



King County

## ENVIRONMENTAL CHECKLIST

---

### PORTER REACH RESTORATION PROJECT

---

#### *Purpose of the Checklist:*

The State Environmental Policy Act (SEPA), Chapter 43.21 RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

#### *Instructions for Applicants:*

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write “**do not know**” or “**does not apply.**” Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

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 a significant adverse impact.

#### *Use of Checklist for Nonproject Proposals:*

Complete this checklist for nonproject proposals, even though questions may be answered “**does not apply.**” In addition, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (PART D).

For nonproject actions, the references in the checklist to the words “**project,**” “**applicant,**” and “**property or site**” should be read as “**proposal,**” “**proposer,**” and “**affected geographic area,**” respectively.

**A. BACKGROUND**

1. *Name of the proposed project, if applicable:*

PORTER REACH RESTORATION PROJECT

2. *Name of Applicant:*

King County Department of Natural Resources and Parks  
Water and Land Resources Division (WLRD)

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

Fauna Nopp, Project Manager  
King County Water and Land Resources Division  
201 South Jackson Street, Suite 600  
Seattle, WA 98104-3855  
Phone: 206-263-6319  
Fax: 206-296-0192

4. *Date checklist prepared:*

May 2016

5. *Agency requesting checklist:*

King County Department of Natural Resources and Parks  
Water and Land Resources Division (WLRD)

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

The project will be constructed during the summer of 2017. Planting will occur during the fall and winter of 2017/2018.

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

There are no plans for future additions, or expansions. Further activity is limited to maintenance and corrective actions to ensure project performance and public safety.

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

1. Porter Reach Restoration Basis of Design Report, King County Water and Land Resources Division. March 2016.

2. Porter Levee Setback Project Cultural Resources Survey, December 2013. ICF International.

3. Wetland Biology Report, Porter Levee Setback Project CIP 1114123, August 15, 2013, King County Water and Land Resources Division.

4. Middle Green River Levee Setback Feasibility Study, King County Water and Land Resources Division, 2013.

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 permits or other authorizations for other proposals are currently pending.

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

- Clean Water Act Section 404 Permit (U.S. Army Corps of Engineers)
- Endangered Species Act (ESA) Section 7 Consultation (National Oceanic and Atmospheric Administration Fisheries and United States Fish and Wildlife Service)
- National Historic Preservation Act Section 106 Review
- National Pollutant Discharge Elimination System (NPDES) Permit for Construction (Washington State Department of Ecology)
- 33 USC 408 Approval to alter U.S. Army Corps of Engineers Civil Works Project
- Coastal Zone Management Consistency
- Section 401 Water Quality Certification (Washington State Department of Ecology)
- Washington Department of Fish and Wildlife Hydraulic Project Approval
- King County Clearing and Grading Permit
- Shoreline Management Substantial Development Permit Exemption (Washington State Department of Ecology)
- King County Flood Hazard Certification
- Aquatic Use Permit (Washington State Department of Natural Resources)
- Procedures for Considering Public Safety When Placing Large Wood in King County Rivers, Public Rule LUD 12-1, King County Ordinance 16581
- Approval Memo for Altering King County Park Division Properties (King County Department of Natural Resources and Parks)
- Consistency with King County Comprehensive Plan Policy R-647
- Aquatic Habitat Restoration Project Approval: King County Code 21A.24.381

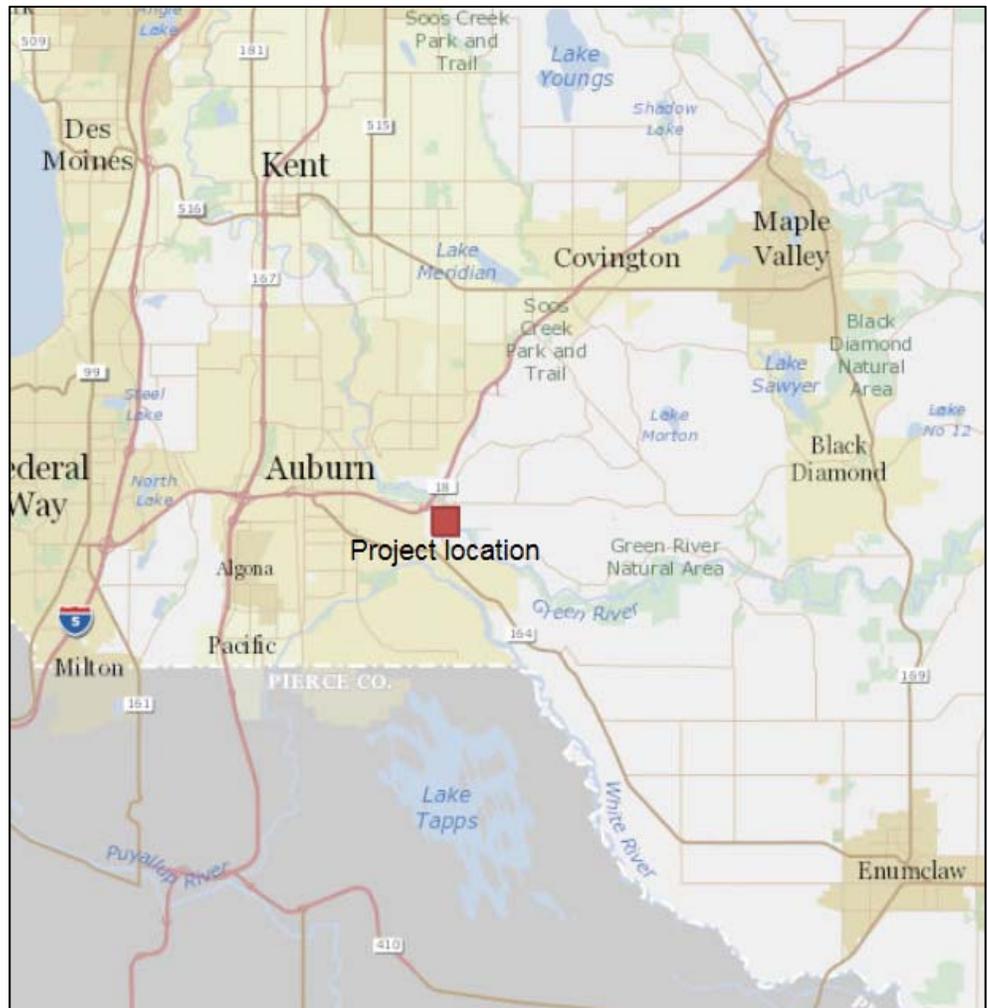
11. *Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site.*

The Porter Reach Restoration Project is a proposed levee removal and setback project on the Green River (RM 34) near Highway 18 and Soos Creek (Figure 1). The rock face and toe of a 900-foot section of the Porter Levee will be removed, and the top five feet of the levee will be excavated. The upstream part of the existing levee will remain in place to deflect the river away from private property to the south. A 1,000-foot-long bioretment and a log deflector will be constructed to protect SE Green Valley Road. Bank wood clusters will be installed to roughen and harden the left bank along the Road. A 1,000-foot-long backwater channel will be created in the floodplain interior. Logjams will be built in the floodplain. Native vegetation will be planted and snags will be installed. Weeds will be controlled. A culvert will be installed on the private property to the south to redirect drainage from the west side of the project site to the oxbow pond on the eastern side, improving flood conveyance. The goal is to improve the survival of threatened salmon and trout by allowing the river to naturally erode its banks, form logjams, scour pools, and make side channels. The project will maintain the existing level of protection to private properties, infrastructure, and roadways. The project will comply with King County large wood placement policies and ordinances.

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 plan, 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.*

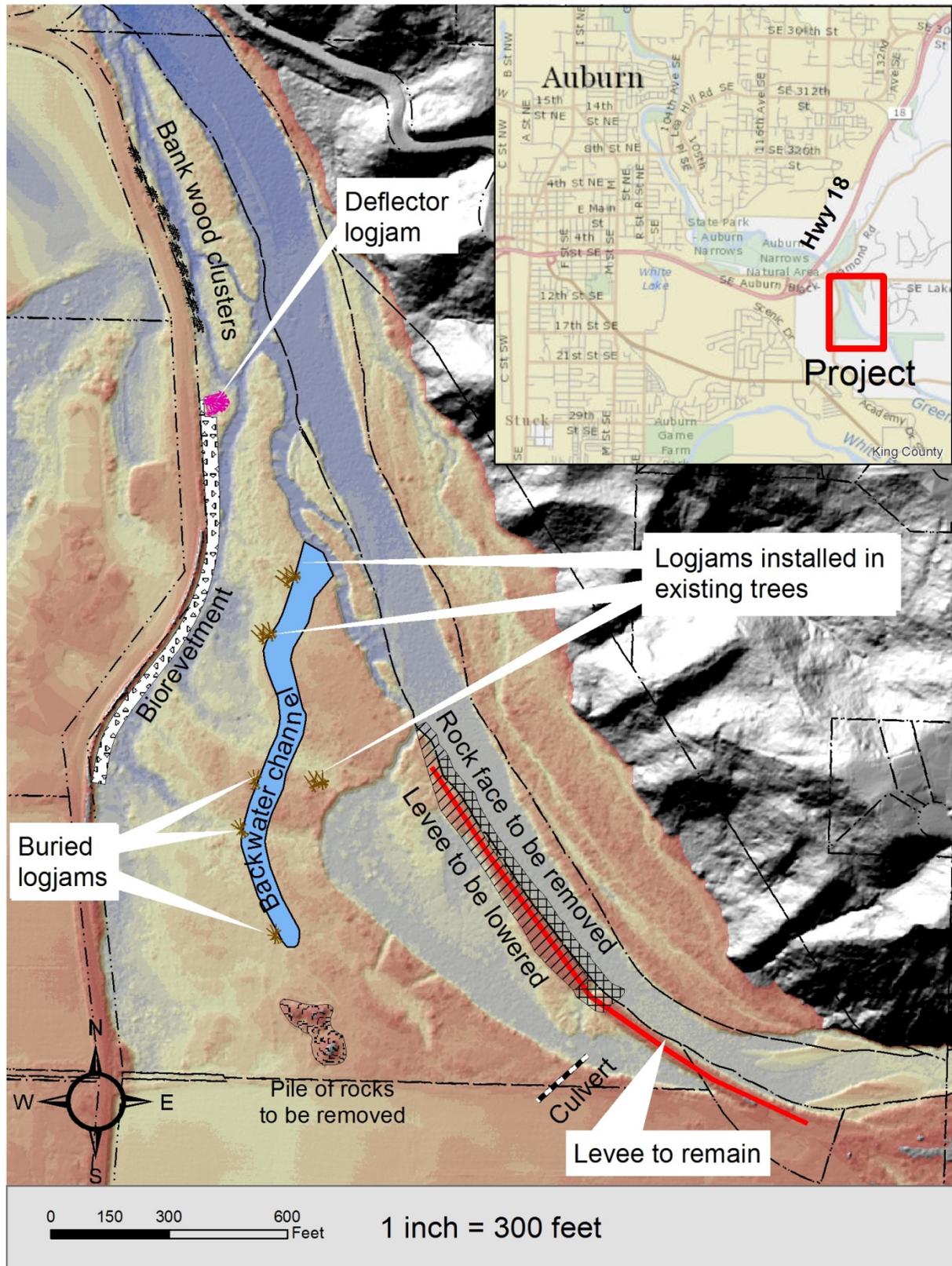
The Porter Reach Restoration Project (Porter Project) is located in rural King County near the City of Auburn, Washington (Figure 1). The project site is on the west bank of the Green River between RM 33.5 and 34.1 in Section 21, Township 21 N and Range 5 E. The site is immediately upstream from the Auburn Narrows Natural Area, Highway 18, Soos Creek on the east bank, and a boat launch/take-out on the west bank.

The topography of the project site is relatively flat in the valley bottom, with steep slopes of the valley wall to the northeast (Figure 2). Channels and swales are located throughout the project area.



**Figure 1. Site and vicinity plan.**

Project features include removal of the existing levee, construction of a bioretment, logjam installation, backwater channel construction, placement of bank wood clusters, and removal of an existing rockpile (Figure 2).



**Figure 2. Site plan, vicinity map, and topography plan and vicinity map. All labeled features are to be constructed or removed unless otherwise stated. Topography is represented as a digital terrain model based on LIDAR data; the upland valley walls are represented as a shaded relief map for simplicity.**

## B. ENVIRONMENTAL ELEMENTS

### 1. Earth

- a. *General description of the site (underline one):* The project is in a flat river valley bottom.
- b. *What is the steepest slope on the site (approximate percent slope)?* Sideslopes on the embankment along SE Green Valley Road are approximately 27%.
- 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 prime farmland.*

The Porter Levee site is located in an alluvial valley incised into surrounding uplands comprised primarily of glacial deposits. Alluvial deposits of sand, silt and gravel were encountered to the depth explored in all of the borings and test pits conducted within the project area except those in close proximity to the downstream right bank valley wall. Two borings in that location encountered glacially consolidated clay at 15.5 to 17.5 feet below the surface.

Five soils types are located within the study area including Newberg silt loam, Oridia silt loam, Pilchuck loamy fine sand, Puyallup fine sandy loam, and Riverwash.

- d. *Are there surface indications or history of unstable soils in the immediate vicinity?*  
There are no indications of unstable soils.
- e. *Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of fill.*

Fill will be necessary for backfill and erosion protection. Approximately 6,100 cubic yards of angular rock fill will be used to construct the biorevetment (setback levee) along SE Green Valley Road. Angular rock will be delivered from off-site. In addition, approximately 40 boulders are needed to ballast the bank wood clusters.

Approximately 37,000 cubic yards of excavation are planned for the following actions:

- To lower the top of the existing levee along an approximately 900-foot portion of its length.
- To construct the 1,000-foot-long backwater channel.
- To install the buried launchable toe for the biorevetment.

An estimated 31,500 cubic yards will be hauled off-site to an approved disposal location.

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

Yes. Bank erosion is a primary goal of the project, because it is a critically-important natural disturbance process that contributes to salmon habitat. Bank erosion is expected to primarily occur during and immediately after winter floods, when background turbidity and sediment loads in the river channel are normally high.

Erosion from construction impacts like clearing and grading could also result, but would be minimized through the use of temporary erosion and sediment control Best Management Practices.

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

None.

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

Although channel migration and floodplain sedimentation are intended outcomes, the following practices will be used to assure that water quality is maintained during construction:

- A. Excessive channel migration will be prevented by leaving a portion of the levee core in place, for the river to gradually erode and by leaving floodplain forest as intact as possible. The placed logjams may also help to locally moderate channel migration rates.
- B. A biorevetment will be constructed along Green Valley Road to contain the channel migration within the Porter Levee Natural Area and to protect infrastructure and private property.
- C. Turbidity in the river will be monitored during in-water construction work to make sure levels are within permitted limits.
- D. All necessary and appropriate erosion control Best Management Practices (BMPs) will be used during construction to limit sediment runoff from access roads, work areas, and stockpiles during rainstorms.
- E. Existing native vegetation cover will be preserved by limiting clearing to only what is necessary to implement the project; grading areas will be revegetated after grading is complete.
- F. When floods erode the streambanks, sediment will enter the river during periods of elevated background turbidity. Project-related increases in turbidity will peak in the first few floods after construction and then diminish to typical levels for unprotected river banks.

**2. Air**

*a. What types of emissions to the air would result from the proposal (for example, dust, automobile, odors, industrial wood smoke, greenhouse gases) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.*

Air quality will be impacted by greenhouse gas (GHG) emissions produced by vehicles and equipment during project construction. Internal combustion engines primarily emit carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. The global warming potential (GWP) of these compounds is measured in “carbon dioxide equivalents,” or CO<sub>2</sub>e, which converts the GWP of various gasses into their equivalent in CO<sub>2</sub>. Carbon dioxide emissions can be approximated from projected fuel consumption, transportation distances, and duration of use, using formulae developed by the Energy Information Administration (EIA) of the U.S. Department of Energy. The project is expected to discharge 129 tons of CO<sub>2</sub>e over 20 days.

Emissions will be offset by planting native trees and shrubs that sequester CO<sub>2</sub>. Carbon sequestration caused by planting of native trees and shrubs should offset emissions from construction of the project within 19 years of planting, and continue sequestering carbon for decades to centuries. The finished project will emit no GHGs aside from those naturally occurring in the environment; all emissions are related to construction of the proposed project.

The Greenhouse Gas (GHG) Emissions Worksheet is attached to the end of this checklist.

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

There are no off-site sources of emissions or odor that may directly affect this proposal. The proposal may be indirectly affected by off-site greenhouse gas emissions that cause global climate change and associated changes in watershed hydrology. Climate change is expected to alter the flow regime of the Green River over coming decades. Heavy rainfall events are expected to become more severe, and more precipitation will fall as rain instead of snow, both of which will increase flood risk (Climate Change Impacts Group, 2016). Specifically, the discharge level of the 100-year recurrence interval flood (unregulated) in the Green River is expected to increase by 32% by the 2080s. Summer minimum flows are expected to drop by 16% over the same period, resulting in 73 miles of river that exceed the tolerances of juvenile salmon. These changes may be moderated by Howard Hanson Dam.

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

Construction will comply with Puget Sound Clean Air Agency regulations. Vegetation clearing will be minimized. Graded and disturbed areas will be replanted with native vegetation where appropriate. Approximately 1,000 trees will be planted in the first winter after construction.

Engines will not idle unnecessarily and will be kept in proper working order with all filters and other emission control devices functional.

### 3. Water

a. Surface:

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 the type and provide names. If appropriate, state what stream or river it flows into.

Yes, the site contains surface water bodies including approximately 3,600 linear feet of mainstem river channel and adjacent channels, and four wetlands (Figures 3 and 4).

- The Green River is a mainstem river (SAO Stream Class 1;

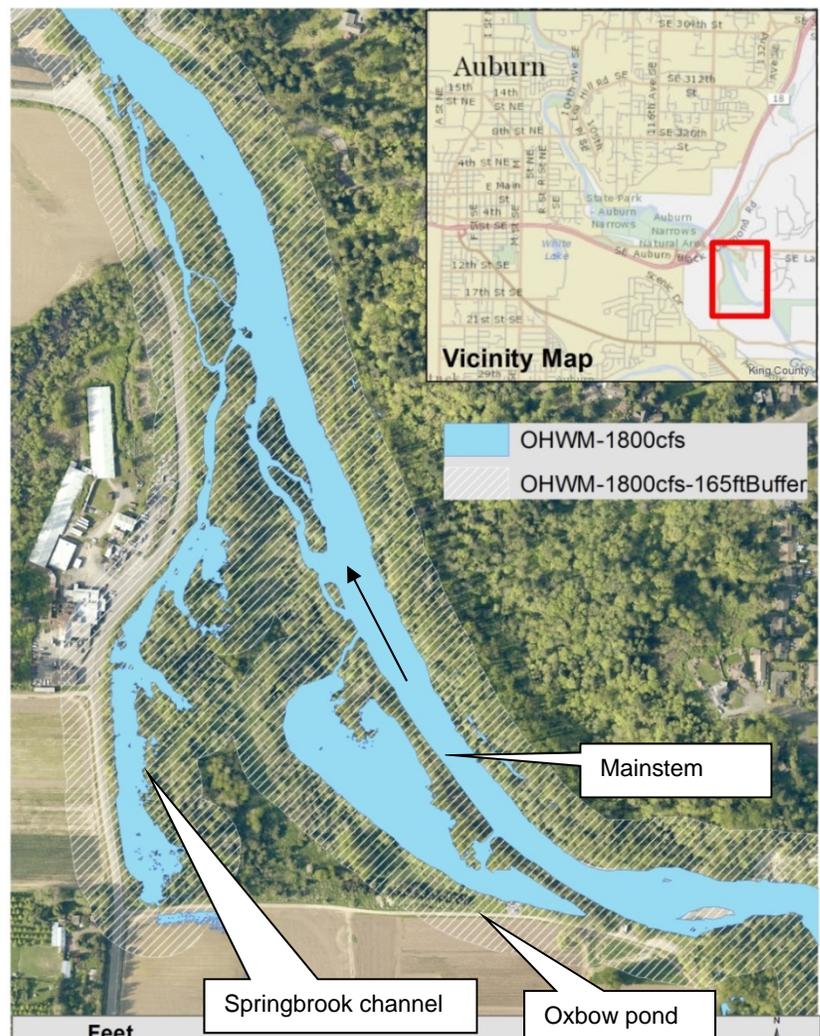
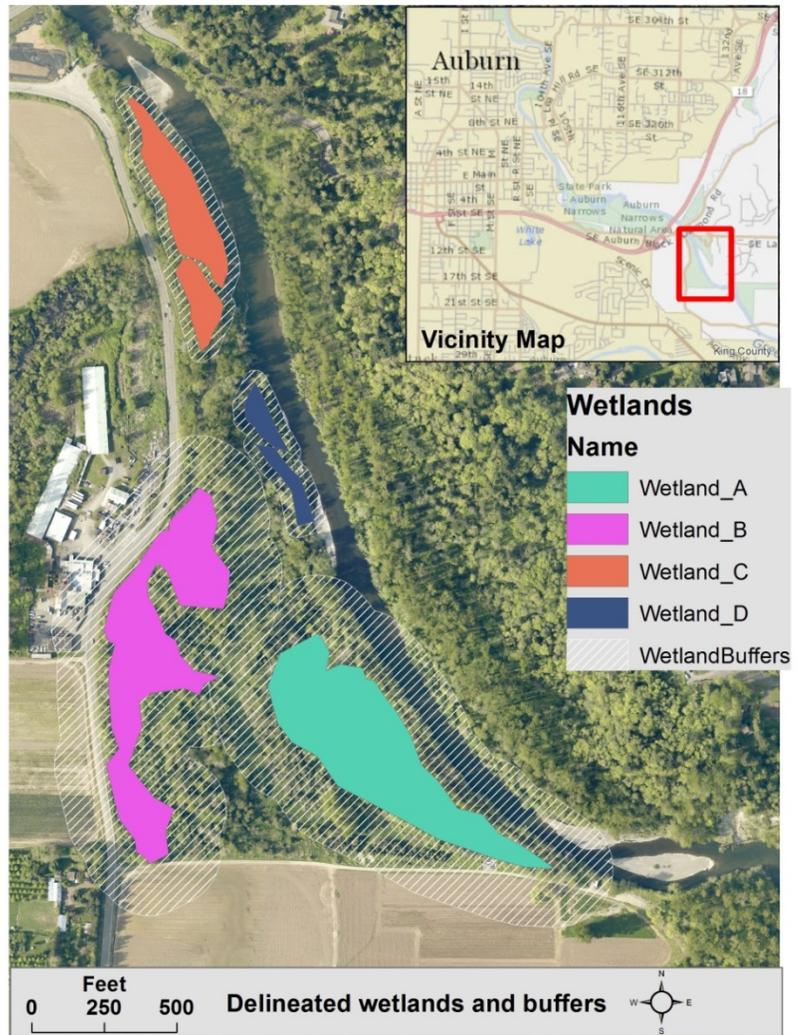


Figure 3. Green River and associated aquatic features within the ordinary high water mark (OHWM).

WRIA Tributary 09.1030) approximately 130 feet wide in the project reach (Figure 3). A springbrook channel—formerly the mainstem river in the early 1900’s—is adjacent and parallel to the SE Green Valley Road. A springbrook channel contains channelized flow of ground water emerging from the subsurface aquifer (hyporheic zone) into flood channels (Stanford et al. 2006). The springbrook channel is associated with Wetland B, which is an oxbow pond created when the levee was built across the mainstem of the river in 1961.

- Wetland A (5.56 acres) is a Category I wetland located behind the Porter Levee on the left (west) bank of the Green River (Figure 4). It is a riverine wetland classified as palustrine forested scrub-shrub deciduous and palustrine aquatic bed. It is primarily supported by surface water. It contains an oxbow pond.
- Wetland B (5.12 acres) is a Category I wetland located in the southwest corner of the site (Figure 4). It is a riverine wetland classified as palustrine forested scrub-shrub deciduous and palustrine aquatic bed. It is primarily supported by ground water, but also a backwater channel connected to the Green River and by flood runoff through a 24-inch culvert draining fields to the south. It contains a spring brook channel.



**Figure 4. Delineated wetlands and buffers.**

- Wetland C (2.27 acres) is a Category III riverine wetland at the north end of the site, consisting of two patches separated by a narrow channel (Figure 4). Hydrology is supported by the river. It is classified as a palustrine scrub-shrub deciduous wetland type.
- Wetland D (1.67 acres) is a Category III riverine wetland similar to Wetland C (Figure 4).

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 project will require work in or adjacent to each of the described waters during summer low flow conditions (Figure 5). In-water work will last for approximately two months.

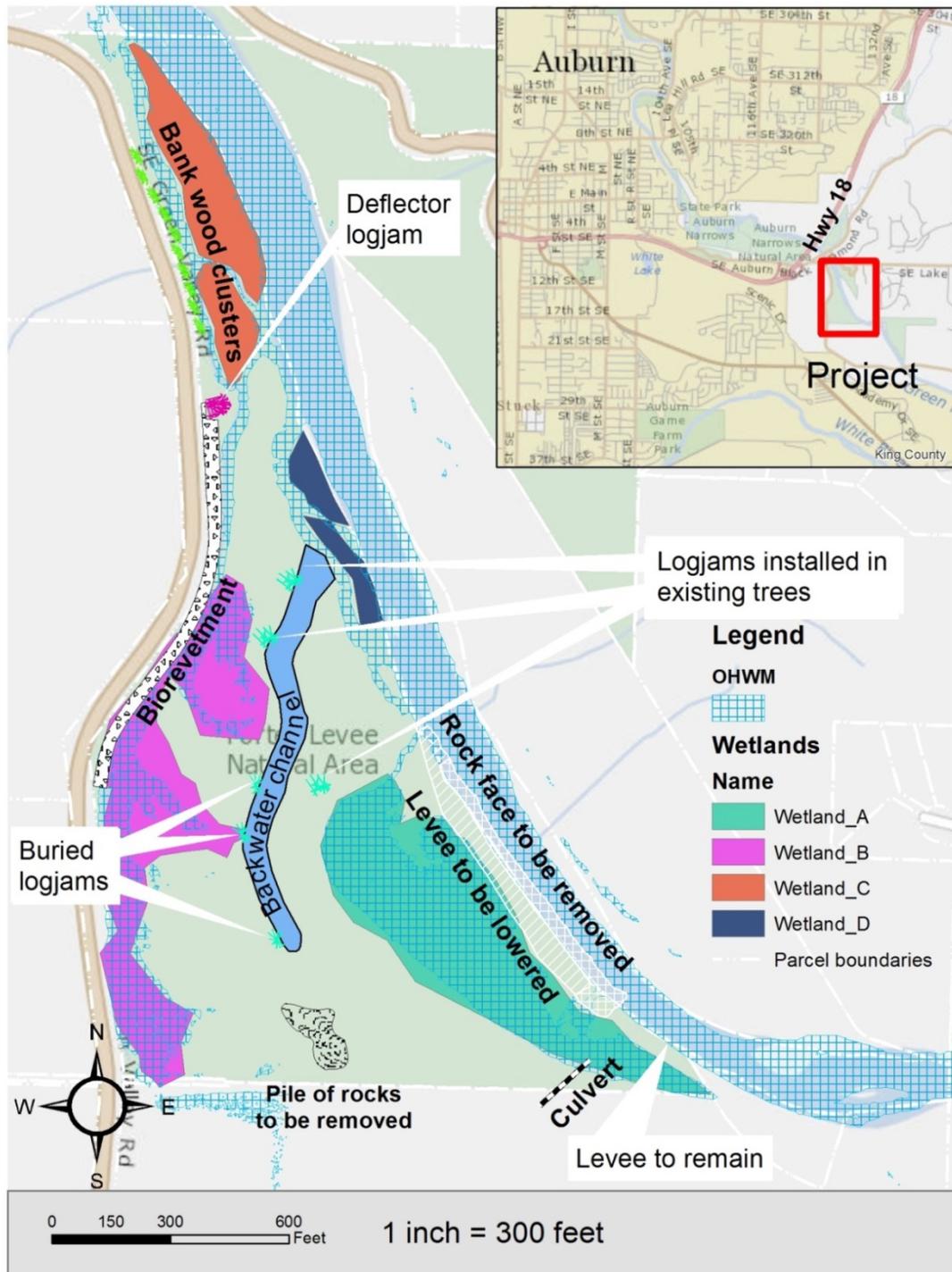


Figure 5. Proximity of work to river, oxbow pond, springbrook, and wetlands.

Tracked excavators (or similar) will be used to remove angular rock from the toe and face of the existing levee, and to remove several feet of fill from the top of the levee. This work will help to restore floodplain functions. Heavy equipment (e.g., excavators and dozers) will also be used to excavate a backwater channel in the floodplain interior, adjacent to Wetlands A, B, and D. The outlet of the channel will enter a side channel to the Green River. The backwater will expand the OHWM and create new wetland areas. King County plans to apply for a 401 Water Quality Certification from the Department of Ecology. This permit will stipulate conditions for minimizing water quality impacts from in-water work in the Green River and associated channels.

Logjams will be embedded in the floodplain below existing grade, or laced between existing trees. Three of the logjams will be embedded by excavating a hole in the floodplain, placing the wood, and backfilling to approximate existing grade. This work will occur adjacent to the river channel and wetlands, but will not require any in-water work, or wetland impacts. Placing logjams will improve the ecological function of the floodplain.

Heavy equipment will be used to construct a new biorevetment to protect Green Valley Road from flood and erosion hazards. In-water work will be required in the spring brook channel to install a launchable rock toe below existing grade. Angular rock will be placed within the ordinary high water mark (OHWM) in the spring brook channel along SE Green Valley Road, associated with Wetland B.

Bank wood clusters will be placed along the eastern edge of the Green Valley Road to deter bank erosion and avulsion. No excavation or in-water work is required. Boulders will be placed adjacent to or within OHWM of the Green River.

A deflector logjam will be built at the downstream end of the biorevetment. In-water work is required in the springbrook and backfill will be placed inside the structure, for ballast.

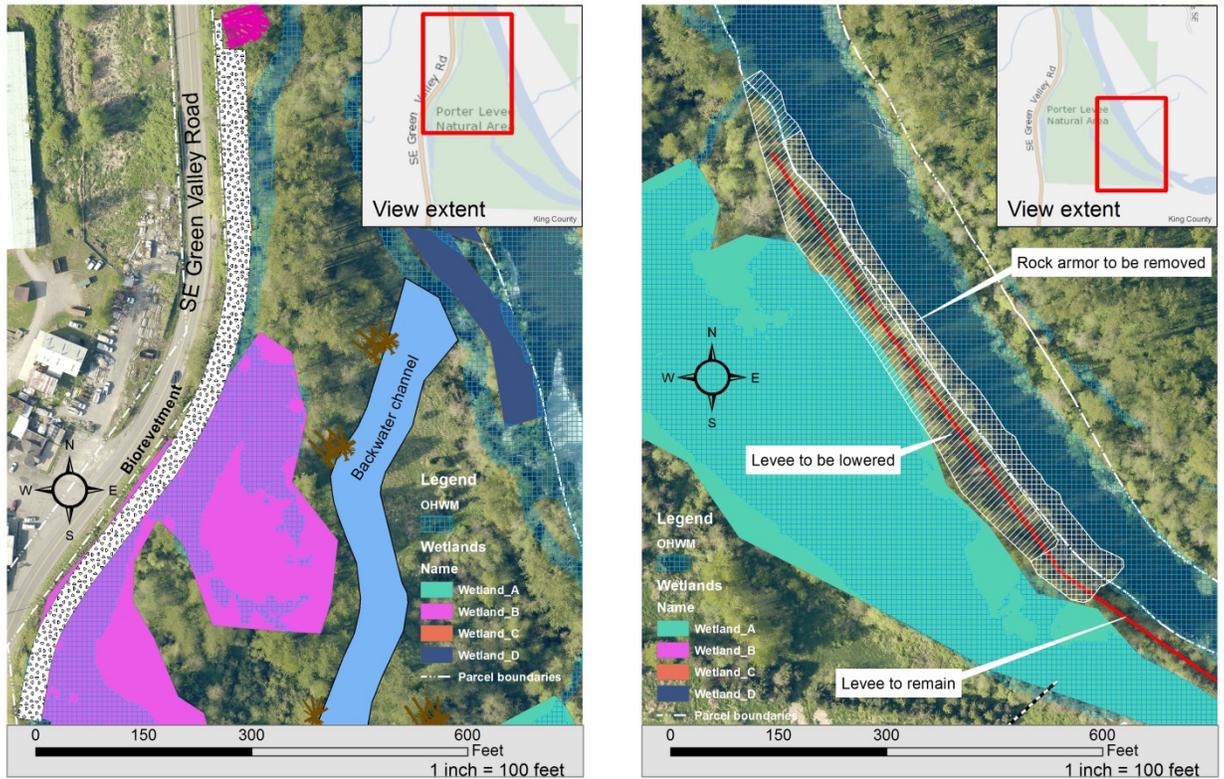
- 3) *Estimate the amount of fill and dredge material that could be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.*

#### **Levee removal**

- *Fill removal from surface water or wetlands:* Approximately 3,300 cubic yards of large angular rock will be removed from the face of the existing levee over an area of approximately 17,000 square feet (0.39 acres; Figure 6).
- *Fill placement in surface water or wetlands:* None.

#### **Biorevetment construction**

- *Fill removal from surface water or wetlands:* Approximately 11,500 cubic yards will be excavated over an area of approximately 20,000 square feet (0.46 acres; Figure 6).
- *Fill placement in surface water or wetlands:* Approximately 5,500 cubic yards of large angular rock, much of which is a rock toe buried below the ground surface. The area affected is approximately 20,000 square feet (0.46 acres; Figure 6).



**Figure 6. Close-up of areas where work will take place within, over, or adjacent to the river, oxbow pond, spring brook, or wetlands.**

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

Surface water withdrawals are not anticipated, but the isolation of the work area may be required for work on the existing levee and the bioretment along the road. For example, the Green River may need to be locally diverted away from the work site while rip-rap is being removed from the existing levee, using gravel-filled bulk bags or a turbidity curtain. In the event that turbid water needs to be pumped out and dispersed on land, screened pumps would be used to move turbid water to a stable location providing adequate dispersal or water quality improvement to prevent turbid runoff from entering wetlands or aquatic areas. Construction of the bioretment along the SE Green Valley Road may also require isolation and temporary dewatering of the work area where the rock toe is being installed below grade. If so, bulk bags, temporary sheet piles, or similar measures would be used, in conjunction with a screened pump system.

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

Yes, the entire Road project is located within the 100-year floodplain of the Green River.

- 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 waste material will be discharged to surface or groundwater.

b. *Ground:*

- 1) *Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities, if known.*

No. This project will not withdraw from or discharge 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.*

No waste material will be discharged to groundwater.

c. *Water Runoff (including storm water):*

- 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.*

The well-drained alluvial soils on the project site will allow most rain to infiltrate or disperse on site and limit stormwater runoff from leaving the work site. No impervious surfaces will be added to the site.

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

No.

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

See **Section 3a (4)** above.

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**

a. *Check or underline types of vegetation found on the site:*

- Deciduous trees: alder, maple, black cottonwood, big leaf maple
- Evergreen trees: Douglas fir, western red cedar, Sitka spruce
- Shrubs: Red twig dogwood, Pacific ninebark, salmonberry, snowberry, vine maple
- Grass: Reed canary grass
- Pasture: Pasture grasses
- Crop or grain
- Wet soil plants:
- Water plants:
- Other types of vegetation: Knotweed, Himalayan blackberry, English ivy, clematis.

## Wetland

Wetland emergent plants include reed canary grass (*Phalaris arundinacea*). The wetland shrub layer is dominated by Pacific willow (*Salix lucida*), Sitka willow (*Salix sitchensis*), red-osier dogwood (*Cornus sericea*), salmonberry (*Rubus spectabilis*), and baldhip rose (*Rosa gymnocarpa*). The forested wetland canopy is dominated by black cottonwood (*Populus balsamifera*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), and big leaf maple (*Acer macrophyllum*).

## Upland

The upland canopy is dominated by black cottonwood (*P. balsamifera*), red alder (*A. rubra*), Oregon ash (*F. latifolia*), and big leaf maple (*A. macrophyllum*). Invasive species such as Himalayan blackberry and reed canarygrass are common on site.

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

Between 100 and 200 mostly deciduous trees and shrubs will be cleared to complete the levee removal and to install a biorevetment along SE Green Valley Road. Approximately five to ten percent of these are large, mature trees. All of the felled trees will be placed at the project site for habitat improvement. Approximately 5,000 trees and shrubs will be planted for the project.

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

There are no threatened or endangered plant species known to exist on the site. The Washington Department of Natural Resources' (DNR) Natural Heritage Information System indicated no listed species are found on the subject properties or nearby.

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

High visibility flagging or fencing will be installed to protect existing native trees and shrubs. Once construction is completed, disturbed areas will be revegetated with native plants. Plants will not be installed where the levee rock was removed, however, to ensure it can be eroded by the river. Approximately two to three acres of the project site within the floodplain and riparian/wetland buffers will be revegetated and maintained after construction to restore native riparian plant communities to areas currently dominated by invasive, non-native plants.

## 5. Animals

- a. *Check or underline any birds or animals that 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, elk, beaver, coyote, other  
 Fish: salmon, trout, other

This reach of the Green River is used by Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*O. kisutch*), chum salmon (*O. keta*), pink salmon (*O. gorbuscha*), rainbow trout (*O. mykiss*), cutthroat trout (*O. clarki clarki*), whitefish (*Prosopium williamsoni*), and a variety of other fish species for spawning and rearing. The wetlands and the forested river margin provide habitat to amphibians and a variety of terrestrial wildlife such as, coyote, deer, elk, river otter, muskrat, beaver, and small rodents.

Numerous snags (dead trees) and mature trees in the project vicinity provide excellent habitat for raptors such as bald eagles, osprey, hawks and cavity-nesting and insect-eating birds. Waterfowl such as ducks and geese use the wetlands and the Green River within the project area. The project site is located along the Pacific Flyway.

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

Puget Sound Fall Chinook salmon (*O. tshawytscha*) and steelhead trout (*O. mykiss*) are known to be on or near the site. Bull trout (*Salvelinus confluentus*) are not known to be on or near the site. Although native char were once present in the Green River ([King County 2002](#)), they are now either absent or extremely rare. The last known sighting was in 1994, when a single native char was observed in the mouth of the Duwamish River, 32 miles downstream from the project site.

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

Fish migrate through the project area. The site is also located on the Pacific Flyway used by waterfowl and other migratory bird species.

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

The primary purpose of the project is to enhance habitat conditions and riverine and floodplain functions and processes. The project is expected to increase habitat diversity, quantity, and quality as the channel migrates and creates new aquatic and riparian landforms and riverine wetlands. Native plants, snags, and downed wood will be installed, providing habitat for insects, birds, ungulates, and small mammals.

## 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 will require no energy.

- 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:*

Not applicable.

## 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.*

There is a very small risk of a hydraulic fluid or other fuel spilling or leaking from heavy equipment.

- 1) *Describe special emergency services that might be required.*

None.

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

Maintenance and refueling of equipment will be completed in designated areas set up to prevent pollutant spills. Spill response kits will be on site to ensure accidents are promptly addressed.

b. Noise:

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

Traffic noise is present at the project site, but will not affect the project.

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

Heavy equipment operation will cause temporary noise increases between 0700 and 1900 hours on weekdays and between 0900 and 1700 hours on Saturdays. No noise is anticipated to be produced on Sundays. The completed project will not change existing noise levels.

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

Construction activities will comply with the provisions of the King County Noise Ordinance (Ordinance No. 3139). Equipment operation will be limited to the hours of 7 a.m. to 7 p.m. on Monday through Friday and 9 a.m. to 5 p.m. on Saturdays.

## 8. Land and Shoreline Use

- a. *What is the current use of the site and adjacent properties?*

The project site is owned by King County and managed as ‘ecological land’ (Porter Levee Natural Area) by the Natural Resource Lands Program (King County Dept. of Natural Resources and Parks). The management goals for these lands are to conserve and enhance ecological value and to accommodate passive recreational use. Low-impact activities are welcomed, including walking, nature observation, or fishing. King County purchased the property on the left (west) bank in 1998 and the right (east) bank in 1999. The left bank parcel, where the proposed work will occur, has a restriction in the statutory warranty deed that the property be used in perpetuity for habitat development.

The areas adjacent to the site represent varied land uses. The Green River is used for recreational fishing and boating. The property to the south is privately-owned farmland. Across the river, and south of the site, is the publicly-owned Neely Natural Area. The property to the west –across the road—contains a retail butcher and convenience store. The property to the east is a natural area owned by the public of King County. The northern property contains a boat launch/take-out owned and managed by the Washington Dept. of Fish and Wildlife.

- b. *Has the site been used for agriculture? If so, describe.*

Aerial photos from 1936 show that the Porter Levee Natural Area was used to grow crops (presumably hay). Haying appears to have expanded since then, based on aerial photos from the 1950’s, 1970’s, and 1990’s, and based on conversations with neighboring property owners.

- c. *Describe any structures on the site.*

King County constructed the Porter Levee on the site in 1961. The levee is approximately 1,700 feet long. The riverward face of the levee is covered in large angular rock. The levee core is composed of streambed gravels and heavily vegetated with trees and shrubs less than 55 years old. The levee was damaged in the 1980's and repaired by the U.S. Army Corps of Engineers (USACE). Floods breached the downstream portion in 1990 and 1996, producing small side channels that persist today.

A raised berm of unknown origin, design, or composition runs along the southeastern portion of the project site, next to and parallel with the SE Green Valley Road.

No other structures are present on the site.

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

Yes. The restoration project will remove approximately 900 feet of levee/revetment.

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

The project site is zoned A-10 (agricultural area, one dwelling unit per 10 acres) on the left bank and RA-10 (rural area, one dwelling unit per 10 acres) on the right bank.

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

King County Open Space (left bank and portions of the right bank) and Rural Area (right bank). The project site is within the Upper Green River Agricultural Production District.

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

The left bank and portions of the right bank are designated 'Natural Shoreline.' Most of the right bank is 'Conservancy Shoreline.'

- h. *Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.*

Yes. The left bank is mapped as a 'seismic hazard' according to King County's sensitive area map folio and contains four wetlands (described above in Section Three: Water). The right bank is mapped as 'erosion hazard,' The entire project area is a Class 2 critical aquifer recharge area and within the 100-year floodplain of the Green River. The entire project site is in a 'severe' or 'moderate' channel migration hazard status. The National Wetland Inventory indicates that one wetland with a rating of 4 exists in the Porter Levee Natural Area. King County has delineated four wetlands (A-D) within the project boundaries that are outside the ordinary high water mark of the Green River. Wetlands A and B have been given a Washington State Department of Ecology wetland rating category of I, and Wetland B and C, Category III. Under the King County Critical Areas Ordinance (CAO) the Green River is designated a Type S aquatic area.

- 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:*

Does not apply.

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

**Compatibility with a regional transportation corridor:** The biorevetment, deflector jam, and bank wood clusters will protect private property and the SE Green Valley Road from erosion.

**Compatibility with private farmland:** The project proposes to leave part of the existing levee in place to protect adjacent farmland from erosion. The proposed project will construct a new culvert that is expected to improve drainage and farm productivity. Hydraulic analyses show that the project will not increase the 100-year flood surface elevation on the farm fields, roads, or other private property.

**Compatibility with environmental plans:** The project is identified as MG-17 in the WRIA 9 Salmon Habitat Plan (Habitat Plan; [WRIA 9 Steering Committee 2005]). The Porter Project implements two of the Tier 1 Conservation Hypotheses that form the strategic basis of the Habitat Plan including:

- 1) MG-1 - Protecting and creating/restoring habitat that provides refugia (particularly side channels, off channels, and tributary access) and habitat complexity (particularly pools) for salmon over a range of flow conditions and at a variety of locations (e.g., mainstem channel edge, river bends, tributary mouths) will enhance habitat quantity and quality and lead to greater juvenile salmon residence time, greater growth, and higher survival; and,
- 2) MG-3 - Protecting and restoring natural sediment recruitment (particularly spawning gravels) by reconnecting sediment sources to the river will help maintain spawning, adult holding, and juvenile rearing habitat.

This project was also identified as a priority project in the following plans:

- A) Green/Duwamish River Ecosystem Restoration Study (USACE 2000);
- B) Middle Green River Restoration Blueprint (King County 2006), and;
- C) Middle Green River Levee Setback Feasibility Study (Bowles et al. 2013).

The project is also consistent with the goals of the Critical Areas Ordinance and Shoreline Master program that attempts to maintain and restore important ecological areas.

## 9. Housing

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:*

Does not apply.

## 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?*

Does not apply. No proposed structures protrude above the existing grade, except for three logjams that will be built within existing stands of trees. These will not exceed 20 feet in height.

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

The views could be altered along the footprint of the biorevetment owing to the clearing of existing trees within the footprint of the new structure. This would alter the view next to the road for motorists and for the retail store across the road.

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

Natural materials will be used to construct the biorevetment and the upper portion of the structure will contain native riparian plantings.

## 11. Light and Glare

- a. *What type of light or glare will the proposal produce? During 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. *Describe proposed measures to reduce or control light and glare impacts, if any.*

None.

## 12. Recreation

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

The management goals for Porter Levee Natural area are to conserve and enhance ecological value and to accommodate passive recreational use. Low-impact activities are welcomed, including walking, nature observation, or fishing.

The Green River is also used for instream recreation. Recreational use in the Green River is highly variable among locations, according to a recreation study completed by King County (King County 2013). The study indicates that relatively few people recreate in the river at the Porter project site. For example, observations at the Auburn-Black Diamond Road site (RM 33.4) found that, on average, only

three people float past the site per day in the summer. Roughly three-quarters were adults in tubes without paddles or life vests.

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

The proposed project will enhance most recreational uses by restoring river and floodplain processes in the project area. For example, habitat restoration helps promote recreational fishing by improving fish survival and provides a more natural river environment in which to fish. However, the river may need to be temporarily closed to floating during in-water work. Floating can resume immediately after construction.

Over the long-term, as the river adjusts to levee removal, and logjams begin to form, floating through the reach may become more challenging, even as it becomes more scenic. King County will monitor conditions after the project is completed and will work closely with the King County Sheriff to evaluate and respond to future recreational safety concerns. Protocols are specified in *Procedures for Managing Naturally Occurring Large Wood in King County Rivers*, available on King County's website.

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

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.

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 provides numerous opportunities for the public to provide input during the design process for projects that place wood in King County rivers. During construction, river closures will be advertised through a variety of means, such as signage at upstream river access points, website alerts, and news releases.

Once the project is complete, 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. Historical and Cultural Preservation**

- a. *Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.*

King County hired an archaeological consultant (ICF International) to perform a site-specific assessment of the property to determine if historic and/or cultural resources are present and if the project has the potential to adversely affect such resources on adjacent properties. The consultant researched the archaeology, ethnography, and history of the project area to provide information on

known or probable cultural resources in the project area. The consultant reviewed local, state, and federal sources, and work by previous investigators.

The assessment found no previously recorded cultural resources, no archaeological resources, and no archeological deposits within the APE. The levee itself is ineligible for listing in the NRHP. The potential for encountering historical archaeological deposits is limited.

- b. *Generally describe any landmarks or evidence of historical, archaeological, scientific, or cultural importance known to be on or next to the site.*

Nothing of historical, archaeological, scientific, or cultural importance is known to be on the site. Near the site, there are previously recorded archaeological sites (i.e., pre-contact lithic material scatter and hearth) and historic resources (i.e., Neely Mansion and Patton Railroad Bridge) located within 0.5 and one mile of the APE, respectively. The Green River and vicinity were used extensively for travel, habitat, resource gathering, trade, and socializing between locals of the area.

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

Even though a finding of ‘no historic properties affected’ has been recommended for this project under Section 106 of the NHPA, the following measures are proposed to reduce or control unforeseen impacts, if any:

- Provide cultural resources sensitivity training to the staff that will be performing and overseeing project implementation. This training will help staff recognize potential artifacts while work is underway.
- Develop and implement an unanticipated discovery plan (UDP) for use in the event of a discovery of archaeological deposits or human remains. The UDP will outline protocols for DNRP personnel and its contractors to follow if cultural resources are observed during construction.
- Discuss the possibility of uncovering materials of archaeological or historic or cultural significance and appropriate response procedures during a pre-construction conference with construction crews prior to construction.
- Enlist experts in historic and cultural resource issues to be on-call during construction to evaluate and direct crews should potential resources be encountered.
- Enlist a cultural resources expert to be on site to observe excavations into native soils in any areas previously identified as potentially sensitive.
- Cease work immediately if cultural or archaeological resources are uncovered or encountered during project construction, and take appropriate steps necessary to protect those resources will be taken prior to resuming construction.
- Notify the Washington State Department of Archaeology and Historic Preservation, the King County Historic Preservation Program, and any affected tribal groups if resources are discovered and conduct an on-site inspection by a state-certified archaeologist and other qualified resource professionals. Prepare a mitigation plan prior to construction resuming at the site.
- Treat any human skeletal remains that are discovered during this project with dignity and respect.

## 14. Transportation

- a. *Identify public streets and highways serving the site and describe proposed access to the existing street system. Show on-site plans, if any.*

Access to the site is from SE Green Valley Road, immediately southwest of Highway 18 in Auburn, Washington.

- b. *Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?*

No. The nearest transit stop is approximately two miles south of the project site in Auburn.

- c. *How many parking spaces would the completed project have? How many would the project eliminate?*

The proposed project will neither create nor eliminate any parking spaces.

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

No.

- e. *Will the project 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? If known, indicate when peak volumes would occur.*

None.

- g. *Proposed measures to reduce or control transportation impacts, if any:*

Construction will probably require the temporary closure of at least one lane of SE Green Valley Road. Transportation impacts will be reduced with signage, flaggers, and similar methods to be developed in a traffic control plan.

## 15. Public Services

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

No.

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

Does not apply.

**16. Utilities**

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

Electrical utilities are located along the top of an existing berm that runs along the eastern side of the site, adjacent to the Green Valley Road.

- 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 that might be needed.*

Utility poles within the footprint of the proposed biorevetment may need to be moved elsewhere or replaced.

**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:



Title:

Senior Ecologist

Date Submitted:

5/20/2016

Greenhouse Gas (GHG) Emissions Worksheet  
**Porter Reach Restoration Project**

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 King County's Renton Shops, which serves as a surrogate for where most daily construction-related vehicle trips will start and end: 18.7 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 CO<sub>2</sub>e</u>
Pickup trucks	2244	20.7	108.4	19.564	2120.9	1.1
dumptrucks	65625	6.15	10670.7	22.384	238853.7	119.4
Tracked excavators/dozers	120	6.3	756.0	22.384	16922.3	8.5
Heavy Equip Transport	74.8	1.9	39.4	22.384	881.2	0.4
<b>TOTAL:</b>					<b>258778.0</b>	<b>129.4</b>