

Tolt River Corridor Plan

Flood Control District
Board of Supervisors
March 16, 2015

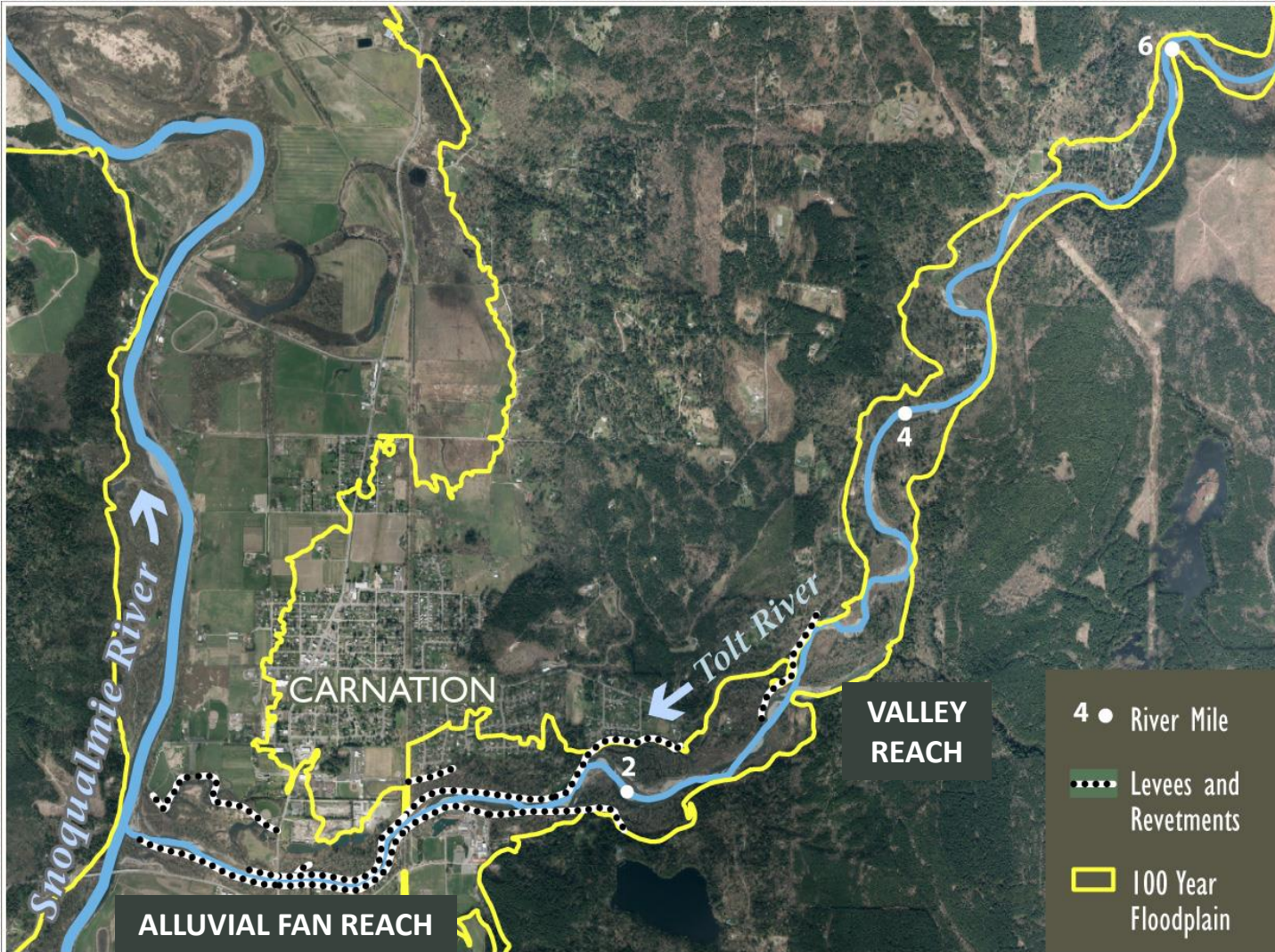


King County



**KING COUNTY
FLOOD CONTROL
DISTRICT**

Planning Area



Key Conditions and Problems

- Flooding
 - Deep and fast flow areas
 - Homes access cut off
- Channel Migration
 - Lateral migration
 - Avulsions
 - Breach hazards
- Landslides
- Impaired Habitat



Levee breach (Tolt 1.1)



SR 203 overtopping isolates Carnation

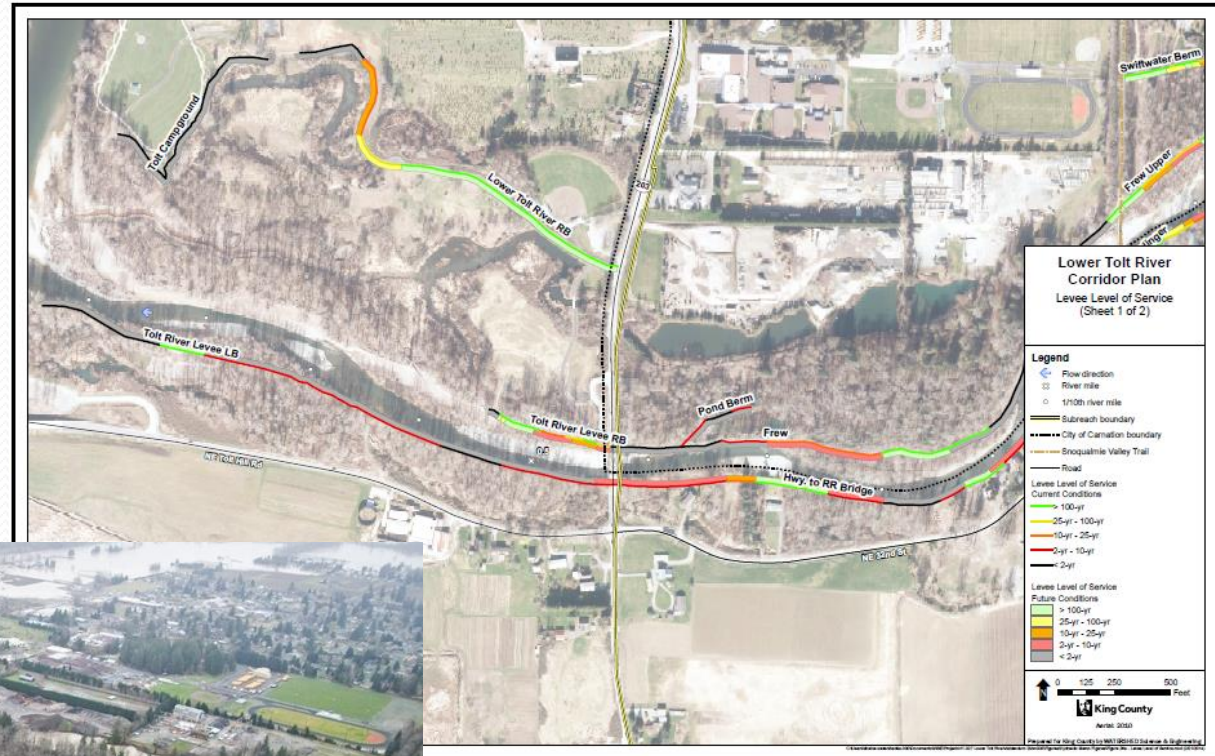


Channel migration (San Souci)

Alluvial Fan Reach

Key Risks

- Flood hazards
- Breach hazards
- Risks to transportation



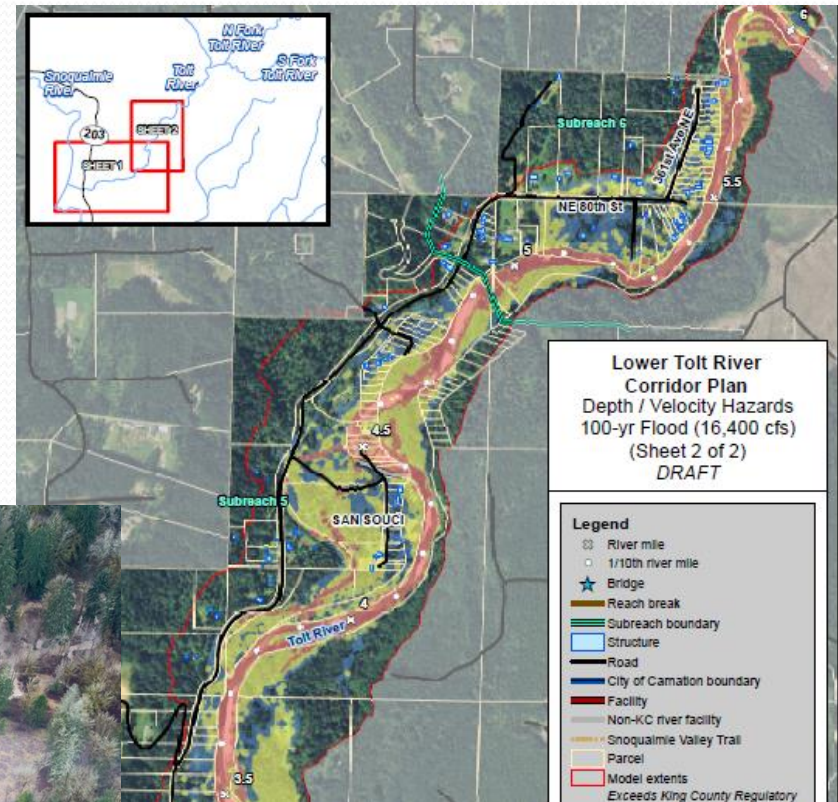
Mapping of levee level of service

Levee breach and SR 203 flooding, Jan. 2009

Valley Reach

Key Risks

- Channel migration and avulsion hazards
- Deep and fast flow hazards
- Isolation and restricted access



Mapping of deep and fast flow areas

*Valley reach,
January 2015*

January 5, 2015



Tolt River Road inundated



Frew levee overtopping



Flooding and erosion threatened homes



Tolt Hill Road inundated

Key Findings

- Levees unstable, do not contain floodwaters
- 60 homes in high risk areas
- 40 homes isolated at 2-year flow
- Hwy 203 and Tolt River Road subject to inundation and potential channel migration hazards
- Gravel build up worsening conditions
- Habitat impaired, especially in lower 2 river miles

Goals and Provisional Objectives

Goal 1

Reduce risks from flood and channel migration hazards

- Consider future sediment accumulation and climate change
- Reduce levee breach hazards
- Mitigate risks from channel migration and avulsion hazards
- Consider risks over a long time horizon

Goals and Provisional Objectives

Goal 2

Reduce long-term costs of flood hazard management

- Implement sustainable solutions
- Reduce facility maintenance and repair costs

Goals and Provisional Objectives

Goal 3

Improve salmonid habitat and restore natural river processes

- Protect and improve floodplain habitats and off-channel connections
- Protect and improve instream aquatic habitat
- Protect and improve riparian habitat

Goals and Provisional Objectives

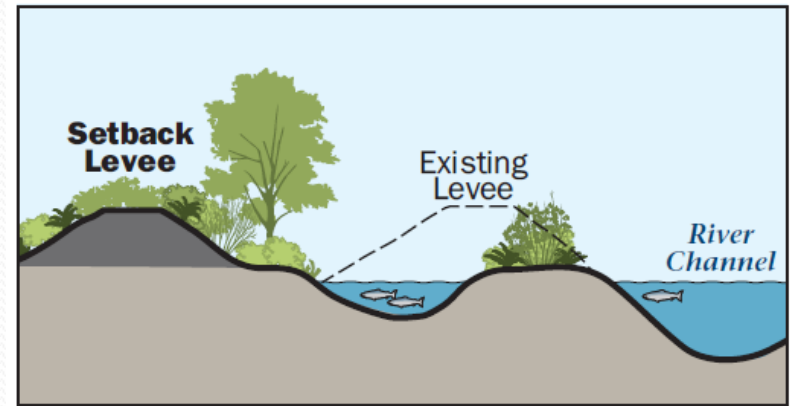
Goal 4

Incorporate stakeholder and community input into the Corridor Planning process.

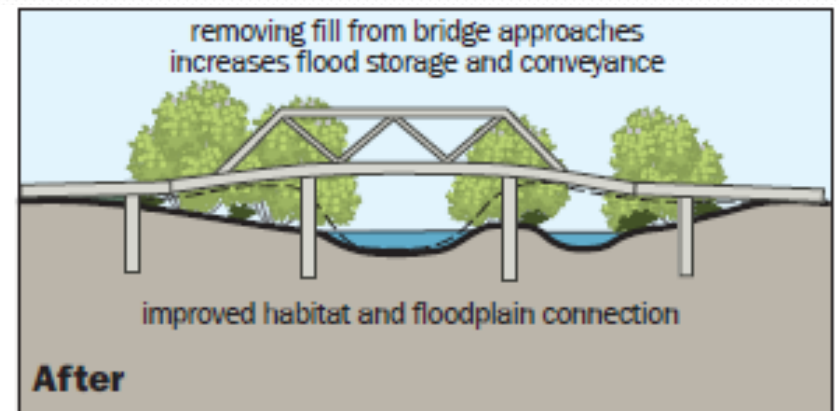
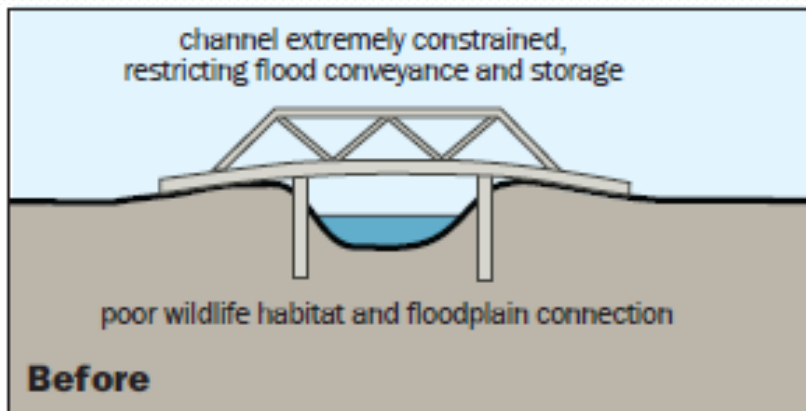
- Involve the community and stakeholders and incorporate their input
- Provide equitable outcomes to all in the community

Floodplain management tools

- Levee setbacks
- Raise or reconstruct levees and revetments in their current location
- Maintain and repair existing levees and revetments
- Bridge and road modifications



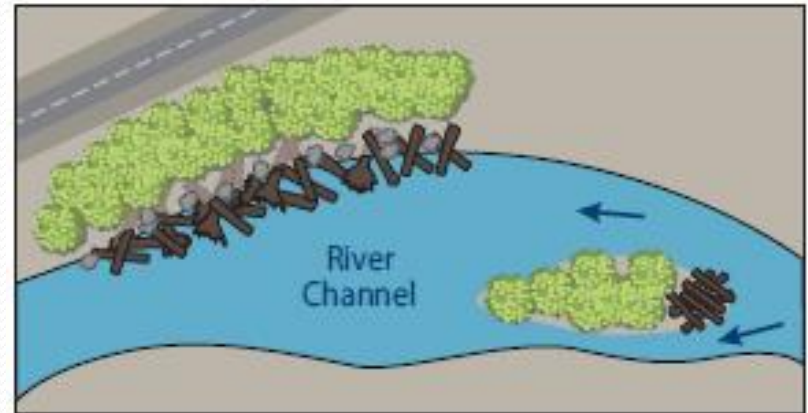
Levee Setback



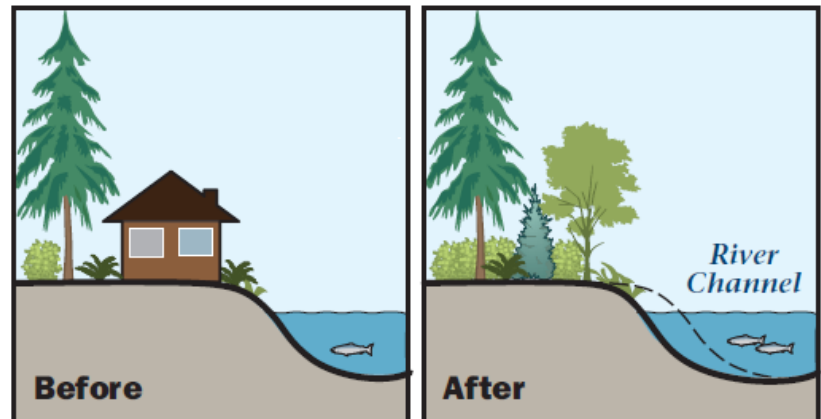
Bridge Improvement

Floodplain management tools

- New in-stream structures
- Gravel removal
- Removal of non-functioning levees and revetments
- Home buyouts and open space acquisition



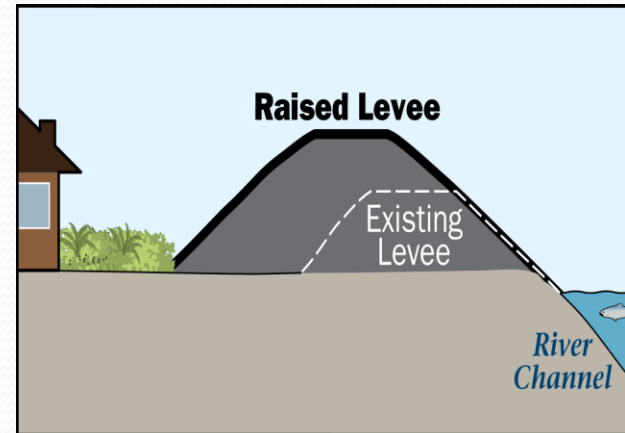
In-stream Structures



Home Buyout

Approach 1. Prevent flooding and channel migration

- Rebuild levees and roads in their current locations to higher standards
- Limit natural flooding processes



Example of levee reconstruction adjacent to river (Green River)

Approach 2. Continue Existing Management Practices



*Tolt River emergency repair
Jan. 2009*

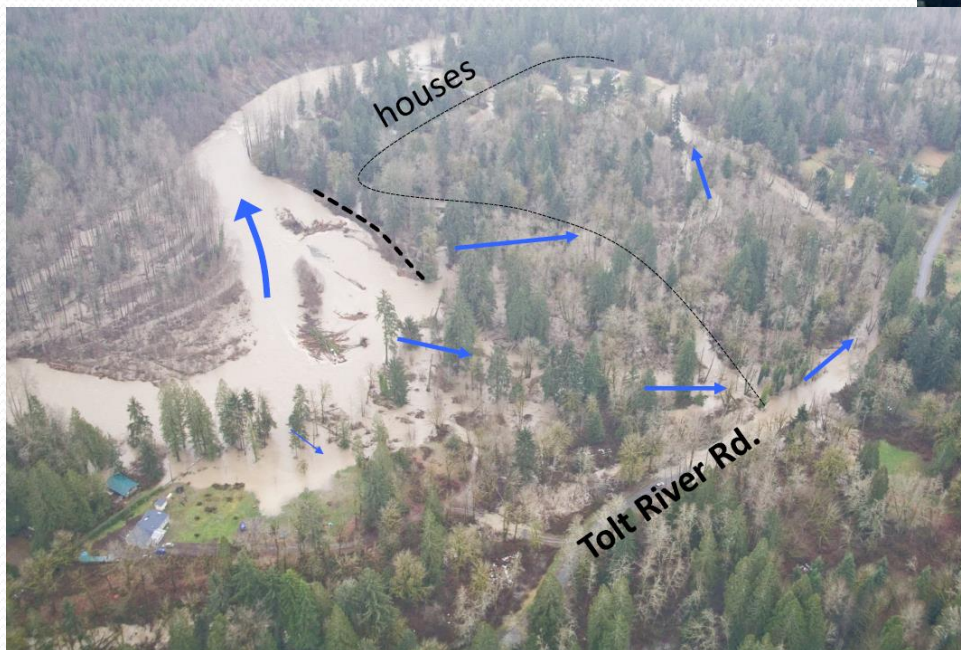
- Repair damages after they occur
- Make targeted improvements where possible

Approach 3. Accommodate natural river processes

- Levee setbacks
- Extensive home buyouts in the most hazardous areas
- Allow the river to naturally store and convey flood waters and sediment



*Lower Tolt River Floodplain
Reconnection Project*



*San Souci
neighborhood
Jan. 2009*

Community and Stakeholder Input

- Many “one on one” meetings, site visits
 - Residents
 - Large landowners – Remlinger, Girl Scout Camp
 - City of Carnation
 - Snoqualmie Tribe
 - Snoqualmie Forum
- Jan. 15 stakeholder workshop and public meeting
- Have discussed goals, objectives, approaches, tools

Community and Stakeholder Input

We have heard...

- Support for general approach
 - Use of technical information
 - Extensive public engagement
 - Stakeholder working sessions
- Significant interest and comments on:
 - Gravel management
 - Buyouts
 - Off-site impacts of projects
 - Multi-objective projects

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Supervisors

Tolt River
Corridor Plan



Questions? Discussion?

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