



King County

ENVIRONMENTAL CHECKLIST

REINIG ROAD REVETMENT REPAIR

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [\[HELP\]](#)

1. Name of proposed project, if applicable:

Reinig Road Revetment Repair

2. Name of applicant:

King County Department of Natural Resources and Parks Water and Land Resources Division
River and Floodplain Management Section

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

Stella Torres

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Phone: 206-263-0969

Fax: 206-296-0192

4. Date checklist prepared:

1/7/2020

5. Agency requesting checklist:

King County Department of Natural Resources and Parks Water and Land Resources Division

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

June 2021 – September 2021

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

No.

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

SE Reinig Road Embankment Failures – Slope Stability Analyses, April 2019, King County Department of Local Services – Road Services Division

Summary and Interpretation of Existing Geomorphic Conditions in the Vicinity of the Reinig Road Revetment, March 2019, King County Department of Natural Resources and Parks, Water and Land Resources Division, River and Floodplain Management Section

DRAFT Channel Migration Considerations, Short-term and Long-term No Action Alternative, Reinig Road Revetment Repair, December 2018, King County Department of Natural Resources and Parks, Water and Land Resources Division, River and Floodplain Management Section

DRAFT Reinig Road Revetment Repair FHC Approach Technical Memorandum, July 2019, King County Department of Natural Resources and Parks, Water and Land Resources Division, River and Floodplain Management Section

Reinig Road Revetment Repair, Wetland Delineation Report, April 2019, The Watershed Company
Hydraulic Modeling Approach Report

King County Historic Preservation Program Cultural Resources Review – Reinig Road Revetment Repair, February 2019, King County Department of Natural Resources and Parks, Historic Preservation Program
King County Historic Preservation Program Cultural Resources Review – Reinig Road Geotechnical Borings, May 2018, King County Department of Natural Resources and Parks, Historic Preservation Program

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.

No.

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

Permit	Issuing/Regulating Agency
Clean Water Act Section 404 Permit	US Army Corps of Engineers (USACE)
National Historic Preservation Act - Section 106	US Army Corps of Engineers (USACE)
Clean Water Act Section 401 Water Quality Certification	WA Dept of Ecology
Aquatic Use Authorization	WA Dept of Natural Resources
Hydraulic Project Approval	WA Dept of Fish & Wildlife
Executive Order 05-05	WA Dept of Archeology and Historic Preservation (DAHP)
Forest Practices Permit	WA Dept. of Natural Resources
SEPA (State Environmental Policy Act)	King County (lead agency)
Clearing/Grading Permit	King County Dept of Local Services
Shoreline Substantial Development Permit	King County Dept of Local Services
Parks/NRL Special Use Permit	King County Dept Natural Resources/Parks
Cultural Resources Review	King County
ROW Special Use Permit	King County Real Estate Services
Flood Hazard Certification	King County Dept of Local Services and City of Snoqualmie

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.)

The Reinig Road Revetment Project will repair a damaged section of the existing Reinig Road Revetment. The revetment provides protection to critical public infrastructure, including: SE Reinig Road (King County), overhead power lines (Puget Sound Energy) and a buried water supply pipeline (City of Snoqualmie).

The project footprint is approximately 2acres, and consists of the following primary elements:

- Rock Riprap Revetment: Reconstructing up to 775 lineal feet of rock revetment within the original revetment prism up to the OWHM. The repaired revetment will be sloped back toward the road at a more stable 1.5H to 1V slope and will include launchable toe rock to counter future toe scour. Over 100 trees (approximately 112) will be removed to reconstruct the revetment.
- Vegetated Geogrids: Above the riprap, four layers of Geogrid wraps will be constructed on the upper slope of the regraded bank, with live cuttings of native riparian shrub species placed between each layer.

- Native Vegetation: An approximately 17,255 square foot (SF) area of the upper bank slope will be planted with a combination of native trees and shrubs, and covered with mulch and an erosion control blanket.
- Engineered Log Jams (ELJs): Four ELJs will be constructed at the toe of the slope. The ELJs will project into the river channel to deflect flows away from the riverbank and provide aquatic habitat. Each ELJ will be constructed with four layers of large logs and rootwads anchored to steel piles and ballasted with large boulders. Trees removed during the revetment reconstruction will either be used in construction of the ELJs or placed unsecured on the revetment slope between the ELJs.
- Culvert Outfalls: Riprap will be placed below the outlets of the two existing road culverts to dissipate energy and prevent erosion. This riprap will be above the OHWM and within the prism of the original revetment.

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.

The proposed project is located in unincorporated King County just north of the City of Snoqualmie jurisdictional boundary on the following two undeveloped parcels owned by King County Parks Department:

- 3324089059: PS PL & P 40 FT R/W OVER GLS 3 & 4 STR 33-24-8 LESS W 334.52 FT OF GL 3
- 3324089005: THAT POR GL 5 LY NELY OF 40 FT R/W & SWLY OF REINIG RD

The project extends approximately 775 feet between the south side of SE Reinig Rd (across from 41433 SE Reinig Rd) and the right (north) bank of the Snoqualmie River between river miles 41.75 and 41.84.

NE ¼ Section 33, Township 24N, Range 8E
47.525 N Latitude and -121.786 W. Longitude

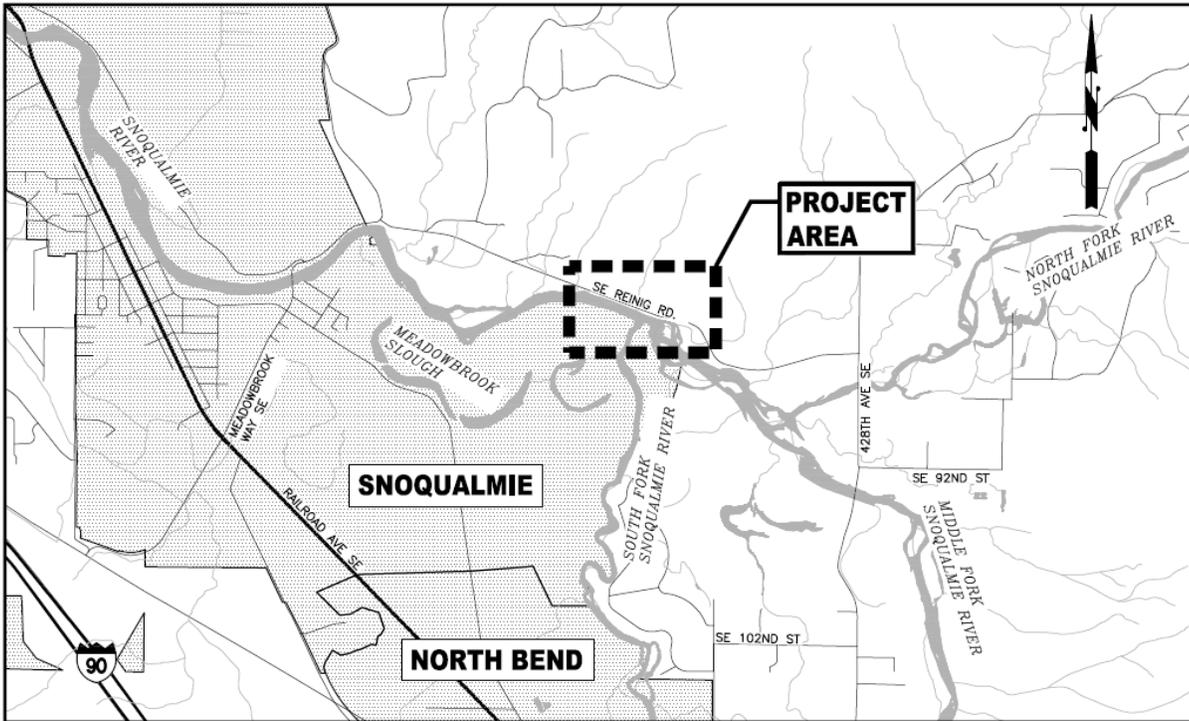


Figure 1. Vicinity Map

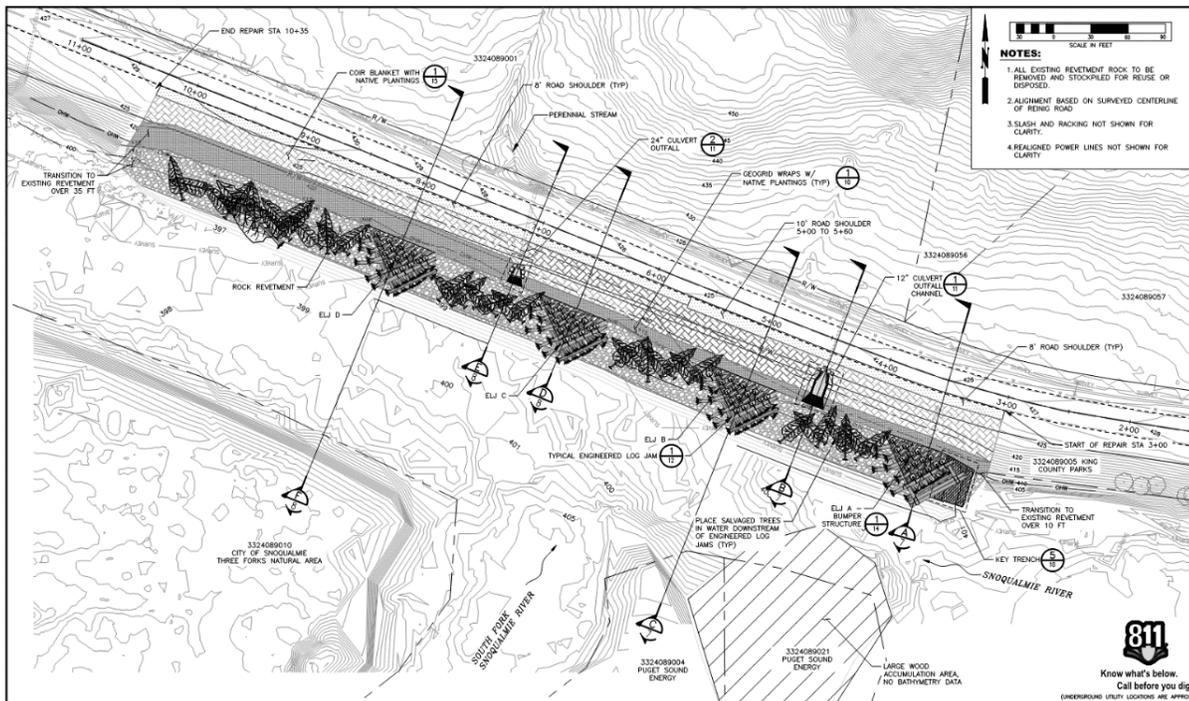


Figure 2. Site Plan

B. Environmental Elements [\[HELP\]](#)

1. **Earth** [\[help\]](#)

a. General description of the site:

(underline one): Flat, rolling, hilly, steep slopes, mountainous, other ___ steep riverbank and relatively flat riverbed.

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

The steepest slopes on site are within the eroded sections of the riverbank and exceed 1:1 (100%). Some of the lower portions of the eroded sections are nearly vertical to overhanging.

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.

The project site is located on the bed and bank of an alluvial river channel, and is situated at the toe of a historic landslide. The bed of the river channel is composed of river alluvium deposits including unconsolidated cobbles, gravels, sands, and silt. The lower riverbank is a combination of surficial river alluvium and landslide deposits (diamicton) composed of gravel and cobble in a dense matrix of sandy silt. The upper bank soils consist of low-plasticity loose silty fine sand/sandy silt with scattered gravel. Within the road prism and shoulder, up to 10-feet of loose to medium dense sandy silt was placed as fill material.

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

Yes. The alluvial deposits on the river bed are inherently unstable as they are subject to natural river processes including deposition, erosion and channel migration. While the riverbank has been protected from river erosion since the 1960's with rock riprap revetment, sections of the riverbank where the revetment has been damaged are subject to river erosion and scour. Finally, soils mapping and field assessment indicates the adjacent hillslope has been subject to landslides.

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.

Activity	Source	Quantity
Revetment Construction		
Clear and grub of existing vegetation	Onsite vegetation	0.91 AC
Regrade bed and bank	Onsite excavation of native soils	13,900 CY
Place revetment armor rock	Quarry/supplier	8,020 CY
Install geo-grid wraps	Supplier: geo-mesh and geo-grid Quarry/supplier: topsoil and gravel borrow	3,500 CY
Place road shoulder gravels	Quarry/supplier	200 CY
Placement of culvert outfall riprap	Quarry/supplier	100 CY
ELJ Construction		
Excavate riverbed alluvium	Onsite excavation of native soils	5,100 CY
Place toe rock and ballast rock	Quarry/supplier	760 CY
Install steel piles	Supplier	28 each
Install large wood & slash	Supplier	950 CY

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

Yes, erosion could occur as a result of clearing, excavation, hauling of material and general project construction.

Additionally, bank soils will be temporarily exposed during excavation and regrading of the riverbank. Although unlikely during summer construction, there is the potential these soils could be subject to erosion during rain events.

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

There will be no impervious surface created by this project.

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

A Temporary Erosion and Sediment Control Plan (TESCP) is included in the Permit Drawings, and TESC measures will be implemented both prior and during ground disturbing activities, as needed. These may include common BMP's such as silt fencing, straw wattles, straw placement, plastic sheeting, etc. to control sediment runoff and protect bare soils.

Following construction, disturbed soil areas will be stabilized by installation of native vegetation.

2. Air [\[help\]](#)

- 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.

The project has the potential to generate construction related dust. Dust control will be performed on an as-needed basis by stabilizing construction access surfaces and watering. All loads of soil or other debris leaving the site will be covered.

The completed project will not emit gasses with the potential to negatively affect climate change.

Construction vehicles and equipment (i.e. excavators, dump trucks, pick-up trucks, etc.) will be used during construction. This equipment will emit gasses including carbon dioxide (CO₂), methane and nitrous oxide, as well as others in much smaller amounts. The global warming potential (GWP) of these compounds is measured in “carbon dioxide equivalents,” or CO₂e, which converts the GWP of various gasses into their equivalent in CO₂. The amount of CO₂e that may be emitted as a result of constructing the proposed project has been estimated by computing the amount of fuel to be consumed by equipment used to construct the project or by estimating their hourly output of various greenhouse gases. Fuel consumed or hourly output is then converted into CO₂e emitted using formulae developed by the Energy Information Administration (EIA) of the U.S. Department of Energy.

Construction of the proposed project will likely result in the discharge of approximately 109.1 tons of CO₂e to the atmosphere.

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

No.

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

Engines will not idle unnecessarily and will be kept in proper working order with all filters and other emission control devices functional. To help reduce transportation costs, it is expected that the contractor will source construction materials from locations closer to the project site, thus helping reduce delivery vehicle mileage and corresponding emissions.

3. Water [\[help\]](#)

- a. Surface Water: [\[help\]](#)

- 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.

Yes, the project is located on the right (north) bank of the mainstem Snoqualmie River at the confluence with the South Fork Snoqualmie River (South Fork). Two small unnamed streams, one perennial and one ephemeral, are discharged from cross culverts under Reinig Road and flow through the project site into the Snoqualmie River. There are no mapped wetlands within the project site.

- 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.

Yes, the entire project will occur adjacent to and within the Snoqualmie River channel and the two unnamed stream channels during summer low flows and within the HPA approved work window. Work below the OWHM of the Snoqualmie River will include rebuilding of the revetment (excavation of riverbed alluvium and riverbank material, placement of permeable ballast, quarry spalls, Class C riprap, and 3-4 man toe rock) and construction of the ELJ's (excavation of riverbed alluvium, driving of steel piles, placement of large ballast rocks, logs, slash and 3-4 man toe rock). Work above the Snoqualmie River OWHM but within the two unnamed stream outfalls includes excavation of riverbank materials, placement of permeable ballast, quarry spalls and Class C riprap, and installation of geogrids wraps). Work adjacent to the Snoqualmie River OWHM and two unnamed stream outfalls includes excavation of riverbank materials, installation of geogrids wraps, and placement of native backfill and structural fill. The drive mechanisms of heavy construction equipment will remain above the water at all times. When feasible equipment will be operated only above the OHWM and landward of edge-of-water. However, during construction of the ELJs, it may be necessary for heavy equipment to operate below the OWHM and water-ward of edge-of-water. Also, the crane-mounted vibratory driver for installing the steel H piles will necessarily be extended water-ward of the edge-of-water. To be clear, no drive mechanisms of any equipment will be operated in the water. Additionally, measures will be implemented to minimize water velocities within in-water work areas (i.e. super-sack/bulk-bag cofferdam) and to control turbidity beyond in-water work areas (i.e. turbidity curtain).

- 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.

Activity	Location	Quantity	Source of Fill
Excavate	Right river bank, <u>below</u> OWHM	5,700 CY	N/A
Excavate	Right river bank, <u>above</u> OWHM	8,200 CY	N/A
Revetment Armor Rock Placement	Right river bank, <u>below</u> OWHM	8,020 CY	Offsite Quarry
Geogrid Wrap Lifts construction	Right river bank, <u>above</u> OWHM	3,500 CY	Offsite supplier and quarry
Salvaged Native Soil	Right river bank, <u>above</u> OWHM	1,500 CY	Stockpile of material excavated onsite
Road Shoulder Gravel	Right river bank, <u>above</u> OWHM	200 CY	Offsite Quarry
Outfall riprap placement	Right river bank, <u>above</u> OWHM	110 CY	Offsite Quarry
ELJ - Excavate	Right river bank, <u>below</u> OWHM	5,100 CY	N/A

ELJ construction – Toe rock, ballast rock	Right river bank, <u>below</u> OHWM	760 CY	Offsite quarry
ELJ construction – Steel Piles	Right river bank, <u>below</u> OHWM	28	Offsite supplier
ELJ construction – Large Wood & Slash	Right river bank, <u>below</u> OHWM	950 CY	Offsite supplier

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

No.

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

Yes. The entire proposed project site is within the current FEMA 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.

No.

b. Ground Water: [\[help\]](#)

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.

No groundwater will be withdrawn from a well for drinking water or other purposes.

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.

No waste materials will be discharged to the ground.

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, water from the culvert outlets for the two unnamed creeks will be bypassed through temporary pipes directly to the Snoqualmie River channel. Energy dissipaters will be installed at the outlets of these two pipes to minimize scour and turbidity in the river channel.

The well-drained alluvial soils on the project site will allow most rainfall to infiltrate or disperse on site and limit stormwater runoff from leaving the work site. Any stormwater runoff that doesn't infiltrate disturbed areas during construction will be intercepted by BMP's (silt fencing, straw wattles, turbidity curtain, etc.) to minimize turbidity before discharging into the Snoqualmie River.

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

Waste materials will be prevented from entering the ground or surface waters by maintaining a clean site, properly disposing of debris and use of Best Management Practices to filter and trap material within the project site.

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

The drainage patterns in the vicinity of the site will not be altered.

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

Temporary erosion and sediment control measures will be used during construction to reduce and control surface and groundwater runoff. Dense revegetation with native riparian plants with the project will be used to protect surface water quality following construction. No groundwater impacts are expected during or following construction.

Discharges of turbid water will be managed to comply with state water quality standards.

Techniques include but are not limited to the following: isolating the work area from flowing water; slowing the rate of in-water work; pumping turbid water to a dispersal area; and impounding turbid water within work areas using BMP's such as booms or curtains.

4. **Plants** [\[help\]](#)

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

deciduous tree: alder, maple, cottonwood, aspen, other

evergreen tree: fir, cedar, pine, spruce, other

shrubs

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

X other types of vegetation: Himalayan Blackberry (*Rubus armeniacus*)

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

More than 100 trees (approximately 112) will be removed from the riverbank for the repair. Most of these trees are native species including black cottonwood, bigleaf maple, Douglas-fir, western redcedar, and red alder. Shrubs to be removed include snowberry, Himalayan blackberry, Japanese knotweed, swordfern, salmonberry, and thimbleberry.

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

No threatened or endangered plant species have been documented 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:

The final planting plan will be submitted at 90% design, and will include: a combination of more than 300 native trees and more than 3,000 native shrubs planted over 17,255 square feet of the upper bank slope between the vegetated geogrids and the gravel road shoulder, native shrub cuttings planted between the geogrid wraps, and native shrub cuttings planted on the tops of the ELJ's.

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

Noxious weeds and invasive species at the site are dominated by reed canary grass (*Phalaris arundinacea*), Himalayan blackberry (*Rubus armeniacus*), and yellow archangel (*Lamium galeobdolon*), but include wild cucumber (*Echinocystis lobata*), morning glory (*Convolvulaceae*), Canada thistle (*Cirsium arvense*), English holly (*Ilex aquifolium*), jewelweed (*Impatiens capensis*), and Japanese knotweed (*Reynoutria japonica*).

5. **Animals** [\[help\]](#)

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.

- Birds: hawk, heron, eagle, songbirds, other:
- Mammals: deer, bear, elk, beaver, other:
- Fish: bass, salmon, trout, herring, shellfish, other: mountain whitefish (*Prosopium williamsoni*)

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

There are no ESA-listed species, critical habitats, or Essential Fish Habitat (EFH) in the vicinity of the project site, nor will any be affected by the project activities.

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

There are no anadromous fish species within the vicinity of the project site. Chinook, Steelhead, and other anadromous salmonids as well as Bull Trout are limited to the lower Snoqualmie River

below Snoqualmie Falls (3.3 miles downstream). The Falls are a 268-foot natural barrier to fish passage within the Upper Snoqualmie River Basin.

Elk migration occurs throughout the Snoqualmie Valley and a small herd (8-10 individuals) has been seen on the left bank of the river approximately 0.5 miles upstream of the project site. No sign of river crossing has been detected at the project site however.

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

This project has been designed to avoid and minimize direct construction impacts on fish in the Snoqualmie River. Most ground-disturbing actions will occur landward and above the Ordinary High Water Mark (OHWM) of the river channel. In accordance with permit conditions, in-water work will occur during summer low-flow conditions to impact the fewest fish species and life stages possible.

The proposed ELJs will provide significant habitat enhancements, including: larger and more complex interstitial spaces within the structures creating low velocity aquatic habitat and refuge, recruitment of additional larger wood, gravel sorting, scour pool formation, more complex riparian habitat and native vegetation.

The proposed project will remove any invasive plant species, and revegetate all disturbed areas with native riparian and upland species of trees, shrubs and grasses.

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

These are no known invasive animal species on or near the project site.

6. Energy and Natural Resources [\[help\]](#)

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.

Petroleum fuels will be used to operate all construction and watering equipment during construction. Once the project is completed, petroleum fuels will be used to power watering trucks (to water installed vegetation) or portable pumps, if their temporary use is permitted by the Department of Ecology, during hot weather in the summer for up to three years following construction. Once the project is completed and the vegetation is established, no further sources of energy will be needed.

b. Would your project affect the potential use of solar energy by adjacent properties?

If so, generally describe.

No.

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:

Energy conservation features are not applicable and therefore not included in this proposal.

7. Environmental Health [\[help\]](#)

- 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.

The potential for spills of toxic or hazardous materials, and related risks of fire or explosion are limited to the petroleum fuels used for project construction, maintenance and irrigation. A spill prevention plan will be implemented to minimize the risk of spills, response kits will be maintained on site at all times during construction, and excess fuel will not be kept on site.

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

None are known.

- 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.

None are known.

- 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.

As related to the operation of construction vehicles, machinery and equipment, fuel, oil, and hydraulic fluid will be used and may be stored on the project site during construction.

- 4) Describe special emergency services that might be required.

The need for special emergency services is not anticipated. All work will be conducted in accordance with site-specific health and safety plans required by King County and/or construction contractors.

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

Best management practices such as fuel containment and a spill response plan will be used during construction to reduce and control environmental health hazards.

b. Noise

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

Minimal noise exists at the site vicinity. There is moderate vehicle traffic on adjacent and nearby rural roads and occasional noise from park/residential maintenance activity (e.g., lawn mowing) on the surrounding properties. None of these noises will affect the project.

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.

On a short-term basis, noise will be generated from construction equipment (e.g., truck traffic hauling materials to and from the site, excavator activity, etc.).

Short-term noise impacts will be minimized by limiting the hours of construction in accordance with applicable regulations. Short-term noise impacts will cease upon project

completion; no long-term noise impacts would be created by or associated with the proposed project.

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

Standard mufflers will be used on all construction equipment during regular daytime working hours.

8. Land and Shoreline Use [\[help\]](#)

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 area is situated on portions of two undeveloped King County Parks' parcels and the Snoqualmie River channel (Washington State DNR aquatic lands). The very narrow King County owned parcels are essentially the river bank sandwiched between the Reinig Road right-of-way and the Snoqualmie River. SE Reinig Road (King County) is a regionally important rural arterial connecting surrounding residential communities to the City of Snoqualmie, City of North Bend, and critical access route during river flooding.

Properties adjacent to the project site along the north side of Reinig Road are zoned Rural Residential (RA-10 zoning) and include private residences, pastures and undeveloped forest lands. Adjacent properties along the river upstream and downstream of the project site are natural areas owned by King County Parks. Across the river channel to the south are undeveloped properties owned by the City of Snoqualmie (Three Forks Natural Area) and Puget Sound Energy. These two properties primarily consist of mature riparian vegetation and are subject to flooding, erosion, channel migration and other natural river processes.

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?

No agricultural land will be converted to other uses as a result of this proposal.

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

No.

c. Describe any structures on the site.

Structures on the site include Reinig Road Revetment, an approximately 3,100 lineal foot rock riprap revetment and SE Reinig Road – a two-lane rural arterial county road. Within the project area, two concrete culverts convey surface water runoff and streamflow underneath SE Reinig Road and onto the portion of the revetment to be repaired. Overhead power-lines including 3 power-poles within the project site will be relocated by PSE prior to construction.

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

No. However, PSE owned overhead power-lines and three power-poles will be relocated by PSE prior to construction.

- e. What is the current zoning classification of the site?
RA-5-Rural Area
- f. What is the current comprehensive plan designation of the site?
Forestry, King County Open Space
- g. If applicable, what is the current shoreline master program designation of the site?
Rural, Conservancy
- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
Environmentally sensitive areas on the site include a seismic hazard, landslide hazard, and stream.
- i. Approximately how many people would reside or work in the completed project?
None.
- j. Approximately how many people would the completed project displace?
None.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
None, not applicable.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The proposed project, when completed, will remain compatible with the existing land uses in the area. Moreover, the completed project will enhance aquatic, riparian and terrestrial habitat conditions along the river bank.
- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
No impacts to agricultural and forest lands of long-term commercial significance are anticipated.

9. Housing [\[help\]](#)

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
None.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None.
- c. Proposed measures to reduce or control housing impacts, if any:
None, not applicable.

10. Aesthetics [\[help\]](#)

- 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 are proposed. Not applicable.

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

Over 100 trees (approximately 112) will be removed for the project. This will alter the view for nearby property owners as well as the public using the roadside pullout.

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

Any disturbed areas will be replanted to restore native riparian vegetation within the river corridor. Over 300 native trees and 2,000 native shrubs will be planted within the project area.

11. Light and Glare [\[help\]](#)

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

None.

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

No.

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

None.

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

There is no need for measures to mitigate light and glare impacts.

12. Recreation [\[help\]](#)

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

Informal recreational use includes river viewing, fishing and bird watching. Additionally, river rafters, canoers and kayakers occasionally float by the project site. However, according to the King County 2013 River Recreation Study, this reach of the Snoqualmie River experiences infrequent use by all categories of recreationists.

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

During construction, SE Reinig Road will be closed and all land-based public access to the project site will be restricted. Additionally, the worksite area may also be closed to river-based recreational use during in-river construction activities to ensure public safety.

The project will eliminate an existing informal river access trail, which extends from the vehicle pull-out area down the riverbank to the riprap revetment.

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

In general, King County cannot eliminate the inherent risk that recreational users face when in or around the river. Recreational users still need to take appropriate precautions, pay close attention to river conditions, and make wise decisions consistent with their skills and abilities.

To reduce potential risk to recreational river users, bumper logs will be installed on the upstream face of the upstream-most ELJ deflector structure. Additional measures include placing signs at established recreational entry points. A yellow caution sign will be attached to the upstream ELJ, and additional signs will be placed about 1,500-feet upstream of the first ELJ, cautioning river recreationalists of potentially hazardous conditions.

To reduce impacts to land-based recreational access, the project will retain a vehicle pull-out area adjacent to the south (riverside) road shoulder to allow ongoing passive recreational use (bird watching, river viewing, etc.).

During project design and construction, King County will follow the County's Procedures for Considering Public Safety When Placing Large Wood in King County Rivers, which allows numerous opportunities for the public to provide input during the design process for projects that place wood in King County rivers. During construction, any necessary closure of the river in the project vicinity will be advertised through a variety of means, such as signage at upstream river access points, website alerts, and news releases.

Following construction, impacts to recreation will be reduced or controlled using a post-project management plan. The plan will allow for a flexible response to addressing safety concerns using the least intrusive, yet effective means, such as: education and outreach; public notices; news releases; web alerts; signs posted along the river to alert users to conditions; temporary and/or seasonal use advisories; temporary or seasonal closure (by order of King County Sheriff only); and finally, modification of wood accumulations where safe portage or passage is not possible. The plan will be consistent with the goals of the project and the Natural Wood Policy developed by King County.

13. Historic and cultural preservation [\[help\]](#)

- 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 known places or objects listed on, or proposed for, inclusion on national, state or local preservation registers on or adjacent to the site. The existing revetment meets the age requirement as a potentially historic structure, but is not a rare or unique form, and is therefore not significant.

- 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.

Per the "King County Historic Preservation Program Cultural Resources Review" conducted by Philippe LeTourneau and Todd Scott on February 14, 2019, there are no known archaeological resources in or adjacent to the project area.

- 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.

A "King County Historic Preservation Program Cultural Resources Review" was conducted by Philippe LeTourneau and Todd Scott on February 14, 2019. Per this Review, no

archaeological investigations are necessary, as long as work crews have been trained in recognizing archaeological materials and in the appropriate procedures they should follow in the event any such materials are discovered during the project. Additionally, the project team has consulted with the Snoqualmie Tribe about potential concerns and information they may have about cultural resources at the project site.

- 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.

During construction, King County will follow an Archaeological Resources Monitoring Plan which will describe procedures to be followed if cultural resources are encountered during construction.. The monitoring plan will be reviewed and approved by the US Army Corps of Engineers to ensure compliance with Section 106 of the National Historic Preservation Act during permit review.

14. Transportation [\[help\]](#)

- 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.

The project site is accessed via SE Reinig Road (King County ROW), which is a critical access route (especially during river flooding) between the City of Snoqualmie, City of North Bend, and nearby residential neighborhoods.

- 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?

No public transit is available at the site. King County Metro bus routes 208 and 628 go down State Route 202 in Snoqualmie, approximately 1.5 miles from 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?

As a result of re-grading the riverbank to a more stable slope, the project will reduce the existing informal vehicle pull-out area adjacent to the road shoulder from approximately 2,500 square feet to approximately 800 square feet.

- 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).

No.

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

No.

- 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?

None.

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.
No, not applicable.

h. Proposed measures to reduce or control transportation impacts, if any:
Once the construction is completed, there will be no impact on transportation. A full closure of Reinig Road during construction will be required. The project team has communicated with King County Roads, City of Snoqualmie and City of North Bend regarding the temporary road closure. These organizations have not expressed that this should be a significant issue. Per the guidance of North Bend, the County will also conduct outreach to the Snoqualmie Valley School District and Snoqualmie Valley Transportation in early 2020 regarding the expected temporary closure of SE Reinig Road. The County will continue to coordinate with each of these organizations regarding the road closure status approaching and during construction in order to address and mitigate transportation impacts.

15. Public Services [\[help\]](#)

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.

b. Proposed measures to reduce or control direct impacts on public services, if any.
There will be no impact on public services.

16. Utilities [\[help\]](#)

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

f. 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.

No utilities are proposed for the project. Proposed utility work is limited to Puget Sound Energy relocating existing overhead power lines to the north side of the road in advance of construction activities.

C. Signature [\[HELP\]](#)

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: _____

Name of signee _____

Position and Agency/Organization _____

Date Submitted: _____

Note: The finished project will emit no GHGs aside from those occurring in the environment by natural processes. All emissions are therefore related to construction of the proposed project.

Distance of project site from Renton Shops. Actual trip origins and distances will depend upon the construction contractor chosen: 24.4 miles

Estimated days of construction activity:

<u>Vehicle</u>	<u>Miles/hours</u>	<u>Rate</u>	<u>fuel used</u>	<u>Em. Coef.</u>	<u>Emissions</u>	<u>Tons CO₂e</u>
Pickup Trucks	12420 miles	20.7	600	19.564	11738.4	5.326
Pickup Trucks	12420 miles	20.7	600	19.564	11738.4	5.326
Pickup Trucks	12420 miles	20.7	600	19.564	11738.4	5.326
Pickup Trucks	12420 miles	20.7	600	19.564	11738.4	5.326
Pickup Trucks	12420 miles	20.7	600	19.564	11738.4	5.326
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Dump Trucks	2400 miles	4	600	22.384	13430.4	6.094
Tracked Excavators	216 hours	6.3	1360.8	22.384	30460.15	13.820
Tracked Excavators	216 hours	6.3	1360.8	22.384	30460.15	13.820
Tracked Excavators	216 hours	6.3	1360.8	22.384	30460.15	13.820
Crane 125 Ton	216 hours	9.25	1998	22.384	44723.23	20.292
Heavy Equipment Transport	488 miles	1.9	256.84	22.384	5749.2	2.609
Vibratory hammer	30 hours	4.3	129	22.384	2887.54	1.310
Soil Compactor	90 hours	5	450	22.384	10072.8	4.570
TOTAL:					240364.39	109.058

Carbon Sequestration

Over 300 trees will be planted as part of this project. Of these, 30 are categorized as moderately-growing hardwoods, 120 as fast-growing hardwoods, and the remaining 150 as moderately-growing conifers. The carbon sequestration rates of these trees was calculated using data tables from the U.S. Department of Energy, Energy Information Administration.

Using these data tables, the proposed plantings (assuming 80% survival rate) will sequester **96.77 pounds (0.044 metric tons) of carbon 35 years after planting.**