

LOWER RUSSELL ROAD LEVEE SETBACK PROJECT FACT SHEET

WHAT IS THE LOWER RUSSELL ROAD LEVEE SETBACK PROJECT?

- The Lower Russell Road Levee Setback project is a 1.4 mile long levee improvement project that will replace an old levee and revetment located along the east bank of the Green River between South 212th street and Veterans Drive/S 228th Street in the City of Kent.
- The new levee will be set back where feasible from the Green River and better protect residential, commercial, and industrial development behind the levee while also improving riparian and aquatic habitat along the Green River for fish and other wildlife.
- The project will integrate and improve road, trail and park amenities including an extended Green River Trail and a relocated Van Doren's Park.

WHY REPLACE THE EXISTING FLOOD PROTECTION FACILITIES IN THIS LOCATION?

- The existing aging system of levee and revetments doesn't meet current engineering design standards and is difficult and costly to maintain; having over-steepened banks, areas with inadequate or deteriorating rock protection at the levee toe, and slumping riverbank slopes.
- The potential for scour of the river bed and banks is significant because the Green River is confined to a narrow, leveed channel, and the undermining and deterioration of the bank and levee toe leaves the lower Green River valley, people, and economic assets at risk.
- The aging flood protection system lacks habitat features such as native streamside vegetation and in stream wood that are necessary for salmon recovery.

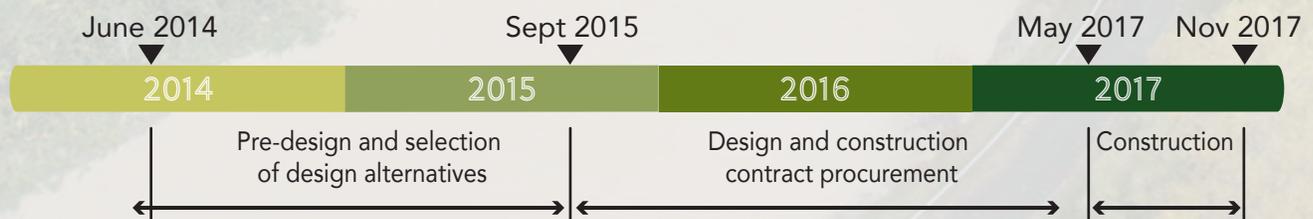
WHY SET BACK THE LEVEE IN THIS LOCATION?

- The Lower Russell Road levee improvement project area is one of the few places along the Lower Green River without major development along the river, and provides a unique opportunity for substantial habitat restoration and enhancement of recreational opportunities, in addition to improved flood risk reduction. By setting the levee back from the river, the project will provide greater flood storage and conveyance capacity, increase shallow water habitat for ESA (Endangered Species Act) listed species, enhance recreational opportunities, and reduce long-term maintenance costs.

PROJECT GOALS:

- Improve flood protection by replacing and upgrading the existing levee and revetment designed to a 0.2% annual chance (500 year) flood event.
- Restore aquatic and riparian habitats for ESA listed species and other fish and wildlife. The project is identified as a priority project in the 2005 WRIA 9 Salmon Habitat Plan.
- Create a unified landscape that includes recreation opportunities, restored aquatic and riparian habitats, and improved flood protection.
- Reduce long-term maintenance costs.

PROJECT TIMELINE:



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PROJECT BUDGET AND PROJECT SPONSORS:

- This project is funded with \$17.4 million in King County Flood Control District Funds.
- Additional funding of up to \$6.6 million is possible through partnerships with the Department of Ecology, the State Salmon Recovery Funding Board and the U.S. Army Corps of Engineers to fund additional wildlife habitat and recreational opportunities.
- The King County Rivers and Floodplain Management Section is managing the project implementation with support from the City of Kent.

FOR QUESTIONS OR CONCERNS REGARDING THIS PROJECT, PLEASE CONTACT:

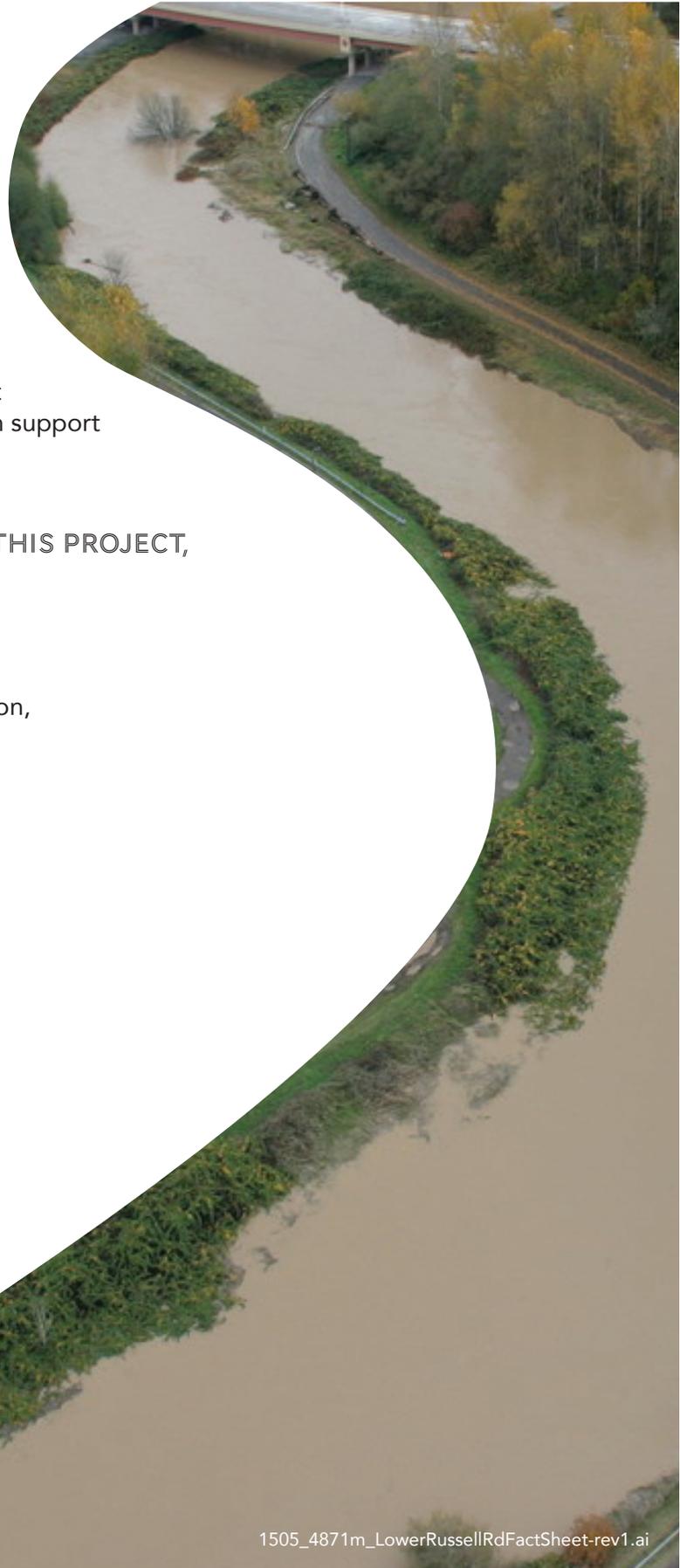
Project Manager: **Erik Peters**

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King County Rivers and Floodplain Management Section,
Water and Land Resources Division



Alternative formats and interpreter services
available by request: 206-477-4812. TTY: 711



Lower Russell Rd Levee Setback Project

Public Meeting and Open House
at Kent Commons Community Center
5 – 7:30 p.m. June 8, 2015



Welcome



Flood Control District Councilmember Dave Upthegrove and City of Kent Mayor Suzette Cooke gave a welcome introduction

Lower Russell Project Staff Team



King County:

- Lorin Reinelt, Green River Basin Supervisor
- Erik Peters, Engineer, Project Manager
- Kerry Bauman, Ecologist
- Jennifer Rice, Green River Basin Coordinator
- HDR lead consultant team

Partner: City of Kent

- Parks: Dir. Jeff Watling
- Public Works: Mike Mactutis

Themes from November 2014 Public Meeting

- Questions about flooding and project impacts
- Concern about impacts on the Green River Natural Resources Area
- Desire for safe and pleasant recreational experiences along the Green River Trail and Lower Russell Road.
- Questions about access to, and project impacts on, Van Doren's Landing Park

KC Flood Plan and Lower Green SWIF Goals

1. Reduce risks from flood and channel migration hazards
2. Avoid or minimize environmental impacts of flood hazard management
3. Reduce the long-term costs of flood hazard management

Vision:

Improve flood protection, for current and future generations, in a way that builds economic, ecological and community resiliency

Goals:

- Integrated River & Floodplain Management
- Flood Protection
- Vegetation Management
- Ecological Resiliency
- Economic Resiliency
- Community Resiliency

Lower Green River Watershed Characteristics



- Green River (21 miles; river mile 11-32)
 - Levees = 18 miles; Revetments = 10 miles
- Four cities (Auburn, Kent, Tukwila, Renton) and King County
- Aging system of levees – built to protect agricultural land uses, not regionally significant urban areas
- Slope stability and toe scour issues
- Other deficiencies – vegetation, encroachments, and animal burrows
- Current flood containment = 12,000 cfs (approx. 140-year event)

Lower Green River: Context



Socio-Economic

- \$7.3 billion in floodplain including:
 - 100,000 jobs
 - 100 million square feet warehouse and distribution space (2nd largest on West Coast)
 - Comprises 1/8th of the GDP for WA State
 - Annual taxable revenue of \$8 billion

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, Starbucks roasting plant, and REI headquarters.

Lower Green River: Context



Salmon Populations & Habitat

- All species of salmon present, including ESA-listed Chinook salmon
 - Historical pop. approx. 38,000
 - 40-year average = 5,000
 - Low of 800 adults in 2009
 - 25-65% hatchery origin
- Limited spawning in Lower Green (above RM 24)
- Lethal water temperatures ($> 23^{\circ}\text{C}$) have occurred in Green River mainstem (July 2006); TMDL water quality standard is 16°C
- Tribal fishing rights

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°C to be applied from September 15th through July 1st.

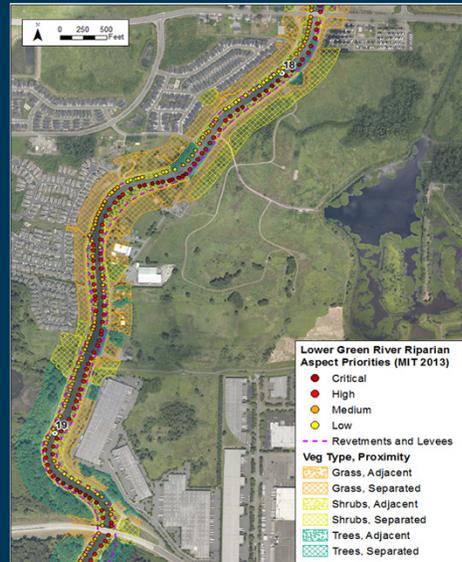
Local jurisdictions throughout the Green River basin are responsible for implementing salmon recovery plans under the ESA, complying with the Clean Water Act (CWA), the Federal Emergency Management Agency's (FEMA) development standards, and mitigating impacts on habitat that may result from flood risk reduction projects. These complex issues require key policy considerations of levee system management options and implications.

Lower Russell Reach – Current Habitat

Aquatic (in-water) Habitat

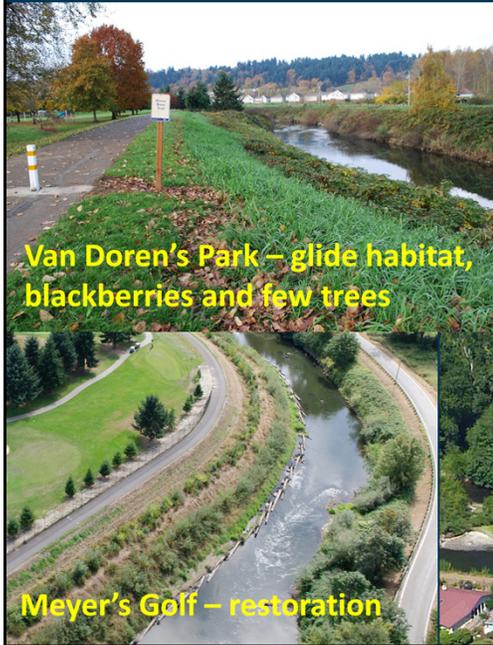


Riparian (Shoreline) Habitat



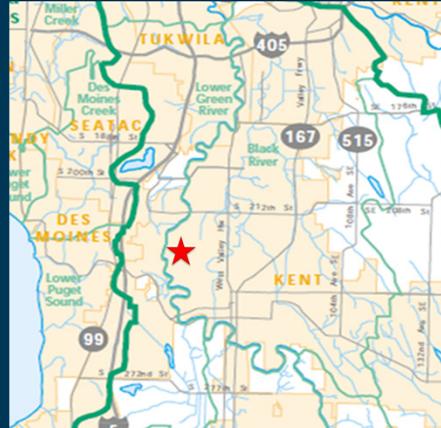
The map on the left of the slide shows the characterization of river pattern. Most of the river along the project is glide with one (large) pool. The deepest known pool in the Lower Green River is along this stretch of the river and is an important habitat feature for migrating salmon. The map on the right shows riparian conditions and priorities for providing shade along the project length. Lack of shade and mature tree canopy in the Lower Green River contributes to high water temperatures, which is detrimental to returning salmon.

Lower Green River– Current Habitat Types



Lower Russell Project Location

City of Kent along the right (east) bank of the Green River between S 212th St and Veterans Drive/S. 228th St bridges.



Having covered the flood control planning and project context in relation to Green River valley we now turn to the project. The following slides present the project scope of work, budget and schedule and then discuss current work to date.

Along the project length we have an existing system of levees and rock revetment lining the river bank making up one flood containment system.

Lower Russell Rd Levee Setback

Goal: Remove and replace the existing flood containment system of levee and revetments in order to provide long-term flood protection and improve riparian and aquatic habitat

Need: The existing system of levee and revetments do not meet current engineering design standards.

- The system is prone to scour and slope instability
- Lower Green River valley at increasing flood risk
- Maintenance costs increasing



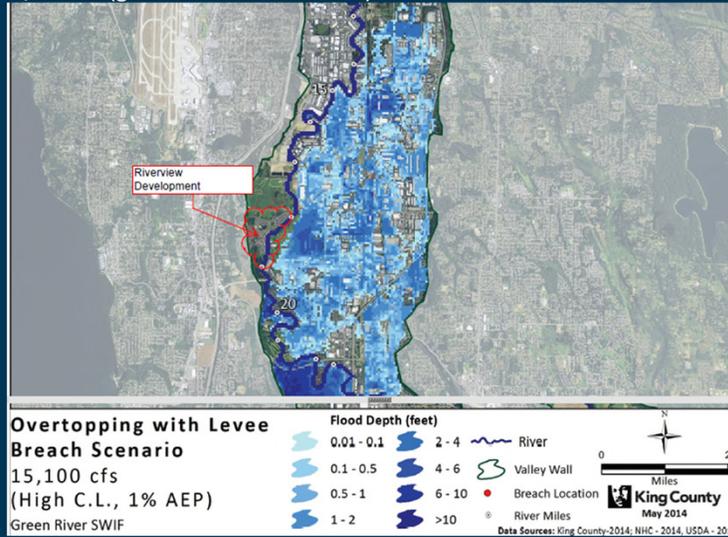
Lower Russell Road Levee 2006 Flood Photo

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.

Lower Green River Valley Flood Mapping

Riverview Development currently has a low risk of flooding compared to most of the lower Green River valley

Under existing conditions the project will have a negligible change in flood risk up to at least 15,000 cfs (greater than the 1% AEP)



The Flood Control District plans on improving the levee along Riverview Development as a future project. Today the threat of flooding for Riverview is very low and this project will have little to no impact on Riverview. The Lower Russell Levee Setback project will have the following impacts on the west bank (Riverview):

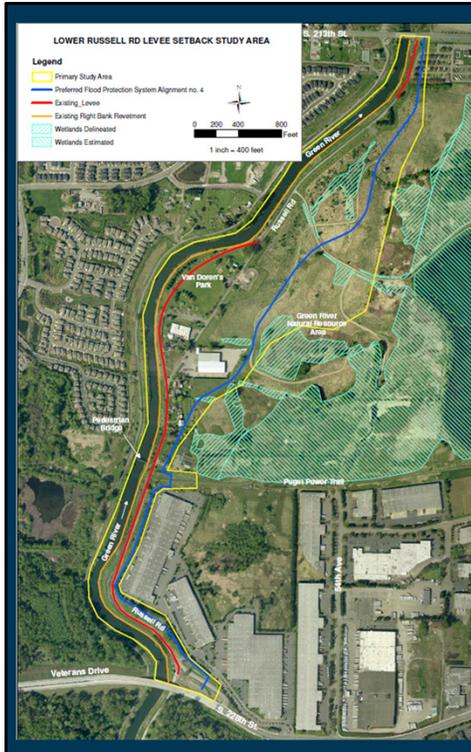
- Under existing conditions upstream (south) of 228th Street, there will be negligible change in flood risk up to at least 15,000 cfs (greater than the 1% AEP).
- Above 15,000 cfs the increase in flood risk to Riverview is felt to be very small under existing conditions.
- The Project will contain flow along the east bank that would otherwise overtop the existing levee. However its impact on the west bank under existing conditions will be limited to the lowest probable events (near 0.2% AEP and lower). The limited impact is due to the higher ground elevations within Riverbend and the floodwaters that would leave the river upstream (south) of 228th Street.
- When the future (yet unscheduled) upstream flood containment system is rebuilt to the same design standard as this Project, then the flood risk could increase under the lowest probable events for Riverview. The risk increase assumes a worst case scenario that the west bank flood protection system protecting Riverbend is the last to be built, but the scheduling of projects hasn't yet been determined by the Flood Control District.

Flood Protection System Alignment

- Four alignment alternatives from the Lower Russell Setback Levee Alternatives Analysis, and SWIF Alternative 3 were considered
- Site constraints limit options available at the north and south (downstream and upstream) ends of the project



Four flood containment alignments were evaluated with the fourth alignment added after public input. A fifth alignment from a separate project (SWIF Alt 3) was also considered by the FCD. The alignments differ only in the middle of the project area. Otherwise, they all share a common (red) alignment at the north and south ends of the project length.



Preferred Flood Protection System

County project team with Kent staff have determined Alignment #4 as the preferred alignment.

All project alternatives still under consideration are based on alignment #4.



Lower Russell Project Alternative 4B

- Levee north of PSE corridor to 212th Street with trail on top of levee crest
- Levee trail connects with existing trail under 212th St bridge - part of Green River trail
- Floodwall south of PSE corridor (adjacent TIAA-CREF property).
- Ends Russell Road at Van Doren's Park, removing the road north of Park
- Riparian and aquatic habitat within and north of Van Doren's Park
- Relocates Van Doren's Park

The preferred 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.

Existing Russell Rd will no longer continue past (north of) Van Doren's Park to 212th St, but end at the park with park access maintained from 228th Street.

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 north of existing Van Doren's Park. Within and adjacent to Van Doren's Park riparian habitat is proposed. Both areas will result in approximately 17 acres of new aquatic and riparian/upland habitat created or enhanced west of and adjacent to the existing GRNRA boundary. Shoreline public access will be expanded with grading of shallower slopes to access the river.

Lower Russell Project Alternative 4B

- Additional riparian habitat in area of existing Van Doren's Park and Holiday Kennels
- Relocates and enhances amenities of Van Doren's Park



LOWER RUSSELL ROAD LEVEE SETBACK PROJECT
VAN DOREN'S PARK RELOCATION CONCEPT



PARKS, RECREATION &
COMMUNITY SERVICES



Lower Russell Project Budget and Timeline

Cost Estimate:

- \$38 - \$40 million
- Existing FCD Budget - \$17.4 million
- Floodplains by Design (grant application) - \$4.9 M
- Conservation Futures grant - \$0.75 M

Timeline:

- Project initiated – Jan. 2014
- Predesign: August 2014 – Sept. 2015
 - Decision on selected alternative – June/July 2015
 - 30 % design and baseline of schedule and budget – Sept. 2015
- Final Design and Contract Procurement: Nov 2015 to April 2017
- Construction: May 2017 to May 2018?

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.

Project Contact Information

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