Lower Russell Levee Setback Project

Project Open House and Presentation
at Green River College, Kent Campus
5:30 – 7:30 p.m.

October 25, 2017

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

King County Flood Control District
Flood Control District Councilmember Dave Upthegrove and City of Kent Mayor Suzette Cooke gave a welcome introduction
Along the project length we have an existing system of levees and rock revetment lining the river bank making up one flood containment system.
Project context in relation to Green River valley and flood protection facilities
Project context in relation to Green River valley economy protected by flood protection facilities

Analysis done by FEMA in 2009 showed that failure of the current levee system in a 1% annual chance (100 year) storm event would result in damages of $1.3 to $3.7 billion, taking into account damages to buildings, contents, and business interruption.

The valley is home to many large businesses, including Boeing, Amazon, Starbucks roasting plant.
Anadromous salmonids found in the Green-Duwamish watershed are coho, chinook, chum, and pink salmon and coastal cutthroat, steelhead, and bull trout/Dolly Varden char. Historical chinook population was 30,000-40,000 adults. Last 40 years have averaged about 5,000. Low of 800 adults in 2009 (75% of which were from hatchery origin)

WA Dept. of Ecology’s (Ecology) Water Quality Standards:
• Duwamish River is categorized as “Salmonid Rearing and Migration Only” habitat. The Duwamish Waterway and River is on the 2012 Ecology’s 303(d) list for not meeting pH and water temperature standards.
• Lower Green is categorized as “Salmonid Spawning, Rearing, and Migration” habitat. The Green River is 303(d) listed for violation of dissolved oxygen (DO), fecal coliform bacteria, and temperature standards.
• Middle Green as “Core Summer Salmonid” habitat for aquatic life use. As part of the updated water quality standards, the Middle Green River has been assigned an additional “Supplemental Spawning and Incubation Protection” temperature criteria of 13 ºC to be applied from September 15th through July 1st.

Local jurisdictions throughout the Green River basin are responsible for implementing salmon recovery plans under the ESA, complying with the Clean Water Act (CWA), the
Federal Emergency Management Agency’s (FEMA) development standards, and mitigating impacts on habitat that may result from flood risk reduction projects. These complex issues require key policy considerations of levee system management options and implications.
The levee system in the Green River is old and outdated and originally constructed to protect agricultural lands rather than the significant regional economic infrastructure, businesses and residential land uses that exist currently. Additionally, the level of protection from flooding provided by current levees and other flood protection structures varies.

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**Lower Russell Levee Setback**

**Project Goals:**
- Increase flood containment capacity
- Provide a flood protection system that balances policy directives regarding flood protection, habitat improvement and recreational use
- Design a system that minimizes long-term maintenance needs and cost

**Project Need:**
The existing system of levee and revetments does not meet current engineering design standards.
- Lower Green River Valley at increasing flood risk
- The system is prone to scour and slope instability
- Maintenance costs Increasing
Flood Protection Goals

- Increase flood containment capacity of the flood protection system to convey 18,800 cfs (500-year flood) with 3 feet of freeboard
- Set back the flood protection system (levee and floodwall) to reduce scour potential, increase resiliency and reduce life cycle costs
The flood protection system is a combination of floodwall and levee. A levee is proposed north of PSE trail corridor to 212th Street. The levee will have a trail running on the levee crest for recreational use, maintenance access and police/emergency vehicular use. A floodwall is proposed along the TIAA-CREF facility between 228th Street and PSE trail corridor. The choice for a floodwall was based on cheaper cost and leaving more room in a narrow corridor for other uses (allowance for a regional trail and riparian plantings). A gravel maintenance road will run along the east side of the floodwall.

Van Doren’s Landing Park will be relocated to the other side of existing Russell Road. Existing Russell Rd will no longer continue past (north of) Van Doren’s Park to 212th St, but end at the relocated Van Doren’s Park with park access maintained from 228th Street. A new Russell Woods trailhead will be developed along 228th Street off of Russell Road. The existing regional trails on both project ends will be connected with a dedicated trail (versus sharing the existing road).

Riparian habitat (areas of less frequent flooding) and aquatic habitat (areas of frequent inundation) will be developed as part of this project. A large area of aquatic and riparian habitat will be excavated within existing Van Doren’s Park. North of the existing park an expanded area of riparian habitat is proposed. Shoreline public access will be
expanded with grading of shallower slopes to access the river.

An overview of the primary Project elements:

1. A new floodwall extending from the vicinity of the intersection between S. 228th Street and Russell Road to the vicinity of the intersection between Lower Russell Road and the Puget Sound Energy (PSE) Corridor Trail.
2. A new levee extending from the vicinity of the intersection between Russell Road and the PSE Corridor Trail to its intersection with S. 212th Street.
3. Modifications to Russell Road in the vicinity of its intersection with S. 228th Street. The road embankment will be raised through its intersection with the floodwall in order to avoid the need for a flood gate.
4. Modifications to the PSE Corridor Trail in the vicinity of its intersection with Russell Road. The road embankment will be raised through its intersection with the floodwall in order to avoid the need for a flood gate.
5. Modifications to the PSE Corridor Trail in the vicinity of its intersection with Russell Road to provide vehicle access to the Kent Nursery; emergency response vehicle secondary access to the TIAA-CREF warehouse property; and maintenance and emergency vehicle access to the top of the new levee embankment running to the north.
6. Relocation of a portion of Russell Road extending from its intersection with the PSE Corridor Trail to the parking lot of the relocated Van Doren’s Landing Park.
7. Relocation of Van Doren’s Landing Park to the east of its current location in order to allow creation of a new riparian habitat area.
8. A new trail system consisting of asphalt, gravel, and levee trails. The system will maintain continuity with the regional trails at S. 228th Street and S. 212th Street.
9. Completion of mass grading of portions of the right bank and right bank floodplain to create new riparian and aquatic habitat.
10. Bank stabilization measures in the form of a launchable rock pad in the vicinity of S. 212th Street and flow deflectors (barbs).
11. Landscaping of the Project area.
12. Relocation of the existing boat launch to a location in the vicinity of River Mile (RM) 19.0.
13. Relocation of utilities as required due to work associated with this project.
14. Acquisition of property directly impacted by this project.
Habitat Goals

Primary:
- Increase aquatic rearing habitat for juvenile salmon during the Chinook rearing and outmigration period (Jan – June)
- Create complex, fully functioning riparian habitat that provides river shade

Secondary:
- Provide high-flow refuge habitat for juvenile salmon

Source: Lower Russell Habitat Work Group
Recreation Goals

- Relocate and enhance Van Doren’s Landing Park
- Complete a missing link of the Green River Trail
- Maintain vehicular access to Van Doren’s Landing Park and Green River Natural Resource Area
This slide is an overview of the recreation elements of the entire Lower Russell Levee Setback project. Some key features include:

- Relocated Russell Woods Parking lot right off of Russell Road
- Relocated hand-carry boat launch
- New separated Green River Trail between Russell Road and a new flood wall.
- Relocated Van Doren’s Landing Park
This slide shows an overview of the relocated Van Doren’s Landing Park. The relocated park will replace key elements from the existing park like the two picnic shelters, restroom, large play lawn, the slip stream art installation and horseshoe pits. New elements, designed to make up for the loss of river frontage, may include:

- Expanded play area
- Wiffleball field
- Pickleball
- Horseshoes
- Cornhole
- Viewing Tower
- River overlook seating
- Consolidated parking area
This shows one of two concepts for a new playground. This is themed after Mt. Rainier and would include a variety of play elements as shown.
This slide shows sample pictures of some of the elements that may be included in the Mount Rainier play theme.
This slide shows the second concept for the play area focusing on the river and the historic Van Doren’s Landing, including a play version of a river boat that used to steam up and down the Green River.
This slide shows sample pictures of some of the elements that may be included in the Riverside play theme.
This slide shows some details on a number of elements like the restroom, viewing tower, and the picnic shelters designed to look like the old hop kilns that used to be all up and down the Green River.
Our construction season is typically limited to May through October due to weather dependent work, in-water work window restrictions and avoiding our typical flood season of Nov – March. Construction timeframe is dependent on timing of property acquisition, determination of significance regarding archeological sites and permits.

Due to the size of the project and the amount of earth needed to be moved the project construction the project will take two years. The first summer the majority of the earthwork grading and flood protection facility construction will occur. The 2nd year the park facility construction and finishing the regional trail system is expected.
Questions?

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