs are incorporated on the upstream face of the structure for river user safety. These include a stack of log boles extending out from the bank and oriented in the downstream direction such that floating objects that come into contact with the structure would most likely be redirected out into the main channel flow, reducing the potential for impingement on the structure.

The other large wood placements along the channel bank would consist of a variety of margin complexity treatments designed to increase margin cover and local pool scour. These would include logs with rootwads placed along the bank and interwoven with whole trees and slash. The wood would be stabilized by bracing against existing riparian trees, extending boles on top of the bank, and bracing against vertically driven piles. These complexity treatments would be positioned close to the channel margin, generally oriented parallel to flow, and would have voids to limit effects on reach-scale hydraulics.

Vegetation Enhancements

Vegetation enhancements include invasive species management and planting of native vegetation throughout the project area. Invasive plants at the site include primarily Himalayan blackberry, English Ivy, reed canary grass, scotch broom, and Japanese knotweed, among others. Invasive species would be removed throughout the site using a combination of machinery being used during construction and hand crews. Revegetation would occur on streambanks, within created low-lying floodplain areas, and throughout the floodplain and disturbed upland areas. The intent is to establish a mosaic of native hydrophytic, riparian, and transitional plant communities throughout the site. Three primary species assemblages have been identified for planting. These include a wetlands mix, a streambank mix, and a floodplain mix. The wetland mix includes wet adapted species that would be placed within and along the fringes of low-lying floodplain areas and floodplain channels. The streambank mix consists of species typically found along streambanks, such as willow, cottonwood, red osier dogwood, and red alder. These species would be planted along mainstem and side channel streambanks and along the sloped boundaries of the constructed low-lying floodplain areas. The floodplain mix would be placed in the other areas within the limits of disturbance, and which are unvegetated. The floodplain mix consists of species adapted to higher and drier ground with less inundation frequency, such as Douglas fir, western red cedar, bigleaf maple, salmonberry, vine maple, and snowberry.

Potential design refinements may occur as the final design is developed for the proposed project. Refinements may yield a slight decrease in the amount of habitat constructed and its benefit; potential changes are described throughout this checklist and are preliminarily represented in Attachment D.

A site map of the project is included as Attachment B, and a site plan is included as Attachment C.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Project activities span seven SPU-owned parcels along SE 214th St in unincorporated King County in Maple Valley, WA 98038, between river miles (RM) 14.6 and 15 of the Cedar River (parcels 275220-0066, 275220-0061, 275220-0062, 275220-0060, 275220-0063, 275220-0070, and 275220-0075). The project would occur within the Royal Arch Reach extent of the Cedar River, which flows from the Highway 169 overpass east of Highway 18 to the Highway 169 overpass north of the Royal Arch Park in Maple Valley. The proposal takes place in Section 9, Township 22 North, Range 6 East.

The project area could extend onto neighboring private parcels for soil placement and, if needed, could extend onto the upstream land owned by the Washington State Department of Transportation to optimize design of side channel inlets.

A vicinity map of the project area is included as Attachment A.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

The site slopes west toward the Cedar River at approximately 1.5%. The steepest slope is approximately 16%, at the shoreline of the Cedar River. No steep slopes (that is, more than 40%) exist on the site.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Streambed sediment was studied in August 2020 as part of a pebble count. The study found sediment is dominated by cobble and coarse gravel. Boulders, fine gravel, and sand were also present. Deposits in upland portions consist mostly of Holocene-age alluvium.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There is a history of unstable soils in the immediate vicinity. A bluff abuts the Cedar River channel on river-left beginning at approximately RM 14.8 and extending downstream to approximately RM 14. This bluff is comprised of highly erodible glacial deposits and is subject to land slope failures.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Fill and excavation quantities and affected areas are provided in Part B.3.a.3 below.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Grading would occur across the project site to achieve the intended habitat enhancement and floodplain reconnection. These activities would temporarily expose erodible soil. However, the boundaries of this work would be flagged in the field and contained within the project area using appropriate best management practices (BMPs) to minimize the potential for sediment-laden water to leave the project site. Temporarily exposed or stockpiled soils would be stabilized to minimize potential for erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 1% of the project site is covered with impervious surfaces. The impervious coverage area of the site would remain the same after project construction, as the impervious area is limited to the road that would be potentially relocated to provide continued access to the northern adjoining property. This relocated road would replace the northern property's (parcel 2752200050) current access via 221st Ave SE, which may be vacated and demolished as an element of this proposal. Removal of existing road infrastructure and impervious remnants of the site's previous residential use would result in a net decrease of impervious coverage at the project site.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Appropriate erosion and sediment control BMPs would be used to prevent erosion. Methods to contain and control movement of eroded soils are described in Part B.3.d below.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction activities have the potential to create temporary fugitive dust from demolition of remnant hardscape within the floodplain and earth-moving activities. Mobile and stationary equipment would be used to construct the proposed project, generating usual exhaust emissions (that is, carbon monoxide, sulfur, and particulates) due to the combustion of gasoline

and diesel fuels. These dust and exhaust emissions are expected to be minimal, localized, and temporary.

This project would generate greenhouse gas (GHG) emissions in three ways: using concrete/asphalt, and other materials (embodied); conducting construction; and maintaining the completed project. Total GHG emissions for the project are estimated to be 610 metric tons of carbon dioxide emission ($MTCO_2e$). The GHG emission calculations are provided in Attachment E and summarized in Table 1. One metric ton is equal to 2,204.6 pounds. Embodied GHG emissions in other materials (such as aggregate, landscape materials, and so forth) have not been estimated as part of this SEPA environmental review due to the difficulty and inaccuracy of calculating those estimates, and because the relative GHG emissions from the project are low and cannot reasonably be assumed to result in a significant environmental impact. Because a Contractor has not been identified for the project at the time this checklist was prepared, the estimates provided here are based on assumed daily vehicle operation times for the entire estimated project duration; actual times may be less or more.

Activity/Emission Type	GHG Emissions (pounds of CO_2e)[1]	GHS Emissions (metric tons of CO_2e)[1]
Buildings	0	0
Paving	760,587	345
Construction Activities (Diesel)	466,940.2	212
Construction Activities (Gasoline)	106,628.4	48.3
Long-Term Operation/ Maintenance (Diesel)	4,885.2	2
Long-Term Operation/Maintenance (Gasoline)	4,665.6	2
Total GHG Emissions	1,343,706.4	609.3

[1] Note: 1 metric ton = 2,204.6 pounds of CO_2e. 1,000 pounds = 0.45 metric tons of CO_2e.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No off-site sources of emissions or odor would affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Construction emissions would be minimized by requiring proper construction equipment maintenance and by minimizing vehicle and equipment idling. Dust control BMPs would be implemented, as necessary, to control fugitive dust during construction activities. Otherwise, the emissions associated with project activities are temporary and would not significantly affect air quality.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The project area includes the shoreline of the Cedar River between RMs 14.6 and 15.0 and adjacent upland parcels. The Cedar River is a major tributary to Lake Washington. There is also one wetland ("Wetland A," 0.07 acres, Riverine, Rating III). Wetland A is in an existing remnant side-channel that is only hydraulically connected to the Cedar River during high flow events. The side-channel is characterized by a defined bed and banks, alluvial bed material, a lack of vegetation, and permanent inundation from hydrological sources of rain, hillslope runoff, and hyporheic flow from the Cedar River.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

As described in Part A.11 above, the entire project is in and along the Cedar River and within 200 feet of the OHWM.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Fill and excavation activity in wetlands and in the Cedar River are summarized in Tables 2 and 3, respectively.

Wetland Fill: 25 CY of native streambank and floodplain material would be placed in Wetland A as part of the side channel enhancement work. This material would be placed to stabilize the slopes of the restored side channel network, creating a variety of wetland complex characteristics supportive of diverse native plant communities and an increase in habitat availability. Placement of native fill in the wetland would be limited and aims only to convert existing site conditions to a more stable, functional, and productive wetland system.

Wetland Excavation: 175 CY of native streambank and floodplain material would be excavated from Wetland A to develop the intended side channel network. Some of the excavated material may be reused on-site during construction.

Table 2. Fill and excavation activity in wetlands.

Activity	Water body	Water body Type and Rating	Impact Area
Excavation (Native streambank and floodplain material)	Wetland A	Wetland (Riverine). Rating Category III	175 CY 2,200 square feet (SF; 0.05 acres [AC])
Fill (Native streambank and floodplain material)	Wetland A	Wetland (Riverine). Rating Category III	25 CY 300 SF (0.007 AC)

In Cedar River environments, the project would:

- Remove a 24-inch-diameter culvert and approximately 20 CY of associated fill materials at the downstream end of the side channel swale.
- Remove approximately 150 CY of non-native bank armoring.
- Place approximately 150 CY of fill to replace non-native armoring to be removed.
- Excavate approximately 500 CY of native floodplain material and alluvium to create proposed side channels.
- Place approximately 500 CY of native floodplain and alluvium for placement of large wood structures. This material would be used to backfill the areas from where it was originally removed to provide ballast to large wood structures.
- Place approximately 25 CY of native fill in the river to shape side channel banks.
- Construct temporary cofferdams using bulk sacks filled with gravel, sheetpile, or other materials approved by SPU. Cofferdams would isolate work areas from the Cedar River. Cofferdams would be placed out from the right bank of the Cedar River in the vicinity of large wood placements and side channel inlets and outlets. Up to 500 CY of material would be used and subsequently removed after construction.
- Excavate no more than 50 CY of native fill in a sediment management event, which may potentially occur approximately 10 to 50 years after the proposed project's completion, if needed to maintain side channel network.

Table 3. Fill and excavation activity in the Cedar River.

Activity	Impact location	Duration of impact	Amount of material	Area of water body affected
Fill for cofferdam placement	Within river at side channel inlets and apex jam locations	Temporary; removed following construction	500 CY	3,000 SF
Excavation for side channels	Within river at side channel connection points to the mainstem and along the existing side channel feature	Permanent	500 CY	7,000 SF
Excavation for large wood placement	Within river at three mainstem log jam locations	Temporary; backfilled immediately after wood placement	500 CY	3,000 SF
Excavation for culvert removal	Within river, at culvert	Temporary; fill and culvert removed and native material immediately replaced after removal	20 CY	200 SF
Fill to replace bank armoring removal	Within river, at locations of existing bank armoring	Permanent; native streambank material placed to replace non-native armoring material	150 CY	1,500 SF
Excavation for bank armoring removal	Within river at locations of existing bank armoring	Permanent; non-native armoring material removed.	150 CY	1,500 SF
Fill for side channel creation	Within river	Permanent	25 CY	300 SF
Fill to place large wood habitat	Within river, mainstem channel banks and side channel	Permanent	207 pieces (621 CY)	Not applicable
Excavation for potential sediment management event	Within river, mainstem channel banks and side channel	Permanent	Up to 50 CY	600 SF

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

In-water work would be conducted within a temporary cofferdam system, as needed, in areas where work should be temporarily isolated from Cedar River flows. Collected water within the temporary cofferdam system could be pumped to and dispersed in upland areas.

The temporary cofferdam is expected to be a bulk sack system, sheetpile system, or other similar system. The temporary cofferdam is intended to minimize impacts to aquatic environments during connection of the side channels to the mainstem of the Cedar River. Impoundment behind the cofferdam would occur slowly, and in a discrete location along the shoreline.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

According to the Federal Emergency Management Agency (FIRM panel 53033C1016G), most of the project site is in the 100-year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal would not discharge waste materials into surface waters; the proposal's effects on stormwater runoff are addressed in Part B.3.c below.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

The proposal would not withdraw groundwater for drinking water or other purposes and would not discharge water or other materials to groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

The proposal would not require discharge of any waste material to groundwater.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

During construction, potential sources of stormwater could include runoff entering the project site during ground-disturbing activities. This could result in discharges of sediment-laden stormwater to the Cedar River. However, the potential for this would be low because the project would implement BMPs from an SPU-approved Temporary Erosion and Sediment Control (TESC) Plan and Stormwater Pollution Prevention Plan (SWPPP).

Long-term stormwater management would primarily be through infiltration, given that 99% of the site would be pervious, consistent with existing site conditions. Should drainage review be required by King County for the potentially relocated road, which would be the only new impervious surface proposed by the project, the project would demonstrate that it has been designed in compliance with applicable stormwater code requirements.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials are not expected to enter the Cedar River during construction. The project would implement BMPs identified in a project-specific TESC Plan and SWPPP to contain stormwater, minimize potential erosion from disturbed areas, and avoid sediment-laden water from reaching the Cedar River. Once construction is complete, potential for waste materials to enter the Cedar River would be low. Areas disturbed by construction would be improved or restored with native vegetation and fill material; this would minimize potential for waste materials or sediment-laden runoff to enter surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposal would have no measurable impact to existing upland drainage patterns. There is only 1% of impervious coverage on the site, and if the access road is removed and relocated, impervious coverage at the site would remain at approximately 1%. The project site is otherwise vegetated and allows for stormwater infiltration.

Furthermore, the proposal has been designed to incorporate BMPs intended to protect drainage patterns in the vicinity of the site; these BMPs are identified in Parts B.1.h and B.3.d.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

These construction BMPs would be deployed to avoid and minimize adverse impacts to the aquatic environment.

BMPs for General Impact Avoidance and Minimization

- All work would be in compliance with requirements stated in permits issued for this project.
- A TESC plan would be developed and implemented for all project elements that entail clearing, vegetation removal, grading, ditching, filling, embankment compaction, or excavation.
- A Spill Prevention, Control, and Countermeasure (SPCC) plan would be developed to prevent and minimize spills that may contaminate soil or nearby waters of the state.
- All equipment, materials, and personnel would remain within the Limits of Disturbance.
- Boundaries of clearing limits would be clearly flagged to prevent disturbance outside of the limits.
- The work areas would be kept in a neat condition, free of debris and litter for the duration of the project.

- Staging and stockpile areas would be flagged by the owner. Staging areas used for construction equipment storage, vehicle storage, fueling, servicing, and hazardous material storage shall be 150 feet or more from any natural water body or wetland. Natural materials may be stockpiled near installation areas.
- Biodegradable hydraulic fluid shall be used in each excavator working within live water. Mechanized equipment and vehicles shall be inspected daily for leaks, and cleaned thoroughly before operation near water.
- Construction activities would comply with the State of Washington Surface Water Quality Standards (WAC 173-201A). The Water Quality Monitoring and Protection Plan prepared for this project must be implemented throughout construction.

These BMPs would serve as a guideline for the contractor to develop a TESC plan.

General TESC Plan recommendations

- The boundaries of the clearing limits shall be clearly flagged in the field prior to construction. During the construction period, no disturbance beyond the flagged clearing limit shall be permitted. The flagging shall be maintained by the Contractor for the duration of construction.
- TESC facilities would be constructed prior to clearing and grading activities, and in such a manner as to ensure that sediment and sediment-laden water do not enter surface waters, the drainage system, or violate applicable water standards.
- The TESC facilities shall be inspected daily and maintained as necessary to ensure their continued functioning.
- The TESC facilities on inactive sites shall be inspected and maintained a minimum of once a week or within the 24 hours following a storm event.
- Stabilized construction entrance and additional measures may be required and shall be maintained for the duration of the project to ensure all access roads are kept clean at no additional cost.

Inspection and Maintenance

- All TESC facilities shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. All TESC facilities shall be inspected daily and within 24 hours after any storm event greater than 0.5 inches of rain per 24 hours, and after events exceeding a 2-hour duration.

Stabilization of soils and protection of slopes

- From May 1 through September 30, all exposed soil shall be protected from erosion by mulching, hydroseed covering, or other approved measures within 3 days of grading. Soils shall be stabilized before a work shut down, holiday, or weekend, if needed, based on the weather forecast. Soil stockpiles must be stabilized and protected with sediment trapping measures. Hydroseed all disturbed areas as soon as practical if not indicated in the contract documents for other permanent stabilization measures.
- Design, construct, and phase cut and fill slopes in a manner that would minimize erosion. Reduce slope velocities on disturbed slopes by providing temporary barriers. Stormwater from off-site should be handled separately from stormwater generated onsite.

After final site stabilization

- All temporary erosion and sedimentation control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed from the site or incorporated into finished grading. Disturbed soil areas resulting from removal shall be permanently stabilized.

4. Plants

a. Check the types of vegetation found on the site:

Known plant species at the site are underlined below:

_X__deciduous tree: alder, maple, aspen, other: cottonwood
_X__evergreen tree: fir, cedar, pine, other
_X__shrubs
_X__grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

Vegetation at the site ranges from bare ground to mature forest. The former house sites and residential yards are either bare ground or grass. There are scattered large trees, mostly Douglas fir (*Pseudotsuga menziesii*) and western red cedar (*Thuja plicata*) in the downstream portion of the site north of 214th St and west of 221st Ave, along with several dense Himalayan blackberry (*Rubus armeniacus*) thickets. The riparian forest south of the pipeline corridor is the most natural at the site, with mixed-age conifers and deciduous trees including western red cedar, Douglas fir, cottonwood (*Populus*), red alder (*Alnus rubra*), and bigleaf maple (*Acer macrophyllum*). There is a shrub understory of salmon berry (*Rubus spectabilis*), vine maple (*Acer circinatum*), snowberry (*Symphoricarpos*), red osier dogwood (*Cornus sericea*), Indian plum (*Ziziphus mauritiana*), sword fern (*Polystichum munitum*), and bracken fern (*Pteridium*). There are numerous non-native ornamental trees and shrubs around the former houses and yards.

b. What kind and amount of vegetation will be removed or altered?

Invasive species (listed in the response to Part B.4.e) would be removed throughout the site using a combination of machinery and by hand. Constructing the proposed side channels would require removal of up to 110 trees (mostly cottonwoods) ranging in size from 4 to 48 inches in diameter at standard height, the majority of which are smaller than 12 inches in diameter. Tree protection measures will be implemented to the greatest extent feasible for preservation of western red cedar trees, and the channel design takes advantage of clearings between trees to minimize tree removals. Removed trees and rootwads would be repurposed in apex log jams designed to improve fish habitat by encouraging sediment transport and enhancing river flow and scour depth.

c. List threatened and endangered species known to be on or near the site.

There are no known federally listed endangered or threatened plant species or state-listed sensitive plant species on or near the project site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Assemblages of three primary species have been identified for planting; only native species would be planted onsite. These include a Wetlands Mix, a Streambank Mix, and a Floodplain Mix. The Wetland mix includes wet adapted species that would be placed within and along the fringes of constructed wetlands and floodplain channels. The Streambank Mix consists of species typically found along streambanks, such as willow (*Salix*), cottonwood, red osier dogwood, and red alder. These species would be planted along mainstem and side channel streambanks and along the sloped boundaries of the constructed wetlands. The Floodplain Mix would be placed in the other areas within the limits of disturbance, and which are unvegetated. The Floodplain Mix consists of species adapted to higher and drier ground with less inundation frequency, such as Douglas-fir, western red cedar, bigleaf maple, salmonberry, vine maple, and snowberry. The intent is to establish a mosaic of native wetland, riparian, and transitional plant communities throughout the site.

e. List all noxious weeds and invasive species known to be on or near the site.

Site investigative work, including site visits and a review of King County's iMap software's noxious weeds data on May 6, 2022, revealed the presence of Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), reed canary grass (*Phalaris arundinacea*), Scotch broom (*Cytisus scoparius*), garlic mustard (*Alliaria petiolate*), tansy ragwort (*Jacobaea vulgaris*), and Japanese knotweed (*Reynoutria japonica*) on or near the site.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Observed birds and other animals at or near the site are underlined below and include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other: steelhead trout; lamprey

Animals in the project area are those common to transitional environments between rural development and forest. In addition to the threatened or endangered fish species listed below, resident fish include mountain whitefish, northern squawfish, western brook lamprey, and several species of sculpin.

b. List any threatened and endangered species known to be on or near the site.

A Priority Habitat and Species (PHS) Report was obtained from WDFW, through "PHS on the Web." The species provided in the table below reflect those that are included in the project-specific PHS Report, are PHS listed, and may be located within the general project area.

Common Name	Scientific Name	State Status
Winter steelhead/Steelhead	*Oncorhynchus mykiss*	PHS-Listed
Coho	*Oncorhynchus kisutch*	PHS-Listed
Sockeye/Kokanee	*Oncorhynchus nerka*	PHS-Listed
Bull trout	*Salvelinus confluentus*	PHS-Listed
Chinook	*Oncorhynchus tshawytscha*	PHS-Listed
Resident coastal cutthroat	*Oncorhynchus clarki*	PHS-Listed
Elk	*Cervus elaphus*	PHS-Listed
Marbled murrelet	*Brachyramphus marmoratus*	PHS-Listed

c. Is the site part of a migration route? If so, explain.

The Cedar River is a migratory corridor for steelhead trout, sockeye salmon, kokanee, coho salmon, and Chinook salmon. Resident coastal cutthroat and bull trout are also documented in the Cedar River. The project site is also within the Pacific Flyway—a flight corridor for migrating waterfowl, migratory songbirds, and other birds. The Pacific Flyway extends from Alaska to Mexico and South America.

d. Proposed measures to preserve or enhance wildlife, if any:

This project is considered a Fish Habitat Enhancement Project by WDFW. The project would provide increased rearing and refuge habitat for Chinook salmon and other salmonid species. Rearing and refuge habitat is the primary limiting factor identified in a range of habitat and salmon conservation plans.

The existing side channel would be reconnected and enhanced to provide fish access and use, including removal of the barrier culvert, earthen fill removal, and grading to create a perennial connection to the mainstem Cedar River. Large wood would be added to the reconnected and newly established side channels to provide fish habitat in the form of cover, complexity, and pools.

The project would also create new channels that would be perennially connected via surface flow to the mainstem Cedar River. This includes flow-through side-channels connected either directly to the Cedar River or to the existing side-channel that would be reconnected to the Cedar. These new channels amount to the creation of 1.1 acres of new water body, totaling 2,500 lineal feet of new habitat that would be accessible to fish for spawning and rearing year-round. Large wood would be placed for habitat cover and complexity throughout the side-channels.

e. List any invasive animal species known to be on or near the site.

King County lists the European starling, house sparrow, Eastern gray squirrel, and fox squirrel as terrestrial invasive species for the county (https://kingcounty.gov/services/environment/animals-

and-plants/biodiversity/threats/
Invasives.aspx [last updated November 10, 2016; last accessed May 18, 2022]).

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The completed project would be a habitat restoration project requiring no energy needs.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No structures or additional impediments to sunlight are proposed. Solar energy reaching adjacent properties would not be affected. The project site is vegetated with mature native conifer trees and the proposed planting of additional native trees would not introduce a substantial increase to the existing intermittent vegetative shading by the forested site.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The proposal would not result in adverse energy or natural resource impacts. No measures to reduce or control energy impacts are needed.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Construction would require storage and use of small amounts of gasoline, diesel fuel, hydraulic fluids, etc. However, these materials are commonly used at construction sites and would not present a significant hazard. BMPs implemented during the site's construction would ensure the proper management and safekeeping of these materials. Additionally, the limits of disturbance have been designed to avoid the existing underground Northwest Pipeline Company natural gas line that bifurcates the project area. Therefore, there is even lower risk of the deeply embedded pipelines being damaged or exposed.

The completed project would not introduce environmental health hazards to the project site.

1) Describe any known or possible contamination at the site from present or past uses.

SPU completed Phase 1 Environmental Site Assessments during the acquisition of the project parcels. There are no known sources of contamination at the project site.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no known hazardous chemicals or conditions on the project site.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Construction would require use and storage of relatively small amounts of materials such as gasoline and diesel fuels, hydraulic fluids, oils, lubricants, and other chemical products. No toxic or hazardous chemicals would be stored, used, or produced at any time during the operating life of the project. BMPs instituted during construction would ensure proper management and safekeeping of these materials.

4) Describe special emergency services that might be required.

Fire and medical response services may be required in the event of an emergency during construction. However, the completed project would not result in higher levels of special emergency services than already exist in the project area.

5) Proposed measures to reduce or control environmental health hazards, if any:

The proposal would not encounter or result in temporary or permanent environmental health hazards; therefore, no environmental health hazard mitigation or control measures are required or proposed. SPU would sample excavated soil as needed to confirm that it is above Model Toxics Control Act Method A levels and suitable for unrestricted reuse.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The surrounding area is minimally developed with low-density residential neighborhoods. No existing sources of noise would affect the proposal.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Construction would create temporary noise. This work would occur during daytime hours and does not include any impact or pulsing equipment that would produce loud sound outside of the general construction area.

The completed habitat restoration project would not generate noise.

3) Proposed measures to reduce or control noise impacts, if any:

The proposal would not result in adverse noise impacts. No measures to reduce or control noise impacts are needed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The project site is vacant land, with insubstantial remnants of previous low-density residential development. The project site and adjacent properties are in King County's Rural Area RA-5 and RA-10 zoning districts, which generally allows for large lot residential development; the area surrounding the project site is developed consistent with this zone.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

There are no working farms or forest lands on or near the project site.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

The proposal would not affect or be affected by normal business operations of working farms or forest lands because there are no designated agricultural or forest lands in the surrounding area.

c. Describe any structures on the site.

The property was previously developed for single family residential use. These homes were removed by SPU in 2015–2017 once the parcels were purchased. Three to four wells, two well houses, a recessed concrete vault, a foot/all-terrain vehicle bridge, and bank protection associated with the former homesites remain on the project site. Bank protection includes concrete rubble, loose riprap, a rock-filled wire basket gabion, and a multi-level grouted stone wall and steps. An existing road provides access to the adjoining parcel to the north. These structures would be removed, and the road may be relocated along the eastern (landward) extent of the project area.

d. Will any structures be demolished? If so, what?

The remaining structures described in response to Part B.8.c would be demolished as an element of this project.

e. What is the current zoning classification of the site?

The project site is currently zoned RA-5 (Rural Area, one dwelling unit per 5 acres) in unincorporated King County.

f. What is the current comprehensive plan designation of the site?

The comprehensive plan designation for the project site is Rural Area.

g. If applicable, what is the current shoreline master program designation of the site?

The proposal would occur in the Cedar River and in the 200-foot SMP district of the Cedar River. The shoreline environment designation is Conservancy Shoreline. Portions of the project waterward of the OHWM of the Cedar River are in the Aquatic shoreline environment.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

According to King County's GIS mapping tool, the project site contains these critical areas:

- Flood Hazard Areas: Portions of the project site are in the 100-year floodplain. The regulatory floodway of the Cedar River also overlaps with portions of each parcel comprising the project site.
- Seismic Hazard Areas: The entire project site is mapped as being within the seismic hazard area.
- Type S Water body: KCC 21A.24.355(A)(1) states "Type S waters include all aquatic areas inventoried as 'shorelines of the state' under King County's Shoreline Master Program, K.C.C chapter 21A.25, in accordance with Chapter 90.58 RCW." King County has mapped the Cedar River as a "shoreline of the state," and, as such, the project area includes a Type S water body.

i. Approximately how many people would reside or work in the completed project?

The completed project would not result in new residences or employment opportunities.

j. Approximately how many people would the completed project displace?

No people would be displaced by the completed project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

The proposal would not result in displacement impacts; therefore, no avoidance or reduction measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Habitat enhancement and the project site's recent low-density residential use are permitted land uses in the RA-5 zone. Given the typical character of the RA-5 zone to allow for one dwelling unit

for every 5 acres, the natural character of the project site is compatible with surrounding lands that are largely undeveloped. The scale of the physical and operational characteristics of the habitat restoration project would remain substantially the same as the existing undeveloped site, which ensures the proposal would not generate new compatibility issues.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The project would have no effect on agriculture or forest lands; therefore, no impact reduction or control measures are proposed.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No housing units would be provided as part of the proposed project.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No housing units would be eliminated as part of the proposed project.

c. Proposed measures to reduce or control housing impacts, if any:

Because the proposed project would not provide or eliminate housing, no measures to reduce or control housing impacts are proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No structures or buildings are proposed as an element of this habitat enhancement proposal.

b. What views in the immediate vicinity would be altered or obstructed?

The project would not construct structures that would alter or obstruct views in the immediate vicinity. The project proposes to plant native tree species that may grow to be over 100 feet tall, such as Douglas fir, western red cedar, and bigleaf maple; however, because the project site is presently forested with similar mature species, and because of the relative slow-growth of these species, impacts to these plantings is expected to be *de minimis* and would result in a forested environment similar to the current state of the site and adjoining properties.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The proposed project would not result in adverse impacts to aesthetics; therefore, no measures to reduce or control aesthetics are proposed.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Light and glare associated with the proposed project would be limited to temporary, short-term impacts and would be generated by construction equipment and trucks during construction. Most work would occur during a typical workday; thus, lighting requirements would be minimal. If used, lighting would be deployed typically during the start and end of the standard daily shifts when natural light levels are lower. The completed project would not produce glare.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The finished project would not produce light or glare.

c. What existing off-site sources of light or glare may affect your proposal?

No significant sources of light or glare exist near the project site. Existing off-site sources of light or glare would not affect the proposed habitat restoration project.

d. Proposed measures to reduce or control light and glare impacts, if any:

The proposed project would not result in impacts from light or glare; therefore, no measures to reduce or control light and glare are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Cedar River provides recreational activities such as swimming, fishing, and kayaking, with peak use after Memorial Day and through the Labor Day weekend. Placement of log jams in the project's design have implemented measures to avoid encumbering water-based recreationists using the Cedar River. The logs will be stabilized through a mix of bank burial, backfill with gravel-cobble ballast, and bracing against vertical piles driven into the ground. Where appropriate, bumper logs are incorporated on the upstream face of the structure for river user safety. These include a stack of log boles extending out from the bank and oriented in the downstream direction such that floating objects that come into contact with the structure would most likely be redirected out into the main channel flow, reducing the potential for impingement on the structure. The project would undergo DNR review for potential safety hazards of mainstem large wood placement; approval or issuance of DNR permit would ensure safety of water-based recreationists.

The Cedar River Trail located east of the project area provides recreational opportunity near the river; however, in this area of the Cedar River, the Cedar River Trail is not immediately adjacent to the river. Royal Arch Park is north of the project site and provides shelters, picnic areas, ball fields, and direct access to the Cedar River for the public, made possible by the Royal Arch Masons Association of King County, who own and manage the park. The project would not affect access to Royal Arch Park or the Cedar River Trail. The constructed project would remain open to the public,

although it is unlikely that the project would accommodate substantial public use given the wetter conditions of the habitat enhancement project site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

In-water work would occur during peak recreational months. However, this work would be immediately adjacent to the shoreline, and not mid-channel, which avoids potential conflict with boaters and other water uses. No other temporary impacts to recreational uses are expected.

The constructed project would not displace any existing recreational uses. Passive recreation from wildlife viewing may nominally increase.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The proposed project would not result in impacts to recreation opportunities; therefore, no measures to reduce or control recreation impacts are proposed.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are no building, structures, or sites in the project area that are more than 45 years old listed in or eligible for listing in national, state, or local preservation registers.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There have been multiple separate but related cultural resources investigations of the site. In 2017, a cultural resources survey was performed on SPU parcels south (upstream) of SE 214th St, including an archeological and architectural inventory (Little and Beckner 2017). The architectural survey was performed to support demolition of residential structures and concluded the structures were not eligible for listing on the National Register of Historic Places or the Washington Heritage Register. The archeological survey recorded two archeological isolates of historic-period debris from the 1930s and three fragments of fire-cracked rock, both of which appeared in disturbed contexts. For these parcels south of SE 214th St, the cultural resources investigation recommended that an archaeological monitor be present for ground-disturbing activities within 30 meters of the Cedar River and exceeding 40 centimeters in depth.

In another effort in 2017 (Beckner et al. 2017), an architectural survey of parcels north (downstream) of SE 214th St was performed in anticipation of SPU's demolition of residential structures. It concluded the project had no potential to adversely impact historic resources; structures were subsequently removed.

Another effort was performed in summer/fall 2020 (Durkin and McPeak 2020) and included an archeological investigation of SPU parcels north of SE 214th St. The investigation included 36 shovel probes, did not observe any significant cultural materials, and documented extensive disturbance from previous residential uses. For these parcels north of SE 214th St, the report concluded no further cultural resource study or monitoring was necessary.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Archeological surveys have been conducted at the project site and are detailed in Part B.13.b Results of the survey are summarized in Part B.13.b and are formalized in a Cultural Resources Assessment on file with SPU (Historical Research Associates 2020).

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Consistent with the findings and recommendations of the cultural resources investigations, monitoring would occur during ground-disturbing activities within 30 meters of the Cedar River and exceeding 40 centimeters in depth. An Inadvertent Monitoring and Discovery Plan would be prepared prior to construction and approved by SPU's cultural resources specialist. A copy would be maintained onsite throughout the duration of work.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Access to the project site is provided by SE 214th St in Maple Valley, Washington. Existing access connects with Renton-Maple Valley Road to the east. The project may potentially include vacating a small western portion of SE 214th St on SPU-owned properties in the proposed habitat enhancement area. This public street would continue to serve the project site after construction.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Public transit does not directly serve the project site. The nearest King County Metro transit stop is approximately 0.5 miles southeast of the project site.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The proposal would not add or remove parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The project may potentially vacate and demolish 221st Ave SE and the westernmost portion of SE 214th St, and would relocate access for the adjoining property to the north that is currently accessed by 221st Ave SE. This relocated access road would extend from the existing SE 214th St and would run along the east edge of parcel 2752200066 to connect to the private parcel to the north (parcel 2752200050). The relocated access road is intended to be constructed prior to the demolition of the vacated road to ensure uninterrupted access to public roads for parcel 2752200050. This action is pending continued coordination and approvals from the adjacent landowner and King County. If SPU is unable to execute an agreement with the adjacent landowner for relocated access or obtain approval from King County to vacate the roadway, the project design may be modified to avoid construction of the proposed habitat enhancements and floodplain reconnection in this area. No other transportation improvements are proposed.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The proposal would not occur in the vicinity of commercial water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Construction is expected to generate up to 550 vehicle round trips. The completed project is expected to generate up to 10 round trips per year to conduct monitoring of the habitat enhancements as may be required by project permits and approvals. The project would not generate a volume of commercial or non-passenger vehicles. Traffic generated for the completed project is not expected to increase, as only passive, infrequent use of the completed project habitat site is anticipated.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

Neither the proposal nor its construction would interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets.

h. Proposed measures to reduce or control transportation impacts, if any:

The proposed project has been designed to avoid impacts to transportation. King County public roads would be used during and after construction for access to the project site; nearby private roads would not be used, encumbered, or interrupted by project construction. No additional measures to reduce or control transportation impacts are proposed.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No, the proposed project would not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Because there would be no impacts to public services, no measures to reduce or control impacts are proposed.

16. Utilities

a. Circle utilities currently available at the site:
electricity, **natural gas**, **water**, refuse service, **telephone**, **sanitary sewer**, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The proposed habitat restoration project would not require or generate utility infrastructure; as such, utilities are not proposed for the project. The project has been designed to avoid earthwork on the Northwest Pipeline Company property that contains a natural gas pipeline. No utilities will be relocated as an element of this proposal.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

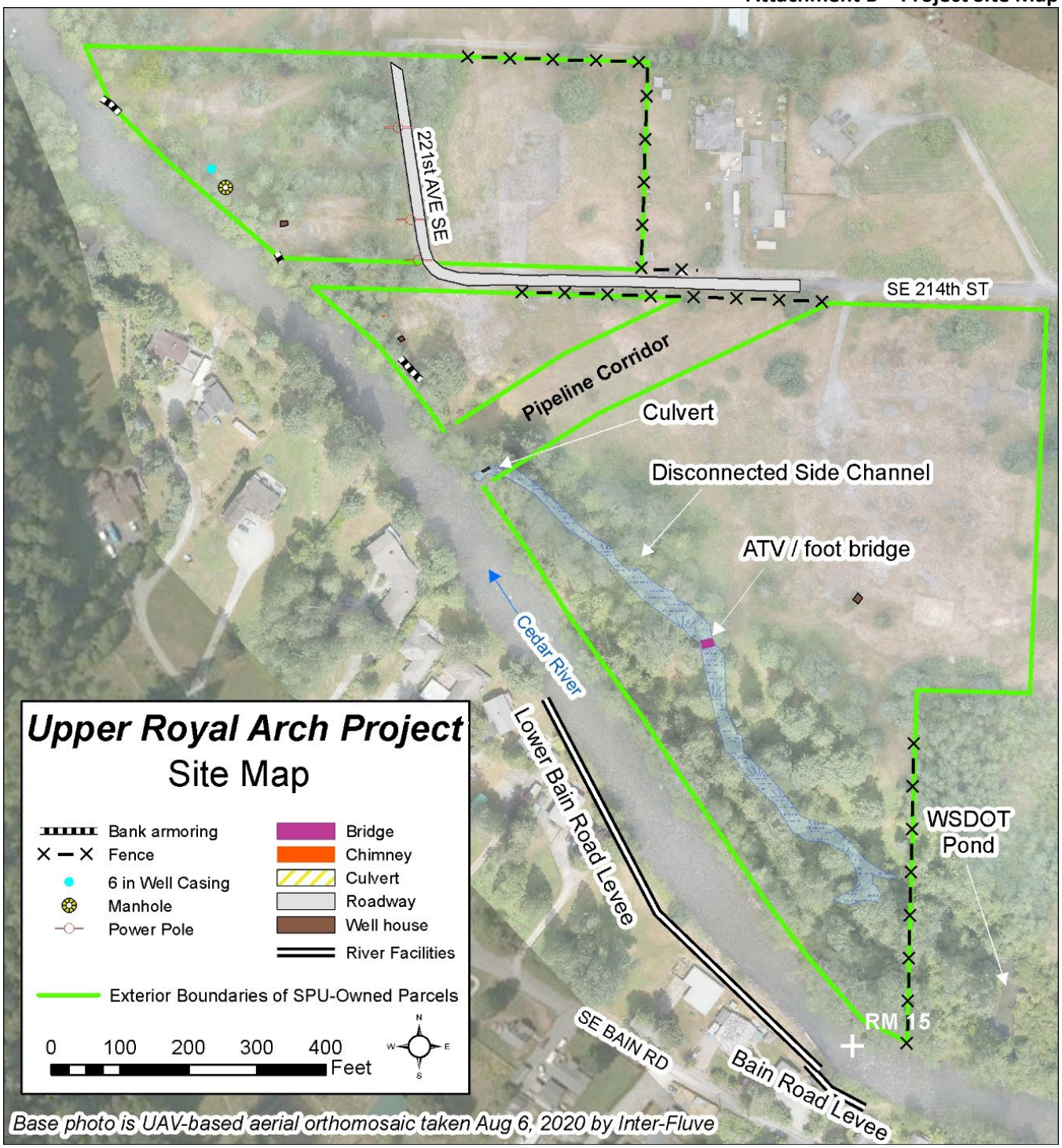
Signature: _____ Digitally signed by Brent Lackey Date: 2022.08.23 08:50:31 -07'00'

Brent Lackey, Project Manager

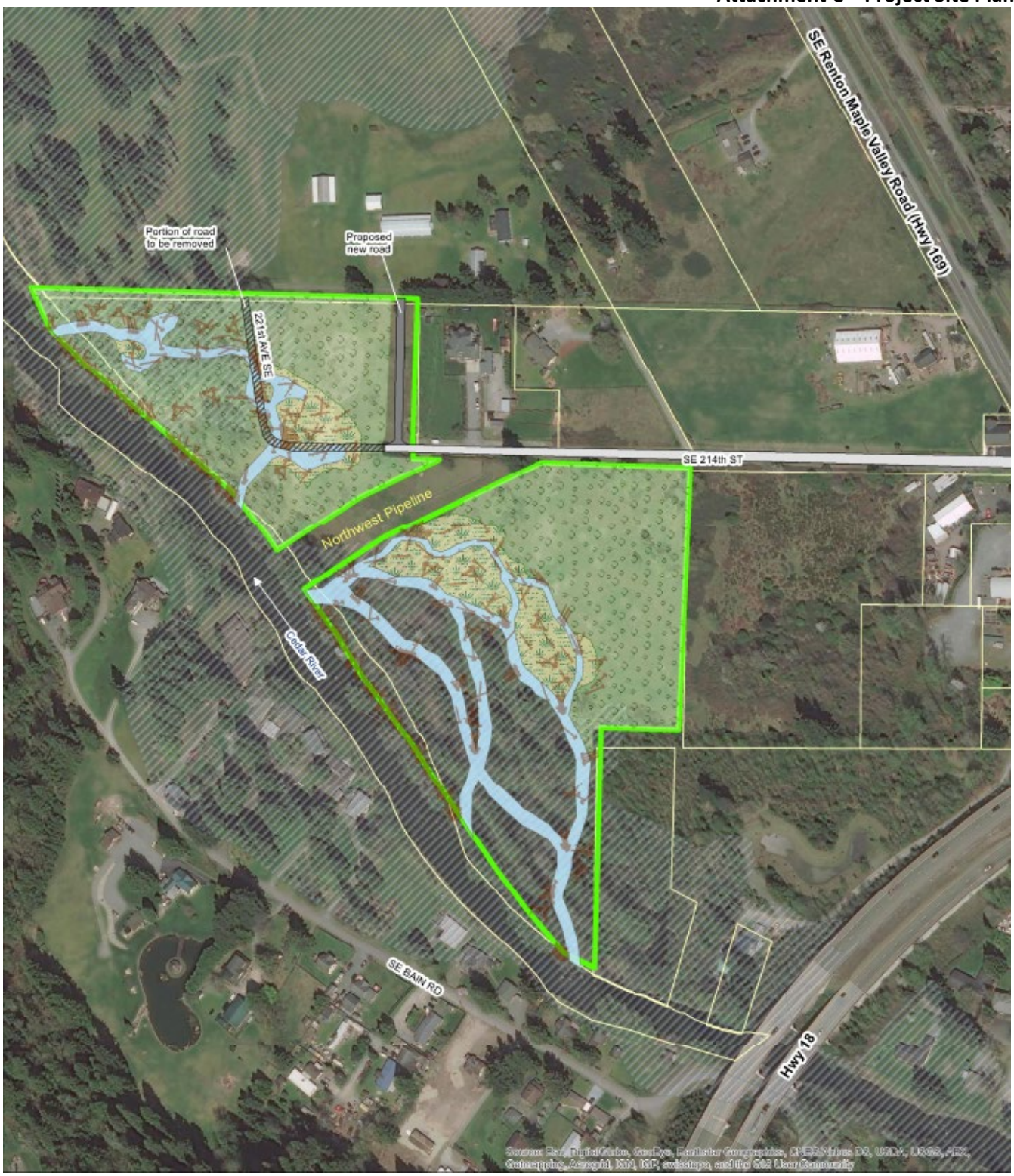
ATTACHMENTS
Attachment A – Project Vicinity Map
Attachment B – Project Site Map
Attachment C – Project Site Plan
Attachment D – Potential Design Refinements
Attachment E – Greenhouse Gas Emissions Worksheet

Attachment A – Project Vicinity Map

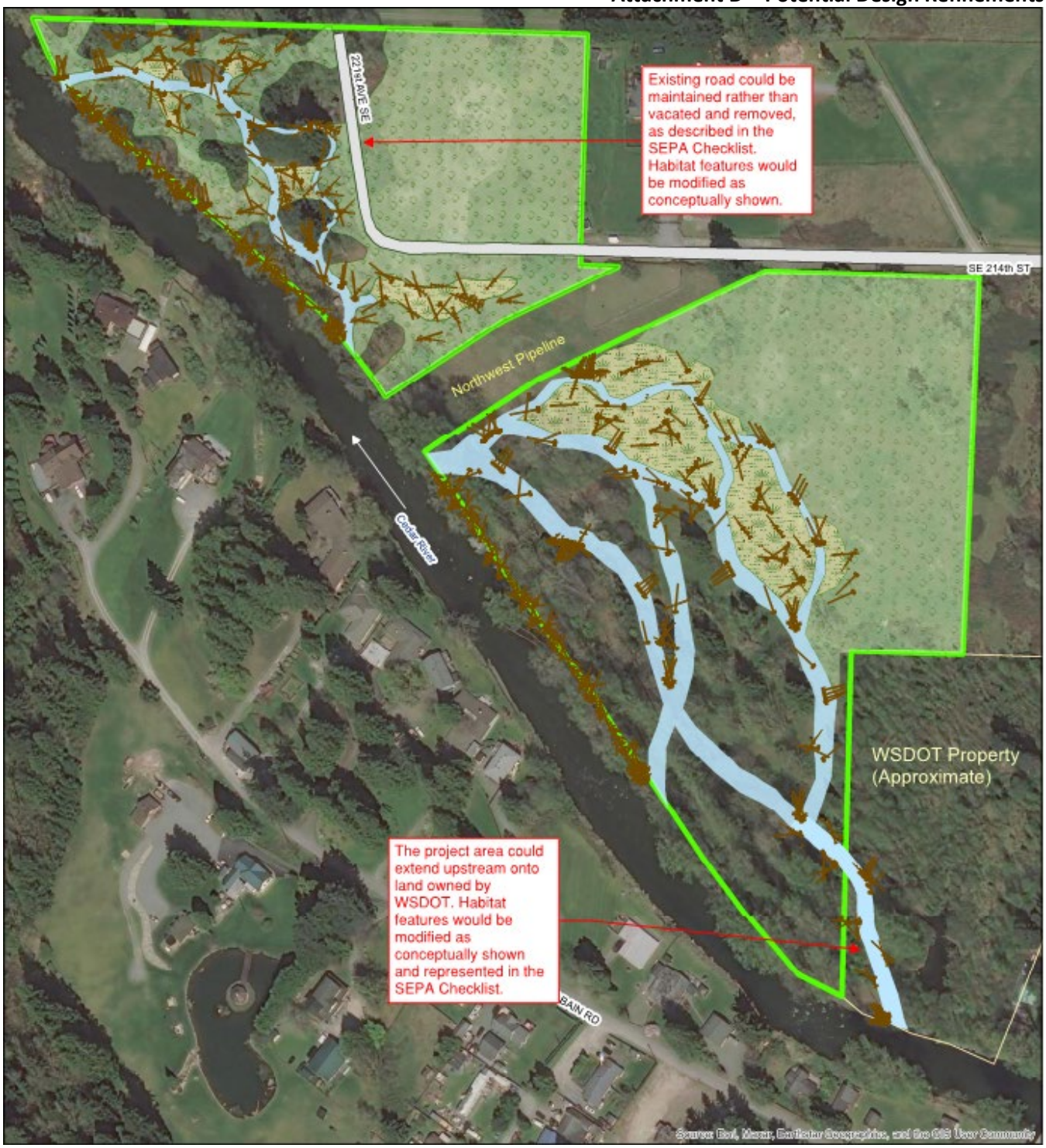
Attachment B – Project Site Map



Attachment C – Project Site Plan



Attachment D – Potential Design Refinements



Attachment E – Greenhouse Gas Emissions Worksheet

Section I: Buildings

			Emissions Per Unit or Per Thousand Square Feet ($MTCO_2e$)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions ($MTCO_2e$)
Single-Family Home	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home	0		41	475	709	**0**
Education		0.0	39	646	361	**0**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other than Mall)		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**
					TOTAL Section I Buildings	**0**

Section II: Pavement

						Emissions ($MTCO_2e$)
Concrete/curb (50 $MTCO_2e$/1,000 SF of pavement with a thickness of 6 inches)		128 CY of concrete = 6,900 SF 6 inches thick				**345**
					TOTAL Section II Pavement	

Section III: Construction

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section III Construction	**260.3**

Section IV: Operations and Maintenance

	Emissions ($MTCO_2e$)
(See detailed calculations below)	
TOTAL Section IV Operations and Maintenance	**4**
TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT ($MTCO_2e$)	**609.3**

Section III Construction Details		
Construction: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions** *Transfer dump truck calculations assume that 50% of excavated material would be disposed of on neighboring landowners' parcels, pending written agreements.*
Excavator	13,500	150 days x 10 hours/day x 9 gallons/hour
Transfer dump trucks (12 CY capacity)	2,795.2	13,976 round-trip miles ÷ 5 mpg
Flatbed truck	1,092	5,460 round-trip miles ÷ 5 mpg
Vibratory Roller-compactor	140	2 days x 10 hours/day x 7 gallons/hour
Asphalt Paver	60	2 days x 10 hours/day x 3 gallons/hour
Subtotal Diesel Gallons	17,587.2	
GHG Emissions in lbs CO_2e	466,940.2	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	212	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
Pick-up Trucks or Crew Vans (4)	1,088	68 days x 8 trucks x 1 round-trips/day x 20-mile round-trip ÷ 10 mpg
6 inch pump (2)	900	45 days (12 hours/day) x 10 gallons/half-day x 2 pumps
Generator	2,400	60 days x 10 hours/day x 4 gal/hr
Subtotal Gasoline Gallons	4,388	
GHG Emissions in lbs CO_2e	106,628.4	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	48.3	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	466,940.2	212
Gasoline	106,628.4	48.3
Total for Construction	573,568.6	**260.3**

Section IV Long-Term Operations and Maintenance Details		
Operations and Maintenance: Diesel		
Equipment	**Diesel (gallons)**	**Assumptions**
		One sediment management event may occur to ensure proper channelization and flood storage capacity is achieved, as designed.
Excavator	180	1 sediment management event x 2 days x 90 gallons per day (9 gal/hr)
Transfer dump trucks (12 CY capacity)	4	1 sediment management event x 20 round-trip miles ÷ 5 mpg
Subtotal Diesel Gallons	184	
GHG Emissions in lbs CO_2e	4,885.2	26.55 lbs CO_2e per gallon of diesel
GHG Emissions in metric tons CO_2e	2	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance: Gasoline		
Equipment	**Gasoline (gallons)**	**Assumptions**
		General maintenance of the project site would occur once a quarter for 3 years. General maintenance is estimated to occur 12 times per year for 50 years.
Pick-up trucks or crew vans (4)	96	4 general maintenance events/year x 3 years x 4 trucks x 1 round-trip x 20 miles round-trip ÷ 10 mpg)
Hand-held mower, blower, etc.	96	4 general maintenance events/year x 3 years x 1 gal/hour x 8 hours
Subtotal Gasoline Gallons	192	
GHG Emissions in lbs CO_2e	4,665.6	24.3 lbs CO_2e per gallon of gasoline
GHG Emissions in metric tons CO_2e	2	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	**CO_2e in pounds**	**CO_2e in metric tons**
Diesel	4,885.2	2
Gasoline	4,665.6	2
Total Operations and Maintenance	9,550.8	**4**