

# LOWER TOLT RIVER CORRIDOR PLAN

## PUBLIC MEETING

Thursday, January 15th, 2015

6:30–8:45 pm

Carnation Middle School, Commons Room

**Goal/Purpose:** *Share updated information about flood risk and habitat conditions. Get residents' and community feedback on conditions today, and possible approaches and tools for the future.*

**6:30 – 7:00 Open house (join county staff to view flood maps of your neighborhood)**

**7:00 – 7:10 Welcome & Introduction**

**7:10 – 7:25 Presentation of Existing Conditions**

- What is the corridor study – why are we doing it?
- Concerns related to flood hazards/risks and habitat conditions

**7:25 – 7:35 Community Feedback Discussion**

- Do these findings make sense?
- Are there other problem areas?

**7:35 – 7:45 Moving Forward – Goals/Objectives and Potential Actions**

- Initial goals for addressing flood and habitat concerns
- Community interests which could shape selection of river management actions
- Potential approaches and tools to reduce flood risk and restore habitat:
  - » Continue existing practices (e.g., repair levees in place)
  - » Gravel management
  - » Levee setback/removal
  - » Road/bridge alterations
  - » Home and open space acquisitions

**7:45 – 8:00 Community Feedback Discussion**

**8:00 – 8:10 Next Steps and Wrap Up**

- Continue outreach to neighborhood groups and other interested parties
- Evaluate potential tools and actions to develop a recommended corridor approach
- Share the recommended corridor approach and get feedback from the community

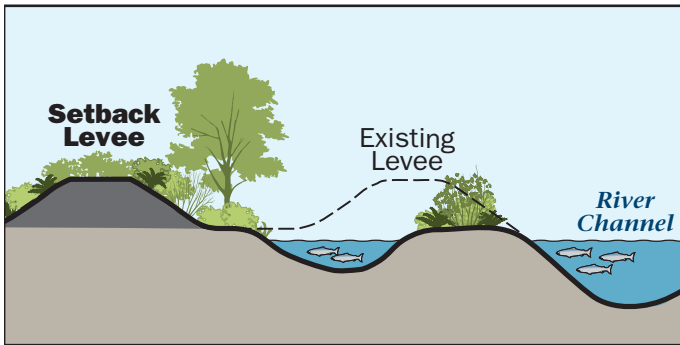
**8:10 – 8:15 Community Feedback Discussion**

**8:15 – Adjourn and resume open house until 8:45**



# TOOLS FOR TOLT RIVER MANAGEMENT

## LEVEE SETBACKS



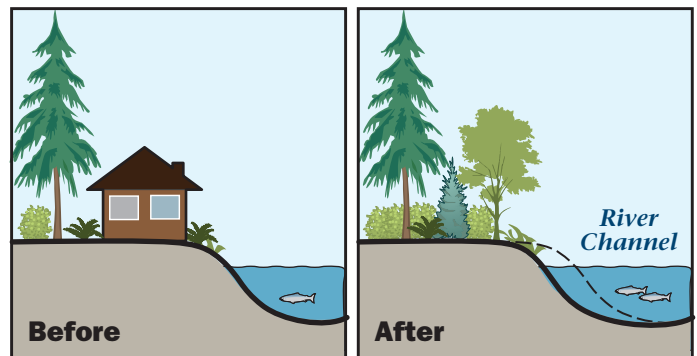
Older flood protection facilities can be removed and reconstructed to modern standards at some distance from the edge of the river bank. Levee setback projects open up and reconnect previously cut-off floodplain and side channels, lowering floodwater velocities and water surface elevations, and providing a larger area for sediment to accumulate. The levee setback project at Tolt-McDonald Park reconnected over 40 acres of floodplain and aquatic habitat, and provided recreation amenities to the community.

## MAINTAIN AND REPAIR EXISTING LEVEES/REVETMENTS

Existing levees and revetments can be maintained and repaired as needed. This can be less costly in the short run than complete reconstruction, but recurrent damages can lead to longer term costs as levees deteriorate. Many of the existing levees and revetments were constructed at least fifty years ago; they provide inconsistent levels of flood protection and do not meet current design standards. This can result in seepage and overtopping, frequent damages, and risk of failure during large flood events. Additionally, as gravel continues to accumulate within the channel, flood risks increase.

## HOME BUYOUTS AND OPEN SPACE ACQUISITION

Home buyouts provide permanent and complete protection from flood and channel migration hazards. These projects reliably eliminate risks to people and their homes, and save money by reducing damages, flood insurance claims, and emergency response. Purchases of homes and vacant parcels are also critical for salmon habitat protection and restoration. For example, buyouts in the San Souci neighborhood improve public safety and restore habitat. Buyouts are typically based on fair market value with willing sellers.



## REMOVE EXISTING LEVEES/REVETMENTS

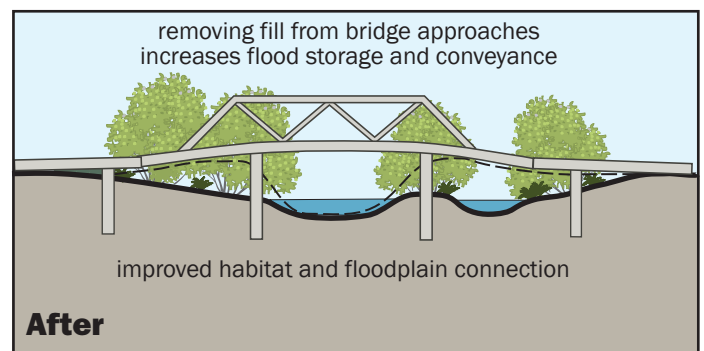
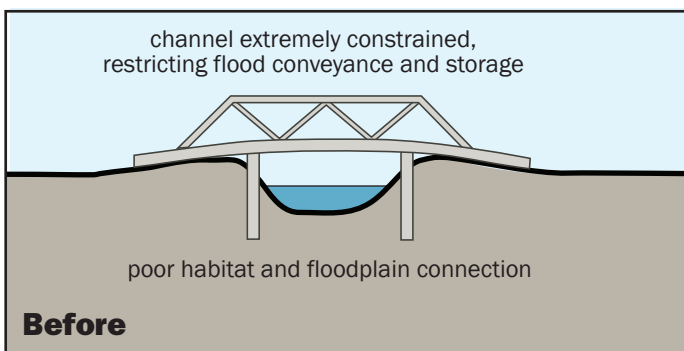
In some locations, where there are no homes or other infrastructure that require protection from flood and erosion hazards, existing levees or revetments can be removed. This can only occur once all homes in a high risk location have been purchased and access roads have been decommissioned. Once facilities are removed, public expenditures to repair or maintain them are no longer necessary. Levee and revetment removal re-connects the river to its floodplain and historic side channels, increasing the river's capacity to store flood waters and sediment, and restoring natural river processes.

## RAISE LEVEES IN PLACE

An existing levee can be raised or widened in its original location. A new levee could be constructed to higher standards but it may impose additional limits on flow conveyance and storage of flood water, reduce natural river processes and impair habitat conditions. While this technique can be locally effective at reducing flood risk, it can have significant upstream and downstream impacts due to containment of flows and it would likely require more land for the larger levee footprint.

## BRIDGE AND ROAD MODIFICATIONS

The SR-203 Bridge across the Tolt River is low and has a short span that can back up flood flows and rack up wood and sediment. Elevating bridges and expanding their length can increase conveyance of flood waters, reduce flood elevations, and restore natural river processes, especially when combined with adjacent levee setback projects. Roads along the river are often overtopped, some at frequent and minor flood levels. Portions of these roads could be elevated to improve residents' access during floods, or unneeded access roads could be removed where all at-risk homes have been bought out.



## GRAVEL REMOVAL

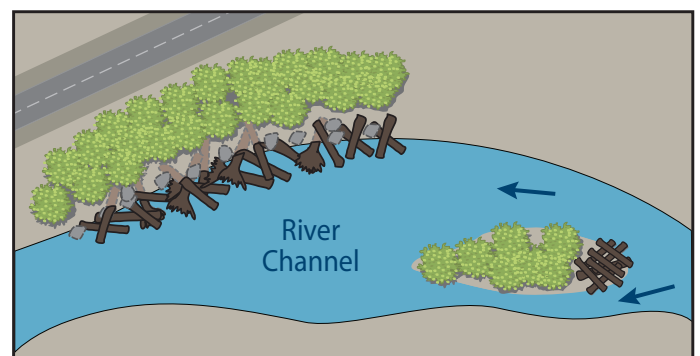
Excavating gravel from gravel bars within the river channel can provide more room for flood waters. Gravel removal can locally reduce flood elevations for a limited time, but likely requires repeated action to maintain flood reduction benefits. Gravel removal must be designed and implemented carefully to avoid impacting fish and wildlife species or the stability of existing levees, and to allow permits to be obtained.

## LAND USE MANAGEMENT

Land use policies and regulations can prohibit new or expanded development in high risk and ecologically sensitive areas, helping to keep people and structures out of harm's way. Examples include mapping of channel migration zones and landslide areas, and related regulations limiting development in these areas.

## NEW IN-STREAM WOOD STRUCTURES

In-stream wood structures can be placed in the river channel to modify hydraulic conditions and to mimic naturally occurring logjams. Structures can be built along a river bank adjacent to a road to protect the bank from scour and erosion. Engineered Log Jams (ELJs) can be constructed at the edge or in the middle of a channel or floodplain to split flows, deflect energy, and increase habitat complexity.



## PROJECT AREA

The Tolt River Corridor Action Plan focuses on a six-mile stretch of the lower Tolt River, upstream from the confluence of the Tolt and Snoqualmie rivers near the City of Carnation. The study area extends to the end of Tolt River Road Northeast/361st Avenue Northeast.

## BACKGROUND

This section of the Tolt River has significant flood and erosion hazards and is a high priority for salmon habitat restoration. There are homes, businesses, and farms adjacent to the river in this six-mile area. The purpose of the Tolt River Corridor Action Plan is to update information King County has about the existing physical conditions of the river and to quantify the benefits of potential actions to restore natural river processes, maximize flood safety, and reduce the costs and impacts of flood and channel migration hazard management along the lower Tolt River. Costs and benefits of potential actions will be evaluated, and with community input, a preferred corridor approach will be selected.

## PROVISIONAL GOALS AND OBJECTIVES

- Goal 1: Reduce risks from flood and channel migration hazards.
- Goal 2: Reduce long-term costs of flood hazard management.
- Goal 3: Improve salmonid habitat and restore natural river processes.
- Goal 4: Incorporate stakeholder and community input into Corridor Planning process.

## POTENTIAL CORRIDOR APPROACHES

- 1 Encourage natural river processes by setting back or removing flood protection facilities, modifying bridge openings, and pursuing extensive buyouts of homes in highest-risk areas.
- 2 Prevent flooding and channel migration to the extent feasible by reconstructing flood protection facilities and reconstructing or elevating roads at or near their current locations to higher flood protection standards.
- 3 Continue existing management practices. Continue to repair levees, revetments, and roads when they are damaged. Continue to buy the most at-risk properties as funding becomes available.

The preferred approach is likely to be a combination of the above, and tailored to specific locations.

## CONTACT

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This project is sponsored by the King County Flood Control District and the Snoqualmie Watershed Forum.

