



Green River System Wide Improvement Framework, King County, WA

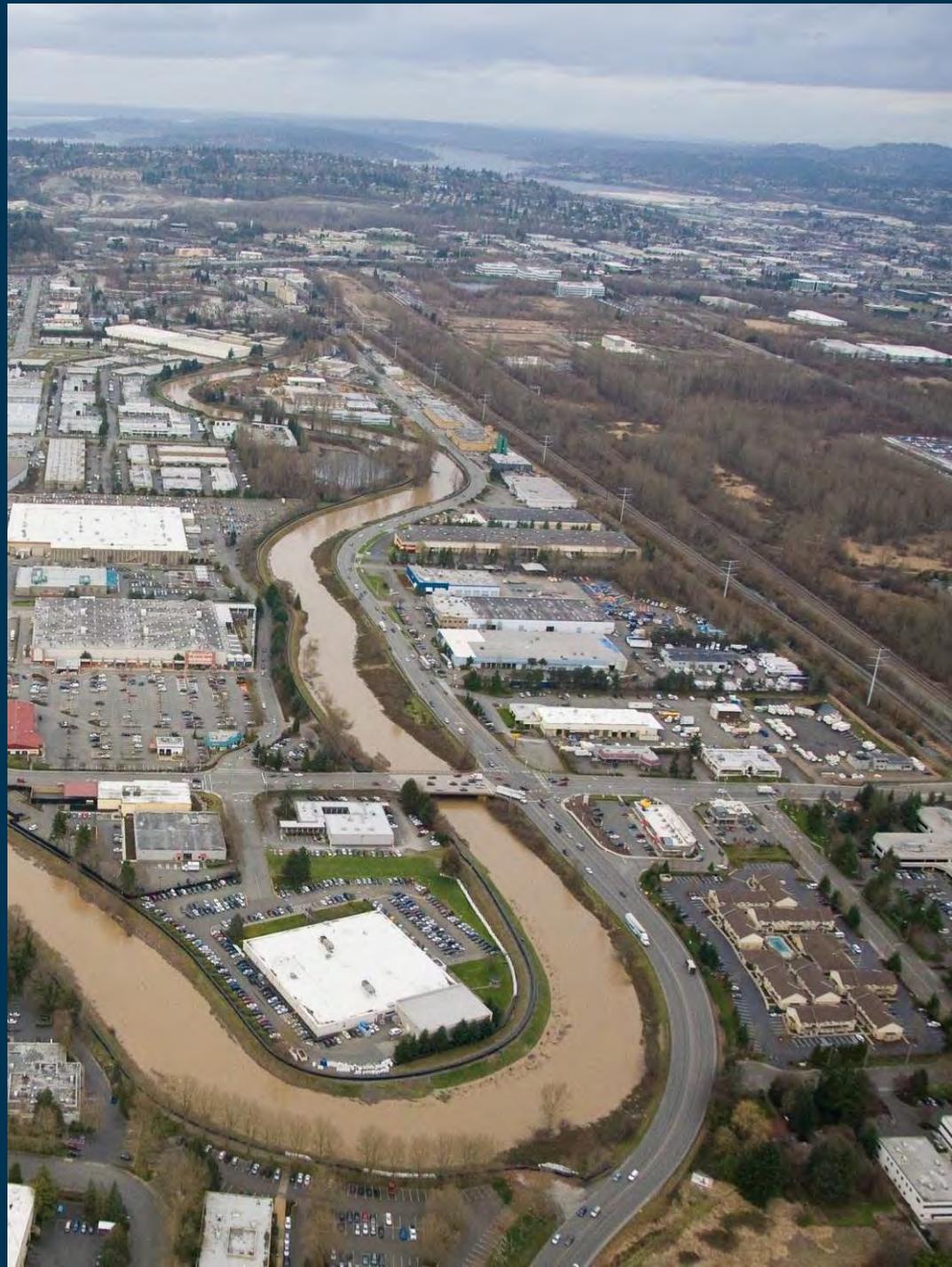
Public Meeting
September 23, 2014

Meeting Agenda

- 9:00 AM Welcome
- 9:15 AM Presentation
- 9:45 AM Q + A
- 10:00 AM Open House
- 11:00 AM Adjourn

We value your input!

Public comment forms are available and project staff are available to answer your questions.



Green Duwamish River Watershed



What is the Green River SWIF?



1. A U.S. Army Corps of Engineers planning process, being completed by King County Flood Control District
2. Ongoing engagement with cities, tribe, state/federal agencies, business community, environmental groups, WRIA 9 and other interested parties
3. Setting level of protection from flooding goals for the Lower Green River
4. Prioritized list of capital projects to achieve flood protection goals with coordinated sets of ecological, social and economic goals (eg. recreation, agricultural productivity, public safety)
5. Vegetation management plans to address large trees and shrub locations with respect to levees, to meet ESA, CWA, and PL 84-99 program standards

Green River SWIF Vision and Goals

VISION

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

GOALS

- Flood protection
- Vegetation management
- Economic resiliency
- Ecological resiliency
- Community resiliency

Lower Green River: Flooding History

Flooding and Flood Facilities

- Extensive flooding of Lower Green River Valley from 1890s to 1961
- Howard Hanson Dam built in 1961
- Most levees/revetments built in the 1960s to protect agriculture, not current land uses

Lower Green River Flooding, 1959



Lower Green River, 2009



Lower Green River Flood Protection Facilities

Current Lower Green River Statistics (21 miles in length):

- Over 17 miles of levees
- Nearly 10 miles of revetments



What is At Risk in the Lower Green River Valley? Flooding scenarios assuming current conditions

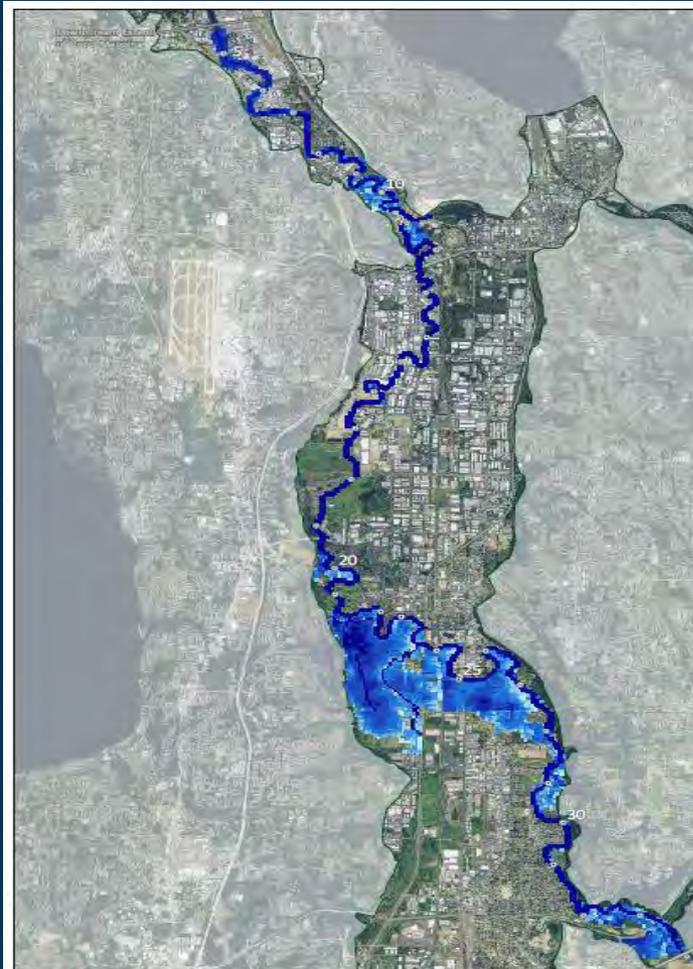


Figure 3.24 (DRAFT)
Levee Overtopping
no Breach
12,600 cfs
200-year, Median Flood
Green River SWIF



~100 year flood

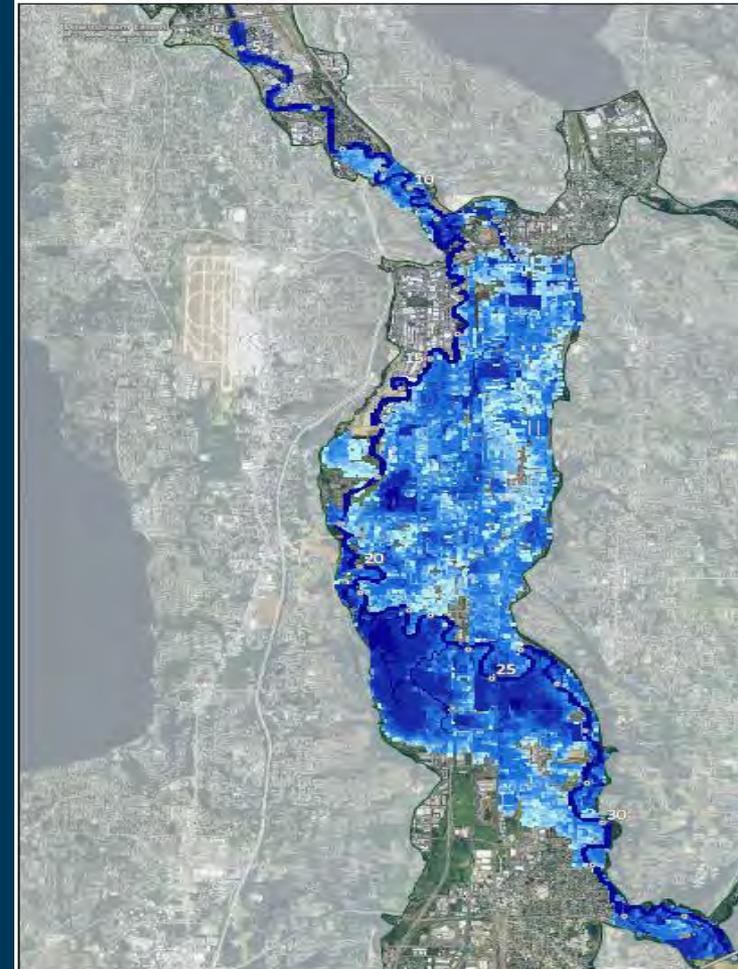


Figure 3.26 (DRAFT)
Levee Overtopping,
with Breach Scenario
18,800 cfs
500-year Median Flood
Green River SWIF



~500 year flood

What is At Risk from Flooding?

Economic Assets of the Lower Green River Valley



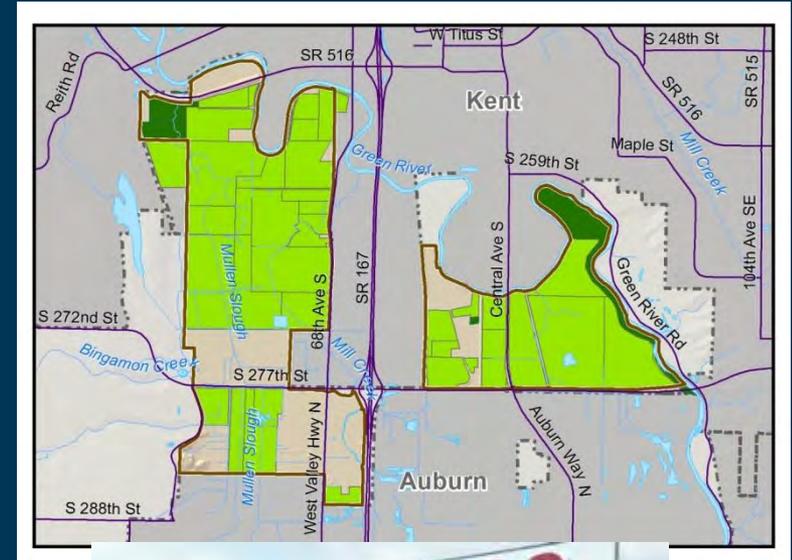
- \$7.3 billion in structures and contents
- 100,000+ jobs
- 100 million sf warehouse + distribution space (2nd largest on West Coast)
- 1/8th of the GDP for WA State
- Annual taxable revenue of \$8 billion
- Current levees not built to modern standards and do not meet flood protection goals

The "River of Green"

Social, Ecological, and Community Resources



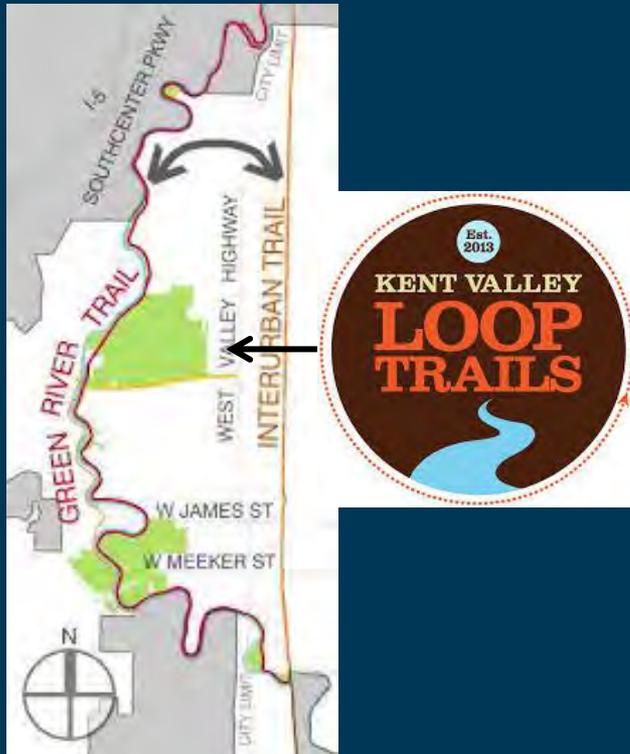
Lower Green River: Productive Agricultural Lands



King County Farmland Preservation Program

- Approved by KC voters in 1979
- Restrictive easements protect the soil resource
- Uses are restricted to ag and open space uses that do not impair the soil
- Very difficult to remove properties from the program
- Current agriculture lands lack sufficient drainage

Green River Regional Trail – A Regional and Local Asset



- 19 miles from Cecil Moses Park near Seattle's south boundary to North Green River Park in south Kent near Auburn
- Several important missing links need to be connected
- Local trail connections to valley cities, in planning

Lower Green River: Salmon



Salmon Populations + Habitat

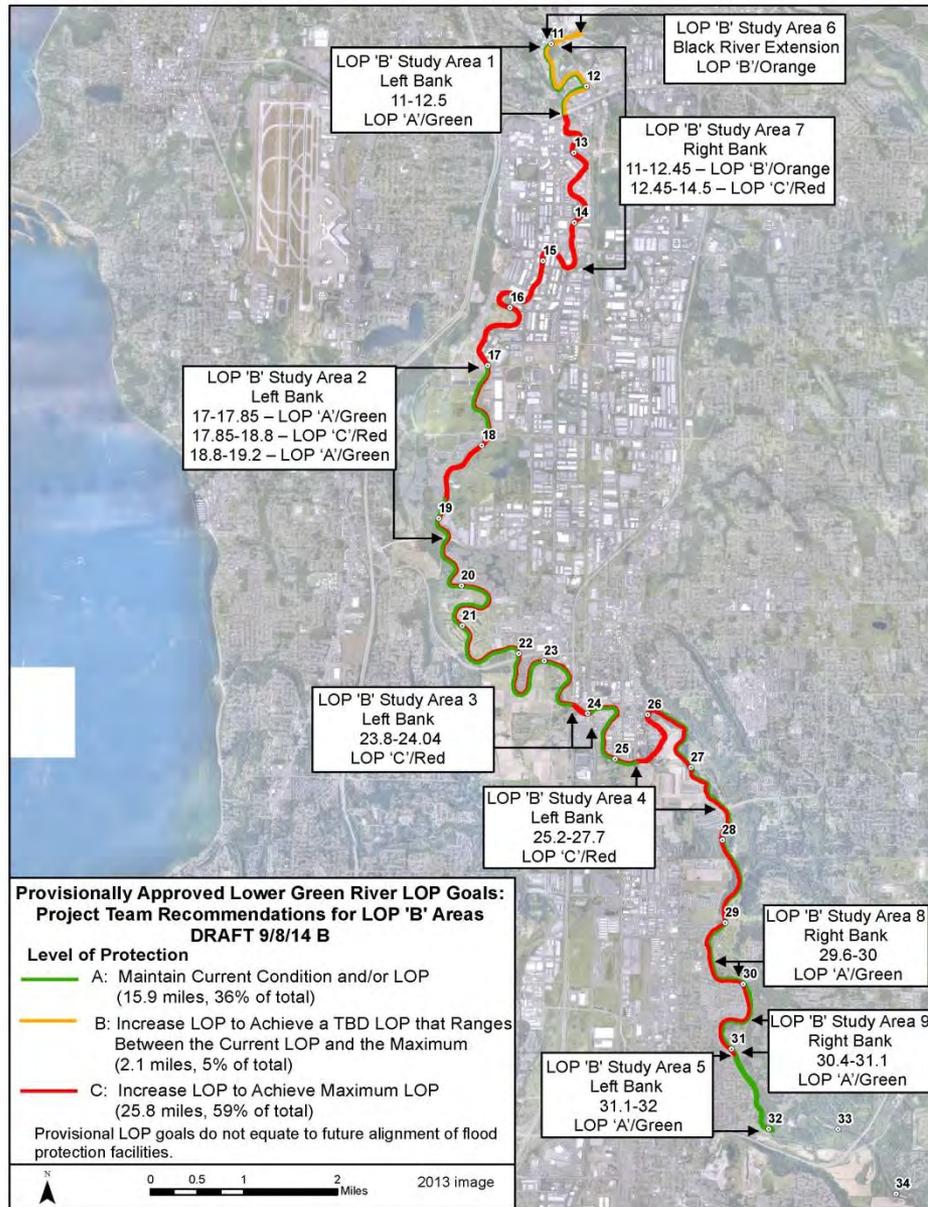
- All species of salmon present, including federal ESA-listed Chinook salmon
- Limited spawning in Lower Green (above RM 24)
- Lethal water temperatures ($> 23^{\circ}\text{C}$) have occurred in Green River mainstem (July 2006); TMDL water quality standard is 16°C
- Habitat restoration needed to recover fish populations
- Tribal fishing rights

Why are Flood Protection Goals Needed?

- 16+ miles of levees do not meet modern standards
- Howard Hanson Dam provides 140 year storage capacity, not 500 year, as it was originally designed
- Most of the Lower Green River contains a typical 100 year flood (~12,000 cfs with 1'-6' of freeboard)
- Green River SWIF defined Level of Protection goals will inform our future:
 - Budget decisions
 - Capital program delivery



Flood Protection Goals (provisional): Lower Green River



Level of Protection from Flooding Goals:

LOP Goal 'A' (green lines).

Maintain the current LOP and/or shoreline condition over time.

LOP Goal 'B' (9 orange study areas). Evaluate an increase in LOP, from the current flow rate to determine if LOP should change.

LOP Goal 'C' (red lines).

Achieve the maximum LOP of 18,800 cfs/500 year protection .

Three SWIF Alternatives

Alternative 1. (**black** lines) Constrained Channel Alternative (flood protection focus)

Alternative 2. (**red** lines) Less Constrained Channel Alternative (flood protection with coordinated social goals, i.e. habitat, recreation, agriculture).

Alternative 3. (**yellow** lines) The Least Constrained Channel Alternative (maximized habitat approach to achieving flood protection goals)



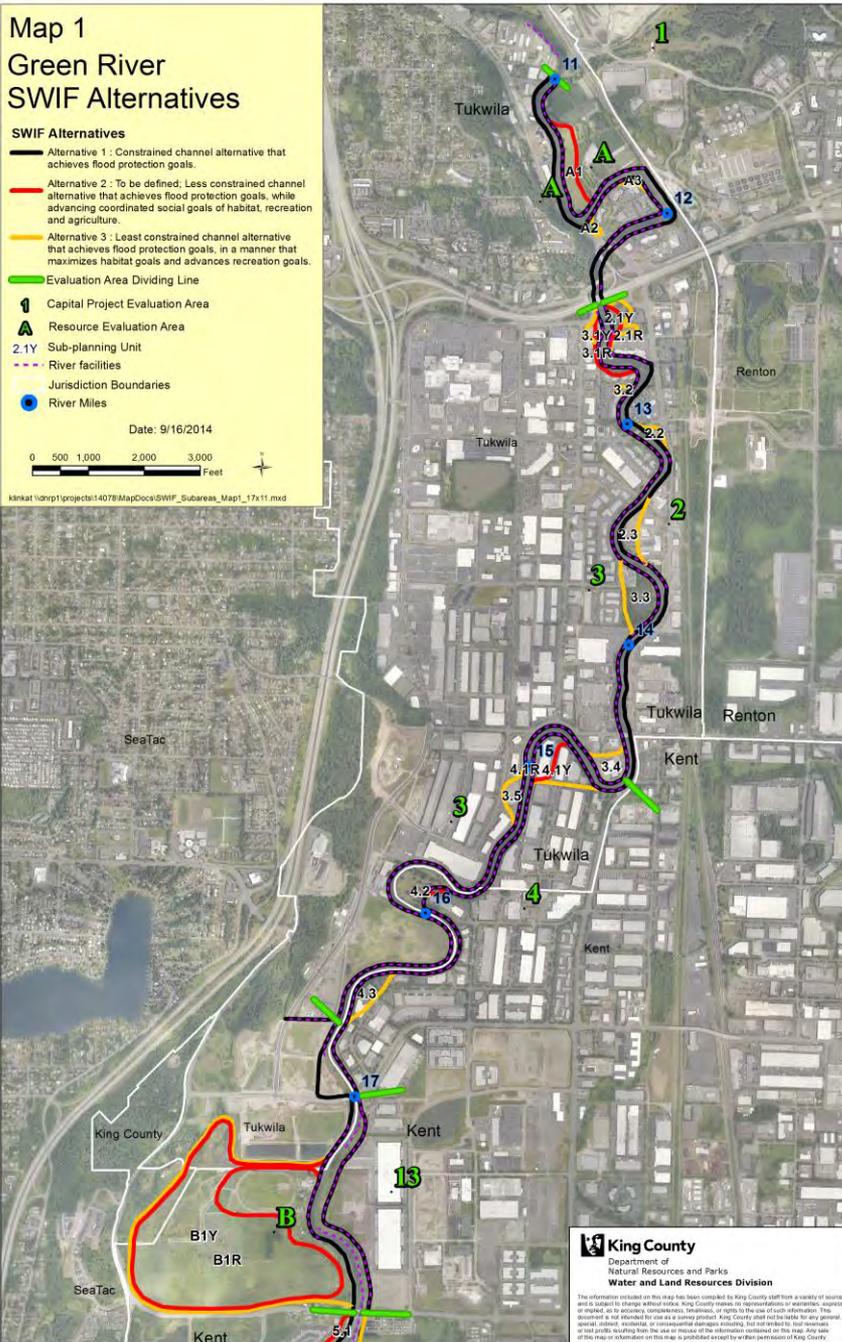
Map 1 Green River SWIF Alternatives

- SWIF Alternatives**
- Alternative 1 : Constrained channel alternative that achieves flood protection goals.
 - Alternative 2 : To be defined, Less constrained channel alternative that achieves flood protection goals, while advancing coordinated social goals of habitat, recreation and agriculture.
 - Alternative 3 : Least constrained channel alternative that achieves flood protection goals, in a manner that maximizes habitat goals and advances recreation goals.
 - Evaluation Area Dividing Line
 - 1** Capital Project Evaluation Area
 - A** Resource Evaluation Area
 - 2.1Y** Sub-planning Unit
 - River facilities
 - Jurisdiction Boundaries
 - River Miles

Date: 9/16/2014



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SWIF Alternatives (9-17-14)

Map 1 of 3

Downstream limit: Black River Pump Station
(Tukwila)

Upstream limit: South 200th St. (Kent)

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Water and Land Resources Division

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Map 2 Green River SWIF Alternatives

SWIF Alternatives

- Alternative 1: Constrained channel alternative that achieves flood protection goals.
- Alternative 2: To be defined; Less constrained channel alternative that achieves flood protection goals, while advancing coordinated social goals of habitat, recreation and agriculture.
- Alternative 3: Least constrained channel alternative that achieves flood protection goals, in a manner that maximizes habitat goals and advances recreation goals.

— Evaluation Area Dividing Line

1 Capital Project Evaluation Area

A Resource Evaluation Area

2.1Y Sub-planning Unit

--- River facilities

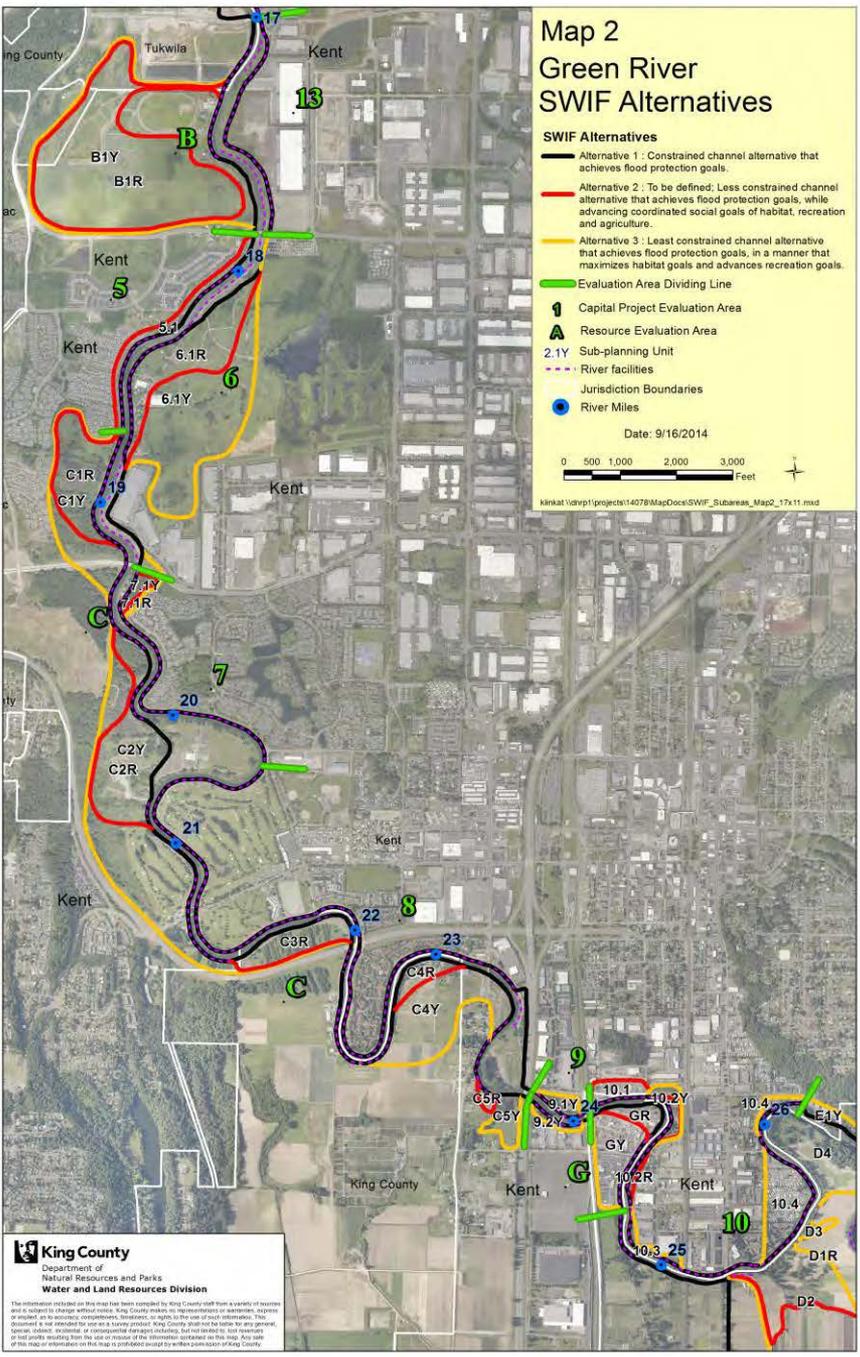
--- Jurisdiction Boundaries

● River Miles

Date: 9/16/2014

0 500 1,000 2,000 3,000 Feet

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SWIF Alternatives (9-17-14)

Map 2 of 3
Downstream limit: South 200th St. (Kent)
Upstream limit: Horseshoe Bend (Kent)

Map 3 Green River SWIF Alternatives

SWIF Alternatives

- Alternative 1: Constrained channel alternative that achieves flood protection goals.
- Alternative 2: To be defined: Less constrained channel alternative that achieves flood protection goals, while advancing coordinated social goals of habitat, recreation and agriculture.
- Alternative 3: Least constrained channel alternative that achieves flood protection goals, in a manner that maximizes habitat goals and advances recreation goals.

Evaluation Area Dividing Line

Capital Project Evaluation Area

Resource Evaluation Area

2.1Y Sub-planning Unit

River facilities

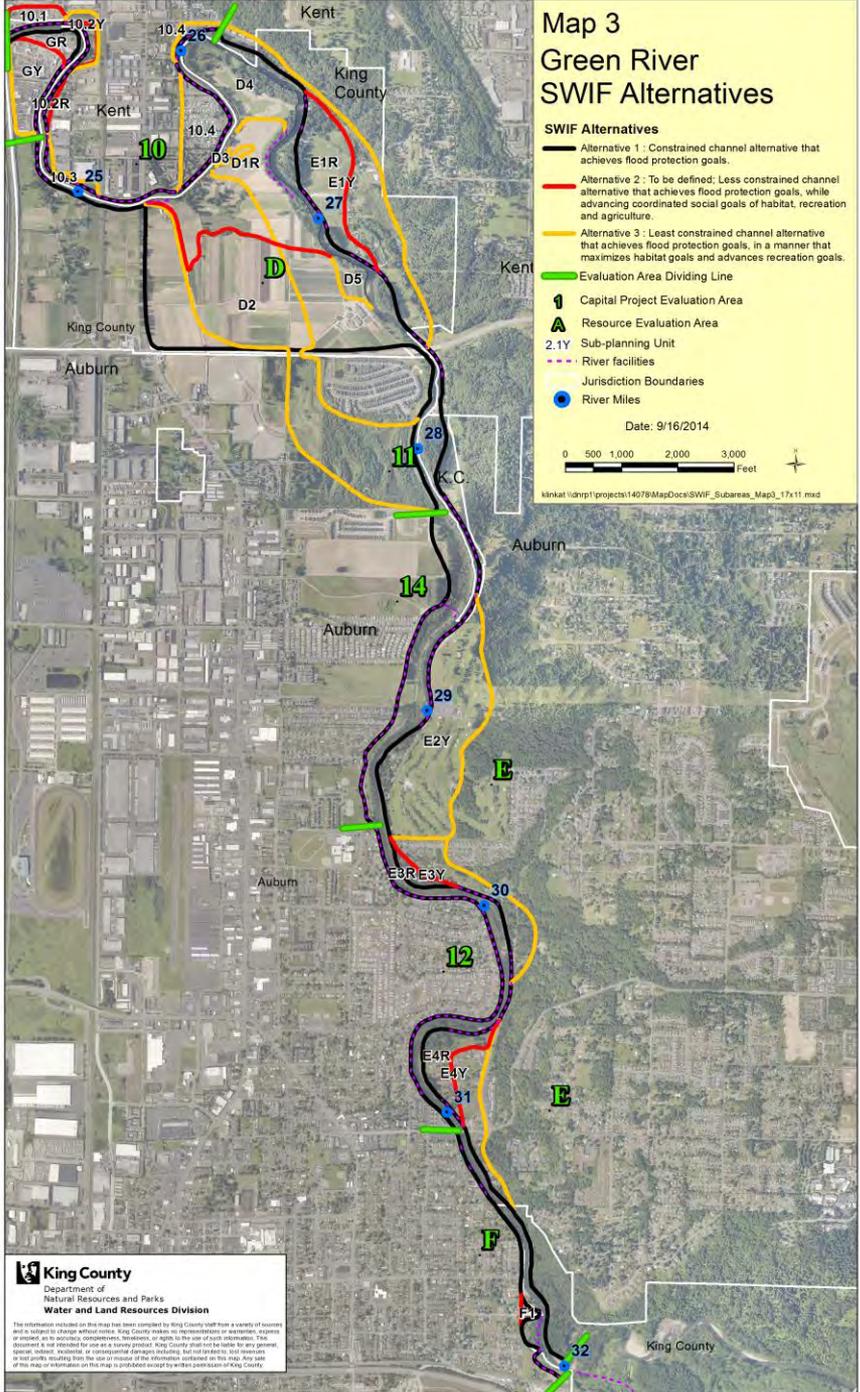
Jurisdiction Boundaries

River Miles

Date: 9/16/2014

0 500 1,000 2,000 3,000 Feet

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SWIF Alternatives (9-17-14)

Map 3 of 3

Downstream limit: Horseshoe Bend (Kent)
Upstream limit: Hwy 18 (Auburn)

Green SWIF: Who is Involved?

- King County Flood Control District, lead agency
- King County
- Green River Cities: Tukwila, Renton, Kent and Auburn
- USACE, FEMA, NOAA
- WRIA 9
- PSP, Ecology, WDFW
- Muckleshoot Tribe
- Business community: Boeing, Master Builders Association, NAIOP, WA Realtors
- Environmental organizations: Nature Conservancy, American Rivers
- Members of the public



Green River SWIF Milestones

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- 9/23: SWIF public meeting #1 (Auburn City Hall, 9AM-11AM)
 - 9/30: SWIF public meeting #2 (Kent Court House, 4PM – 7PM)
 - 10/2: SWIF Advisory Council meeting
 - 10/15: SWIF Technical Advisory Committee meeting
 - Late Oct/Early Nov (date TBD): SWIF Advisory Council meeting
 - Later Fall 2014: Flood District selection of a SWIF alternative
 - December 2014: 10-12 capital project designs (concepts) + estimates
 - February 2015: SWIF products submitted to the Corps

We are Seeking your Input!

Ways in which you can let us know what is most important to you about the Lower Green River and its floodplain/valley:

- Complete a comment form (hard copy or electronic)
- Attend a public meeting
- Communicate with your elected officials
- Contact the SWIF project manager

Questions?

For additional information regarding the Green River SWIF:

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