Lower Russell Levee Setback Project

Open House and Presentation
Kent Regional Library
5:30 – 7:15 p.m.

June 25, 2019

Department of Natural Resources and Parks
Water and Land Resources Division
River and Floodplain Management Section
Erik Peters (King County) and Mike Mactutis (City of Kent) 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.
Lower Green River Watershed Characteristics

- Lower Green River: 21 miles (between River Miles [RM] 11 – 32)
  - 18 miles of levees
  - 10 miles of revetments
- Four cities and King County (Auburn, Kent, Tukwila, Renton)
- Aging system of levees built to protect agricultural land uses
- Slope stability and toe scour issues
- Other deficiencies:
  - vegetation, encroachments, animal burrows
- Current flood containment:
  - 12,000 cfs (approx. 140-year event)

Project context in relation to Green River valley and flood protection facilities
Lower Green River Watershed Economy

- $7.3 billion in structures and contents in the floodplain
- More than 100,000 work in the valley
- 100 million-square-feet of warehouse and distribution space
- Represents one eighth of the State’s GDP
- Annual taxable revenue of $8 billion

*Based on 2010 information*

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.
Salmon Populations and Habitat

All species of salmon are present, including ESA-listed Chinook salmon, steelhead and bull trout.

- Limited spawning in Lower Green (above RM 24)
- Water temperatures sometimes lethal (>23°C, July 2006)
- Protected by tribal treaty 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 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.
Lower Russell Levee Setback

Project Goals:
• Increase flood containment capacity
• Provide a flood protection system that includes 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

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.
This is the 4th public meeting. Two meeting were held prior to alternative selection and 30% design. A third meeting was held after 60% design. A future meeting will be held just prior to Phase 2 construction.
An overview of the primary Project elements:

Flood Protection System:
1. A new 2500 LF 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. 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)
2. A new 4950 LF levee extending from the vicinity of the intersection between Russell Road and the PSE Corridor Trail to its intersection with S. 212th Street. The levee will have a trail running on the levee crest for recreational use, maintenance access and police/emergency vehicular use.
3. Bank stabilization measures in the form of a launchable rock pad in the vicinity of S. 212th Street and flow deflectors (barbs).

Roads:
1. 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.

2. 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.

3. Russell Road entrance to the relocated Van Doren’s Landing Park relocation.

Excavation:
1. Approximately 326,000 CY of excavated volume
2. Completion of mass grading of portions of the right bank and right bank floodplain to create new riparian and aquatic habitat.

Habitat:
1. 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.
2. Shoreline public access will be expanded with grading of shallower slopes to access the river.

Recreation:
1. Relocation of Van Doren’s Landing Park east of its current location in order to allow creation of a new riparian habitat area.
2. 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. The existing regional trails on both project ends will be connected with a dedicated trail (versus sharing the existing road).
3. Relocation of the existing boat launch to a location in the vicinity of River Mile (RM) 19.0.

Utilities: Relocation of utilities as required due to work associated with this project. Includes 3700 LF of water main

Landscaping: Landscaping of the Project area. Except for the park area the landscaping will be similar to the GRNRA with native trees and shrubs.
Property Acquisition: Two commercial businesses, portion of KOA campground and 5 residential properties
The project will be constructed in phases in order to begin construction in 2019. Each phase will be bid separately. Phase 1 will include most of the floodwall and water main work. Phase 2 will include the remainder of the project, including the levee, habitat restoration and park relocation. The phased construction approach is necessary due to delay in acquiring US Army Corps of Engineers permit. During Phase 1 construction (estimated July 2019 thru April 2020) Van Doren’s Park, trails and Russell Road will remain open to the public.
Russell Road, Van Doren’s Landing Park and all trails will remain open during construction. The only exception is when water main will be constructed across a gravel trail in the GRNRA and then the trail crossing will be closed. Construction vehicles will be operating near and across the PSE corridor trail near Russell Road. The public is asked to be aware and yield to vehicles as the posted truck crossing. Between Russell Road and the 228th Street bridge the trail will be rerouted to the Russell Woods driveway, which will have a paved trail section. The driveway will be shared with vehicles, similar to Russell Road.
**Lower Russell Levee Project**  
**Estimated Cost and Schedule**

<table>
<thead>
<tr>
<th>Cost Estimate:</th>
<th>Schedule:</th>
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<tbody>
<tr>
<td>• Project Construction</td>
<td>• Phase 1 Construction</td>
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<tr>
<td>– $52.8 million</td>
<td>– July 2019 thru April 2020</td>
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<tr>
<td>• Phase 1 Construction</td>
<td>• Bid Phase 2</td>
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<tr>
<td>– $7 million</td>
<td>– Late 2019 (permit dependent)</td>
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<tr>
<td>• Phase 2 Construction</td>
<td>• Phase 2 Construction</td>
</tr>
<tr>
<td>– $22 million</td>
<td>– 2020 thru 2021</td>
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<tr>
<td>• Planting</td>
<td>• Planting</td>
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<tr>
<td>– $0.8 million</td>
<td>– Fall 2021</td>
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*NOTE: Construction costs do not include 10% contingency, but do include 10% tax*

Phase 2 Construction: 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 US Army Corps of Engineers permit acquisition.

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.