



King County

## ENVIRONMENTAL CHECKLIST

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### LOWER RUSSELL LEVEE SETBACK

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#### *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:*

Lower Russell Levee Setback

2. *Name of Applicant:*

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

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

King County Water and Land Resources Division  
201 South Jackson Street, Suite 600  
Seattle, WA 98104-3855  
Phone: 206-477-4637  
Fax: 206-205-5134

4. *Date checklist prepared:*

10/12/2017

5. *Agency requesting checklist:*

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

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

April, 2019 – June, 2020

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.*

Confluence Environmental Company. 2015. Lower Russell Road Levee Setback Project – Geomorphic Response Analysis.

Confluence Environmental Company. 2016. Wetland Delineation and Riparian Corridor Study for the King County Lower Russell Road Levee Setback Project.

Denison, A.J and H.H. Haselton. 2017. 60 Percent Geotechnical Data Report, Lower Russell Road Levee Setback. Aspect Consulting.

Frei, C.J. and S. Sabatine. 2015. Hydraulic Analysis Summary Memorandum, Watershed Science & Engineering.

HDR, Inc. 2015. Lower Russell Road Levee Setback Project 30% - Floodwall Technical Memorandum Version 1.0.

HDR, Inc. 2016. Lower Russell Road Levee Setback Project Final 30% Design Report.

King, R.D. 2017. Lower Russell Road Levee Setback Project – Habitat Area B Channel Clearing Alternatives Evaluation Technical Memorandum. HDR Inc.

Miller, E.W. and J.R. Bean. 2017. Lower Russell Road Levee Setback – Groundwater inflow estimates to Alcoves A and B Technical Memorandum, Aspect Consulting.

Watershed Science and Engineering. 2017. Bank Retreat Potential in Vicinity of XS 18.65 - Green River Russell Road Levee Setback Project, Technical Memorandum.

Wilson, K.F., J. Hayman, C. Schneider, and C. Lockwood. 2015. Lower Russell Road Levee Setback Projects, King County, WA Cultural Resources Review. ESA Consultants.

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.*

<b>Permit</b>	<b>Issuing/Regulating Agency</b>
Clean Water Act Section 404 Permit	US Army Corps of Engineers (USACE)
Rivers and Harbors Act Section 10 Permit	USACE
Endangered Species Act Section 7 Consultation	NOAA Fisheries and US Fish and Wildlife Service
Clean Water Act Section 401 Water Quality Certification	WA Dept of Ecology
NPDES Permit	WA Dept of Ecology
Temporary Water Right Permit	WA Dept of Ecology
National Historic Preservation Act Section 106	USACE/Tribes/WA Dept of Archaeology & Historic Preservation
SEPA (State Environmental Policy Act)	King County (lead agency)
Hydraulic Project Approval	WA Dept of Fish & Wildlife with Tribal review
Aquatic Use Authorization	WA Dept of Natural Resources
Shoreline Management Act Compliance	City of Kent
Critical Areas compliance	City of Kent
Floodplain Development Permit	City of Kent
Clearing/Grading Permit	City of Kent
Flood Hazard Certification	City of Kent
Right of Way Construction Permits	City of Kent
Demolition Permit	City of Kent
RCO Conversion	WA Recreation and Conservation Office

In addition, King County will coordinate with the Muckleshoot Indian Tribe to maintain tribal treaty fishing access during construction.

11. *Give a 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 the project description.)*

### **Project Description**

The Lower Russell Levee Setback project, located on the Green River between S. 212th Street (RM 17.8) and Veterans Way/S. 228<sup>th</sup> Street Way (RM 19.25) within the City of Kent, will replace the existing flood containment system of levee and revetments along the right (east) bank of the river within the 1.4 mile project reach to provide long-term flood protection, improve riparian and aquatic habitat, and enhance recreational opportunities. The existing flood containment system is being replaced because it does not meet current engineering design standards and is prone to scour and slope instability.

The project will set the levee back to the maximum extent practicable and restore aquatic, floodplain, and riparian habitat. The project has the following main components:

1. Improve flood protection by replacing and upgrading 1.4 miles of existing levee and revetment with a new flood containment system that meets current engineering design standards and the Lower Green River System Wide Improvement Framework 500-year (18,800 cfs) level of protection standard.
2. Reconnect about 40 acres of floodplain that is currently isolated from the river by the existing levee and Russell Road by setting the new levee back from the river bank and excavating portions of the hydraulically isolated floodplain down to an elevation that is inundated under the river's altered flow regime.
3. Restore aquatic and riparian habitats, with focus on the following elements:
  - a) Restore an annual flood regime in select locations by excavating portions of the reconnected floodplain to create about 15 acres of rearing and refuge habitat for juvenile salmon;
  - b) Shade the river and enhance and restore riparian functions and the recreational experience by planting about 24 acres of the riparian corridor adjacent to the river;
  - c) Install large wood in habitat areas to create and enhance rearing and refuge habitat for juvenile salmon, provide immediate shade and thermal refuge for fish, and create holding pools for adult salmon migrating upstream.
4. Improve recreational features:
  - a) Relocate and enhance Van Doren's Landing Park to allow for habitat restoration in the existing park location;

- b) Enhance the Green River Regional trail by constructing about 1.4 miles of separated multi-purpose trail through the relocated park and along the northern levee;
  - c) Construct nearly a mile of trails for passive recreation within enhanced habitat areas.
5. Achieve multiple objectives by integrating the new levee, road, and reconnected floodplain with existing and enhanced parks, trails, and open space, thereby creating a unified landscape that offers opportunities for active and passive recreation while at the same time restoring aquatic and riparian habitats and providing flood protection.

The Lower Russell Levee Setback project is identified as a priority in the 2005 WRIA 9 Salmon Habitat Plan (Project LG-10), is on the WRIA 9 4-year work plan, is an early action of the Green River System-Wide Improvement Framework, and is ranked in the first tier of the Puget Sound Partnership Near-Term Action Agenda (#22 of 250 habitat projects; #2 of freshwater projects).

### **Background Information**

The Green River basin occupies 440 square miles and has a mean annual discharge of about 2,300 cfs. The headwaters originate in the Cascade Range and the river ultimately discharges through the Duwamish Waterway to Elliott Bay in Seattle. Three notable historic changes in the Green River watershed affect flow and sediment transport at the watershed scale and alter these processes at the project site. These changes include diversion of the White River, construction and operation of the Howard A. Hanson Dam, and widespread construction of levees and bank armoring.

The White River diversion that occurred in 1906 reduced the amount of water, sediment, and large wood flowing through the Lower Green River. The White River historically flowed into the Green River providing additional water and a substantial volume of sediment. In 1906 a major flood diverted the White River to the Stuck River flowing ultimately to the Puyallup River and Commencement Bay in Tacoma. The diversion was made permanent by installation of a diversion wall near Auburn, Washington (King County 2014).

The Howard A. Hanson Dam, completed in 1962, affects peak flows and sediment and wood delivery from the headwaters of the Green River watershed. Prior to completion of the dam, historic peak flows ranged from 10,000 to 48,000 cubic feet per second (cfs). The dam is operated to target a maximum 12,000 cfs at Auburn, Washington for a 1 percent exceedance event ("100 year flood"). This flow corresponds roughly to the 2-year recurrence flow prior to dam operation. Geomorphic conditions within the main channel and connection of the river with its floodplain are affected by the elimination of extreme flow events and the extended duration of frequent moderate flows.

Installation of levees and revetment throughout the lower Green River occurred predominantly in the 1960s, essentially locking the channel planform in place. The single-thread meandering planform efficiently conveys water and sediment downstream with a relatively narrow and deep channel cross section and hydraulically smooth channel boundaries. Historical channel complexity is lost by confinement of the channel,

interruption of channel migration, and the loss of connection between the main channel and floodplain.

Aerial photographs and historic maps compiled by King County and dating back to the late 1800s demonstrate that the channel through the project reach has remained in its approximate present-day location throughout that period of record including the time prior to the changes in flow, channel confinement, and sediment delivery in the 1900s. Channel stability within the project reach is promoted by bank armoring and low energy resulting from the low gradient (0.5%) and lack of historical peak flood flows.

At the project site, the Green River is a low gradient meandering river with a predominantly sandy riverbed. Existing levees roughly follow the top of bank on both sides of the river through the project reach, and continuous riprap protects both banks of the river against erosion. The channel has an artificially narrow and deep cross section resulting predominantly from reduction of flow and sediment associated with the White River diversion and Howard Hanson Dam operation. This condition is further exacerbated by bank confinement and long-term general channel-bed degradation related to reductions in sediment yield from the watershed. Bank vegetation is dominated by low profile vegetation such as grasses, blackberry, and shrubs with limited zones of larger, denser woody vegetation, most of which are associated with short levee repair projects constructed since the mid 1980s.

### **Flood Risk Reduction Need**

The Lower Green River Valley supports regionally significant economic assets, transportation infrastructure, and commercial/industrial and residential land uses within the floodplain; the valley contributes to over one eighth of Washington State's Gross Domestic Product. Flood risks along the Lower Green River are managed through regulated flows from Howard Hanson Dam at river mile 64.5, as well as over 50 levees and revetments that do not meet contemporary design standards and current flood protection goals. Primary flood risks within the Lower Green River include overtopping or breaching of levees and subsequent inundation of the residential, commercial, industrial, and agricultural lands within the floodplain. Expected annual damages from a right bank levee failure at the project site, based on modeling of the current levee conditions, are estimated at \$27 million in the Kent/Renton area (SWIF Current Conditions Report, 2014). Setting back the Lower Russell levee will provide greater flood storage and conveyance capacity, and reduce long-term maintenance costs.

The Lower Green and Duwamish River levees and revetments provide bank protection and a flood containment system from the City of Auburn to the mouth of the Duwamish River where it empties into Puget Sound. The levees and revetments typically have over-steepened banks, areas with inadequate or deteriorating protection at the embankment toe, and incrementally slumping or sloughing riverbank slopes supporting constructed earthen levee berms. The historical levee reaches lack habitat features such as native riparian vegetation and instream wood accumulations. With flows confined to a narrow, leveed channel, the potential for flood scour of the riverbed is significant. Where this occurs, undermining and deterioration of the embankment toe have occurred. Such conditions stress the levee system, with the potential to increase the occurrence and magnitude of failures. As a result, many of these flood management structures need frequent maintenance. Nearly all of them have been identified for

rehabilitation and reconstruction to structural design standards better suited to the levels of flood risk present. The existing system of levee and revetments do not meet current engineering design standards. The system is prone to scour and slope instability, and overtopping, leaving the lower Green River valley and economic assets at risk.

The project will reduce flood risks to over \$1.2 billion of property, not including contents (2013 King County Assessors Data for improved plus unimproved value of the land protected by the levee), increase conveyance capacity along this section of river from 12,000 cfs to 18,800 cfs, and reduce the flood hazard to about 28 industrial and commercial structures and about 2,400 acres of land.

### **Biological Need**

Salmon habitat in the Lower Green River is degraded compared with historical conditions as a result of land use changes, floodplain development, and river management activities such as channel confinement by levees and revetments, flood control at Howard Hanson Dam, and diversion of the White River so that it no longer flows into the Green River. The highly engineered Lower Green River that resulted from these actions is characterized by confined, armored channels that lack the in-stream geomorphic complexity and floodplain connection needed to create aquatic habitats that support healthy fish populations, including ESA-listed species such as Puget Sound Chinook salmon, steelhead, and bull trout.

The Lower Green River mainstem channel is physically isolated from its floodplain by a series of levees and revetments, and hydrologically isolated from the floodplain by both riverbed incision and greatly reduced flood elevations. Shoreline and riparian areas lack mature trees, resulting in minimal shade and elevated water temperatures. Existing water temperatures and dissolved oxygen do not meet water quality standards, leading to adverse, sometimes lethal, effects to threatened species; the river is on the Clean Water Act Section 303 (d) list and has a total maximum daily load (TMDL) for water temperature. The lack of riparian trees and shrubs also reduces available food resources for juvenile salmonids.

Most indices of Green River fall Chinook salmon populations show that the Green River population is in serious decline. The most recent NOAA status review (Ford and others 2010) found that the 15-year trend (1995-2009) in natural-origin spawner abundance was 0.95 (anything less than 1 means the population is declining). A limiting factors analysis completed in 2000 as a precursor to the 2005 WRIA 9 Salmon Habitat Plan found that disconnection of the Lower Green River from its floodplain and the consequent loss of juvenile rearing and refuge habitat is one of the most significant factors affecting salmon. Due to flood control efforts, roughly 80 percent of the historic floodplain is entirely cut off from the river. This equates to almost 25 square miles that will no longer flood and is thus no longer accessible to fish during the key juvenile rearing and outmigration period.

Increased rearing habitat in the Lower Green River and the Duwamish estuary is the critical factor for improving productivity of fry migrants. Chinook fry require slow velocity habitats along mainstem river channels for rearing and high flow refuge. Suitable habitats that provide these low velocity conditions are found along natural channel margins but these types of habitats are currently very limited along the mainstem Green River due to levees and rock revetments. Low velocity habitats are particularly scarce during the higher flow periods that occur when Chinook salmon are rearing in the river between early February and

early June. These low velocity areas become highly compressed during higher flows, and are essentially absent in mainstem areas that have armored banks. Absence of such low velocity “holding” areas force many fry to migrate to Puget Sound prior to obtaining adequate growth, greatly increasing mortality.

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 project is located between River Mile 17.85 (S. 212th St) and river mile 19.25 (S. 231st Way) in the City of Kent, on the right bank of the Green River.

The project is located in Section 15 NW, Section 10 SE, and Section 11 SW and NW, Township 22 North, Range 4 East of the Willamette Meridian.

North End of Project Site: Latitude: 47.4123, Longitude: -122.26468

South End of Project Site: Latitude: 47.3958, Longitude: -122.27326

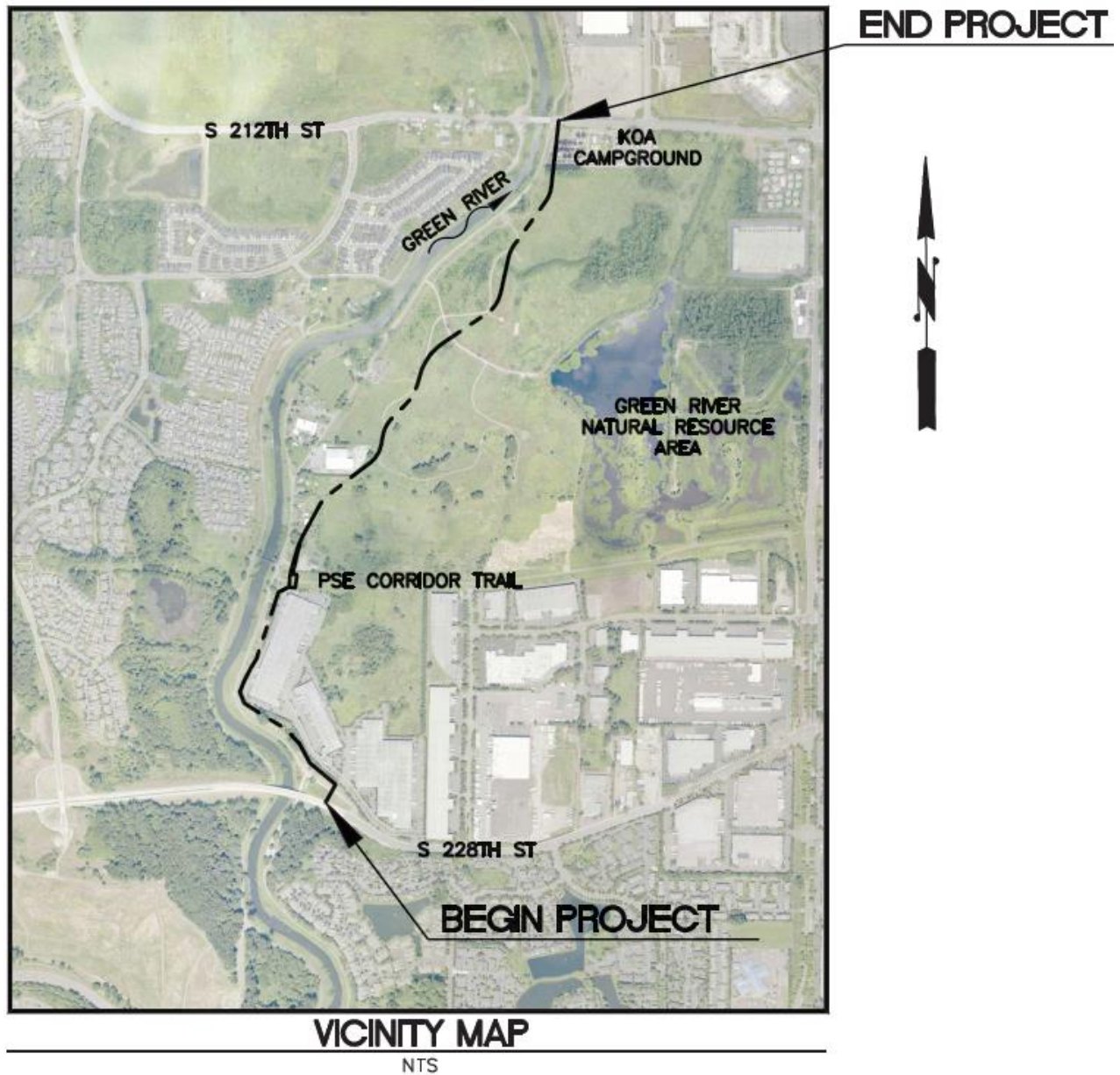


Figure 1. Vicinity map.

## B. ENVIRONMENTAL ELEMENTS

### 1. Earth

- a. General description of the site (underline one): flat, rolling, hilly, steep slopes (existing levee slopes), mountainous, other.
- b. What is the steepest slope on the site (approximate percent slope)?

The steepest slopes on the site are the existing levee and riverbank slopes, which have a maximum slope of about 67%. The rest of the site is generally flat.

- 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.*

Site soils consist primarily of sands, silts and clays, with some lenses of dense peat.

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

The river bank has been stabilized with riprap since at least the 1960s. Sands and silts deposited over the riprap during high flows often slump, giving the appearance of unstable banks. The right bank of the river is currently being scoured near RM 18.6.

- e. *Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate the source of fill.*

The following excavation is proposed:

- Removal of about 1,500 cubic yards (CY) of existing riprap revetment along roughly 3,600 linear feet (LF) of riverbank. All visible angular rock larger than eight inches in diameter will be removed from the riverbank.
- Levee foundation preparation excavation of approximately 12,000 CY
- Floodwall foundation excavation of approximately 7,000 CY
- Scour installation excavation of approximately 17,000 CY
- Park grading preparation excavation of approximately 16,000 CY
- Habitat area excavation of approximately 313,000 CY

Suitable soils excavated from on site will be reused on site. The site will generate a much larger volume of excavated material than can be reused on site. The excess excavated soils will be hauled off site.

The following fill is proposed:

- Levee embankment fill of approximately 85,000 CY
- Roadway embankment fill of approximately 25,000 CY
- Rock for barb and rock revetment construction of approximately 14,000 CY
- Park fill of approximately 57,000 CY
- Wood chip mulch of approximately 13,000 CY
- Compost soil amendment of approximately 6,000 CY

- 220 boulders (approx.) ballasting habitat wood
- 290 logs (>12" dia.) for large wood habitat structures and 20 logs for a crib wall

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. There is potential for short term turbidity to the Green River adjacent to and downstream of the project area during the removal of riprap from the existing levee. The implementation of temporary erosion and sediment control measures and stabilization techniques (see B.1.h.) will minimize any potential adverse effects.

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

About 6.8 acres of new impervious surface will be created as a result of this project, and about 24 acres of existing impervious will be removed, for a net decrease of 17.2 acres of impervious surface.

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

During construction temporary erosion and sediment control measures such as silt fencing, turbidity curtains, wood mulch berms, vegetation buffer strips, construction entrances, and street sweeping will be used to control and minimize erosion and sedimentation. Following construction, disturbed soil areas will be stabilized by using seed, mulch, erosion control blankets and installation of native vegetation. The setback levee will be inspected during and following each flood for signs of erosion, and appropriate measures such as application of geotextile fabrics and packing of any observed rills or gullies will be carried out promptly to address any observed erosion problems.

## 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.*

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.

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

Construction equipment, including excavators, dump trucks, bulldozers, soil compactors impact drills and pick-up trucks, will be used during construction. This equipment will

emit gasses including carbon dioxide (CO<sub>2</sub>), 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 CO<sub>2</sub>e, which converts the GWP of various gasses into their equivalent in CO<sub>2</sub>. The amount of CO<sub>2</sub>e that may be emitted as a result of constructing the proposed project was estimated by computing the amount of fuel to be consumed by equipment used to construct the project or by estimating the hourly output of various greenhouse gases. Fuel consumed or hourly output is then converted into CO<sub>2</sub>e 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 about 1,500 metric tons of CO<sub>2</sub>e 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 the 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.

About 7,900 trees will be planted on the site following construction. These trees should sequester more than 1,200 metric tons of carbon within 36 years of their planting at the site.

### 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 existing levee is located on the right bank of the Lower Green River. In addition, there are eight wetlands within the project area (Wetlands A, B, C, D, E, F, G, and H). Wetland A is a 124.5 acre (5,423,220 SF) Class II wetland with forested, emergent, shrub, and open water features. Wetlands B (0.1 acre; 4,356 SF), C (0.5 acre; 21,780 SF), D (0.06; 2,614 SF acre), and G (0.3 acre; 13,068 SF) are small depressional Class III emergent wetlands. Wetlands E<sup>1</sup> (1.9 acre; 82,764 SF) and F (32.2 acres; 1,402,632 SF) are Class II wetlands with both forested and emergent features, and Wetland H (0.01 acre; 436 SF) is a Class III wetland also with forested and emergent features. Wetlands and the Ordinary High Water Mark are shown on Figure 2.

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<sup>1</sup> Wetland E was constructed by the City of Kent in 2003 as mitigation for the Kent Landing Development.

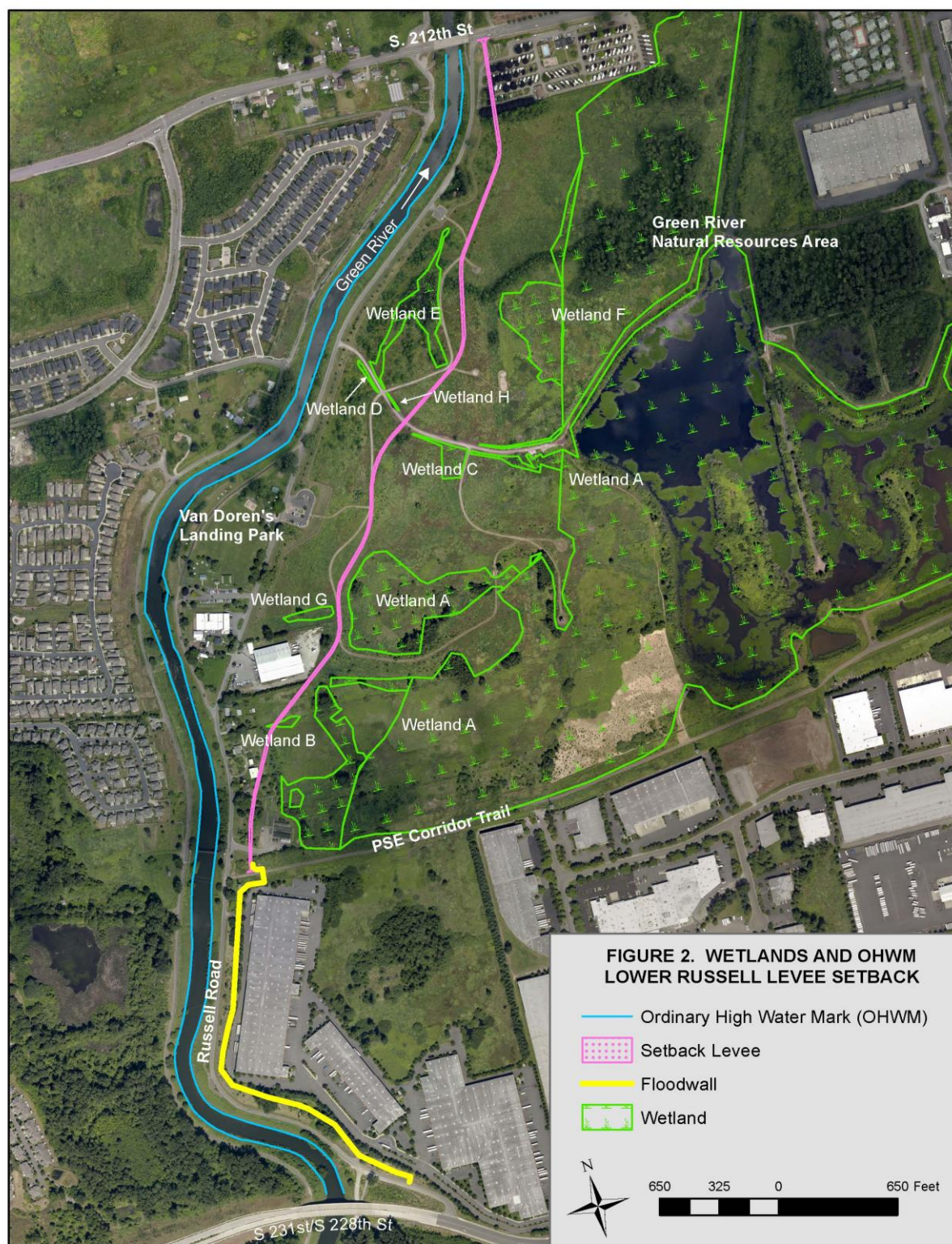


Figure 2. Wetlands and Ordinary High Water Mark (OHWM).

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

Construction of the setback levee, relocation of Van Doren's Landing Park, and excavation of floodplain benches to facilitate meander progression will require some encroachment into Wetlands B and E and fill of Wetlands G, D and H. These project elements, along with construction of a levee access road near the Puget Sound Energy corridor, will result in encroachments into the buffers of Wetlands A, B, C, and E. Construction of the floodwall, levee, and habitat backwater feature will require tree removal within 200 feet of the river. Impacts to trees and wetlands will be mitigated by levee and revetment removal, construction of extensive aquatic habitat and buffer and floodplain revegetation. In-river work consists of rock riprap removal and construction of three rock scour deflectors at the downstream end of the project to direct flow under the South 212<sup>th</sup> Street Bridge. Major project elements are shown in Figure 3.

- 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.*

Fill or clearing and grubbing will occur in all of Wetlands B (0.1 acre; 4,356 SF), D (0.06 acre; 2,614 SF), G (0.3 acre; 13,068 SF), and H (0.01 acre; 436 SF) and portions of Wetlands B (0.11 acre; 3,738 SF), C (0.04 acre; 1,244 SF), and E (0.04 acre; 1,262 SF), for a total of 0.48 acre (21,315 SF) of wetland impact (Figure 3). The fill material will be repurposed sandy-silt native soils excavated on-site during other project elements. No fill or rock for barb or revetment construction will be placed within the existing river channel as they will be constructed in excavated areas.

- 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, a small portion of the project lies within the 100-year floodplain of the Green River (Figure 3).

- 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.

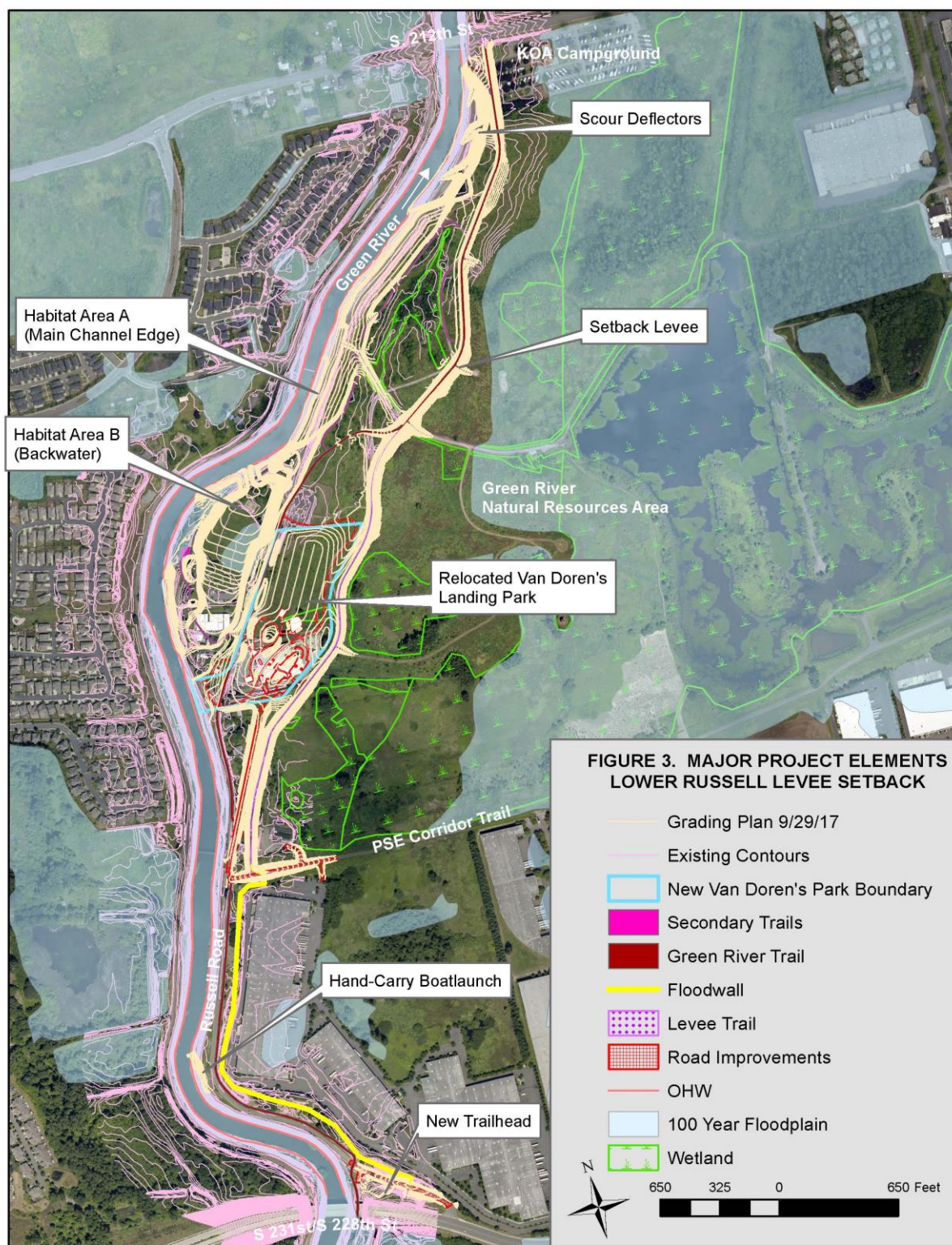


Figure 3. Major Project Elements.

*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.

- 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.*

NA

*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 primary sources of runoff within the existing project site are Russell Road and parking lots associated with Van Doren's Landing Park, the Holiday Kennel and the warehouse across Russell Road. Open spaces (lawn, brush, and wooded areas) generate the remaining runoff. Areas west of Russell Road primarily drain to the Green River. Areas east of Russell Road drain to the City of Kent's regional stormwater facility within the Green River Natural Resources Area. Once completed, the project will result in less impervious surfaces to generate runoff. Runoff from pollutant-generating surfaces will be treated with infiltration/filtration Best Management Practices.

- 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.

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

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

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

☒ Deciduous trees: alder, maple, cottonwood, other

- ☒ Evergreen trees: fir, cedar
- ☒ Shrubs (including willow species)
- ☒ Grass
- ☐ Pasture
- ☐ Crop or grain
- ☒ Wet soil plants: rush
- ☐ Water plants: water lily, eelgrass, milfoil, other
- ☒ Other types of vegetation: blackberry, reed canary grass

Vegetation adjacent to the river includes patches of native and ornamental deciduous and evergreen trees interspersed with grasses and blackberries. Vegetation within the existing Van Doren's Landing Park includes meadow grasses and infrequent native and ornamental trees. The project site also includes a portion of the Green River Natural Resources Area (GRNRA), which is a large City of Kent open space that includes meadows, emergent wetlands, ponds, and some trees. The portion of the GRNRA within the project area is a reed canarygrass-dominated meadow.

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

It is estimated that up to 942 trees could be removed for construction, primarily from the new levee alignment and, excavated habitat areas. Large trees will be avoided where possible. Avoidance techniques include notching around large trees during levee riprap removal and excavation, adjusting the location of trails and temporary construction access roads, and adjusting the footprint of habitat excavation areas. Affected tree quantities are presented in Table 1. Non-native blackberry and reed canarygrass will be removed from habitat areas before they are planted.

Table 1. Trees to be removed.

Size (in)	Conifer	Deciduous	Total
<12	270	337	607
12 - 24	137	159	296
>24	22	17	39
Total	429	513	942

Construction-related removal of trees is expected to reduce shade and cover along the river and within the habitat areas in the near-term. These impacts will be partially mitigated through revegetation of about 24 acres of riparian buffer. These actions will eventually provide shade and cover to the river along much of the 1.4 mile project reach and in portions of the created habitat areas. Short-term impacts will not be directly mitigated through revegetation. Temperature impacts may be lessened by increased channel complexity, pool scour, and interstitial flow.

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

No threatened or endangered plant species have been seen 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:*

Significant trees will be avoided during construction when feasible. Temporary construction access can be adjusted where practical to avoid large trees. Trail alignments and habitat excavation areas were sited to minimize impacts to large trees.

The riparian buffer and created habitat areas will be vegetated with native trees, shrubs, and groundcover following construction.

## 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: kingfisher, merganser, dipper  
☒ Mammals: deer, bear, elk, beaver, other: vole, mouse  
☒ Fish: bass, salmon, trout, herring, shellfish, other: whitefish, sculpin, dace, sucker

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

Puget Sound Chinook salmon  
Coastal/Puget Sound steelhead trout  
Coastal/Puget Sound bull trout

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

Juvenile and adult anadromous and resident fish migrate through the project area (mainstem Green River) during certain times of the year. Most of the large river valleys in King County – including the Green River – comprise a portion of the Pacific Flyway used by waterfowl and other migratory bird species.

- 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 Green River. Most ground-disturbing actions will occur landward and above the Ordinary High Water Mark (OHWM) of the river channel (Figure 3). The only construction-related actions proposed to occur below the OHWM of the Green River are removal of existing levee face and toe rock, which is essential for the restoration of natural banks within the project area, and construction of three scour deflectors and a segment of bank protection at the downstream end of the project area, which are essential to protecting the new levee as it approaches the South 212<sup>th</sup> Street Bridge. In accordance with permit conditions, in-water work will be timed to have the least impact on the fewest fish species and life stages possible.

Habitat logs and log jams proposed for placement along the mainstem channel and within created habitat areas will create hydraulic complexity and roughness, provide hiding and thermal cover, and high flow refuge for juvenile and adult fish. The

depositional bars associated with the apex jams will be planted with native vegetation, which will provide shade, leaf litter, and wildlife habitat.

Parts of the existing levee and wetland edge have significant invasive blackberry and reed canarygrass growth, which compete with native vegetation and provide minimal habitat for fish, birds, and small mammals. The proposed project will remove these and other invasive plant species, and revegetate all disturbed areas with native trees, shrubs and grasses. In addition, an approximately 24-acre riparian buffer will be restored with native trees and shrubs. This buffer will provide fish habitat and water quality benefits to the river and created aquatic habitat areas, as well as bird and wildlife habitat.

The large excavated backwater embayment is expected to also enhance lentic-breeding amphibian habitat by creating standing water habitat preferred by certain amphibian species for breeding. Seasonal fluctuations in water levels will influence the quantity and quality of amphibian breeding habitat actually created.

## 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.*

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 or portable pumps (to irrigate installed vegetation), 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 source 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 included in this proposal, although the use of solar energy will be investigated as an alternative to petroleum fuels to operate the temporary irrigation system used to water installed vegetation for up to three years after construction.

## 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.*

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 special emergency services that might be required.*

The need for special emergency services is not anticipated. 911 will be called in the event of an emergency.

- 2) *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 that may affect your project (for example, traffic, equipment, operation, other)?*

Traffic (both residential and commercial), light industrial noise from adjacent properties, and park/residential maintenance (e.g., lawn mowing) are the main sources of existing noise in the project area. None of these noises will 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.*

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, pile driving, 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 will 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

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

The current land use of the site and adjacent properties includes two public parks, and public open space, The Green River Regional Trail, a KOA campground, residential properties, a commercial dog kennel, a municipal nursery, and light industrial warehouse. The properties on the opposite bank include publicly-owned land (City of Kent), a Regional Trail, and residential properties.

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

Historically, the entire Kent Valley was used for agriculture. The aerial photograph record shows most of the project area in agricultural use in 1973. Planning and land acquisitions by the City of Kent for the 304-acre Green River Natural Resources Area began in 1979 and were completed in 1996. Van Doren's Landing Park has been in place at least since 1987, when the current restrooms were constructed.

*c. Describe any structures on the site.*

Structures on the site include Russell Road, which also serves as the regional Green River Trail through most of the project site; a City of Kent native plant nursery that includes two greenhouses, two horticultural sheds, and a trailer that serves as an office; four residential properties, one with three outbuildings including a barn; a commercial warehouse that housed several commercial tenants; a commercial dog kennel with two on-site residences and an outbuilding; a City of Kent Van Doren's Landing public park that has a parking lot, restrooms, and two picnic shelters; two parking lots and viewing tower associated with the Green River Natural Resources Area; and a KOA campground. The South 228<sup>th</sup>/231<sup>st</sup> Street Bridge crosses the river at the upstream end of the project site, and the South 212<sup>th</sup> Street Bridge crosses the river at the downstream end of the project site.

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

All existing structures within the project site will be demolished or relocated. These consist of two residences and associated outbuildings, a light industrial warehouse, a commercial dog kennel and associated residence and outbuildings, the parking lot, restrooms, and two picnic shelters at Van Doren's Landing Park, 21 (of 130) RV spots and five (of 10) tent spots at the KOA campground, and Russell Road north of Van Doren's Landing city park.

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

Industrial Park and Industrial Park/Commercial

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

Park & Open Space, and Industrial

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

The site includes High Intensity, Urban Conservancy – Open Space, and Shoreline Residential designations.

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

Yes, portions of the site include the following areas: fish and wildlife habitat, wetland, 100 year floodplain.

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

None.

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

Two families from the single family residences, about five tenants from the Holiday Kennel plus canine boarders, 11 businesses from the Noble Warehouse, and 21 (of 130) RV spots, five (of ten) tent spots, and one group camp spot from the KOA campground.

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

The property owners received fair market value for their homes and structures and property. The residences and tenants received relocation assistance. The KOA campground is anticipated to enter into a land swap agreement with the City of Kent to mitigate business impacts.

- 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.

## 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.*

Four middle income residential homes and one low-income rental home will be eliminated.

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

King County designed the project to take only the minimum number of residential units while maximizing the environmental and flood hazard reduction benefits of the

project. The residents impacted by this project received fair market value for their homes, as well as relocation assistance from King County and the City of Kent.

## 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?*

The tallest height of any proposed structure is the new viewing tower, which will be a maximum of 34 feet above the existing ground surface.

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

There will be slight alteration in views due to the landward relocation of the setback levee. The levee will be higher in places, and therefore may impact views of the river or riverbank. Native plantings will also obstruct some views of the river and wetland as viewed from the east.

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

The levee will not be constructed any higher than is required for flood risk reduction purposes (500-year flood protection plus 3 feet of freeboard). Most disturbed areas (see Question B.4.d.) will be replanted to restore native riparian vegetation within the river corridor. Over time, the aesthetics of the project site will be improved by converting areas currently overgrown with invasive plants to more beneficial native plant communities.

## 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.*

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

## 12. Recreation

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

Russell Road currently serves as the regional Green River Trail through much of the project area; it is used primarily by walkers, joggers, and bicyclists. Van Doren's Landing Park offers passive and active recreation (playground, grassy areas, a walking path, a hand carry boat launch) as well as views of the project area. The Green River Natural Resources Area provides walking trails and birdwatching. The KOA campground provides 130 RV spots, 10 tent spots, and a swimming pool. In-river use in this area is limited due to the high blackberry-covered banks.

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

Over the long-term, existing recreational uses of the informal foot trail in its new alignment and other passive uses like views are expected to continue. In the short term, access to the construction site will be restricted (May 2019 – June 2020) to implement necessary site safety standards, therefore eliminating access to the entirety of the project site. As a result, the project will temporarily displace users of the Green River Trail and Van Doren's Landing Park.

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

The Green River Trail, which currently is served by Russell Road, will become a separated trail through the project reach, a long-time City of Kent goal. Van Doren's Landing Park will be relocated adjacent to its current location (to allow for habitat restoration next to the river) and enhanced. About 20 of the 26 camping spots lost to the KOA campground will be replaced. Aquatic and riparian habitat to be constructed by the project is expected to increase numbers and species of birds and wildlife using the area, thereby enhancing birdwatching. A new hand carry boat launch will improve access to the river.

## 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.*

There are no known places or objects listed on national, state or local preservation registers on or adjacent to the site. The Kent Historical Society would like to preserve the old barn on parcel 0006200011 by moving it off site. If the barn is not relocated it will be documented in compliance with Section 106 of the National Historic Preservation Act before it is demolished.

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

A 2015 cultural resources review identified the presence of one historic archaeological site (45KI1195) and one historic site (45KI206) in the project area, and the potential

presence of two ethnographic Indian village sites. No evidence of ethnographic archaeological remains was found during the 2016 field survey.

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

Additional field survey work will be conducted to determine the presence of potential ethnographic sites and better characterize the boundary of the historic sites. Should testing and evaluation be necessary based on presence of significant artifacts, King County will work with the Corps of Engineers on developing a work plan.

During construction, King County will follow an Archaeological Resources Monitoring and Inadvertent Discovery Plan which will describe procedures to be followed if cultural resources are encountered during construction. These procedures will include temporarily suspending construction activities and securing the site, and consulting a professional archaeologist or the County coroner and local law enforcement. The monitoring plan will be reviewed and approved by the US Army Corps of Engineers during permit review to ensure compliance with Section 106 of the National Historic Preservation Act.

#### 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.*

This project runs south to north, between the Veteran's Way/South 228<sup>th</sup> Street and South 212<sup>th</sup> Street bridges. Vehicle access from South 212<sup>th</sup> Street to the site will be eliminated.

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

King County Metro bus routes 150 and 180 travel on South 212<sup>th</sup> Street along the northern end of the project site.

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

100 spaces including five handicap spaces will be constructed. About 80 spaces from several lots will be eliminated.

*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:*

Once the construction is completed, there will be no impact on transportation. King County will coordinate with the City of Kent to address transportation impacts anticipated during construction.

## 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:*

There will be no impact on public services.

## 16. Utilities

- a. *Underline utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.*
- b. *Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity that might be needed.*

Proposed public utility work (sewer, water, and storm drainage) and private utility work (electric, communications, cable) is limited to removing existing utilities in the way of the project and rerouting utilities to maintain the existing level of service following the project.

## 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:

Director, WLR Division, DNRP

Date Submitted:

10/24/17