
Upper Carlson Floodplain
Restoration Project

The Project Team

King County Design Team

- Diane Concannon – Project Sup.
- Dan Eastman – PM and Fish Bio
- Will Mansfield – Sup engineer
- Todd Hurley – Geologist
- Cindy Young– Landscape ecologist
- Kay Kitamura - CAD

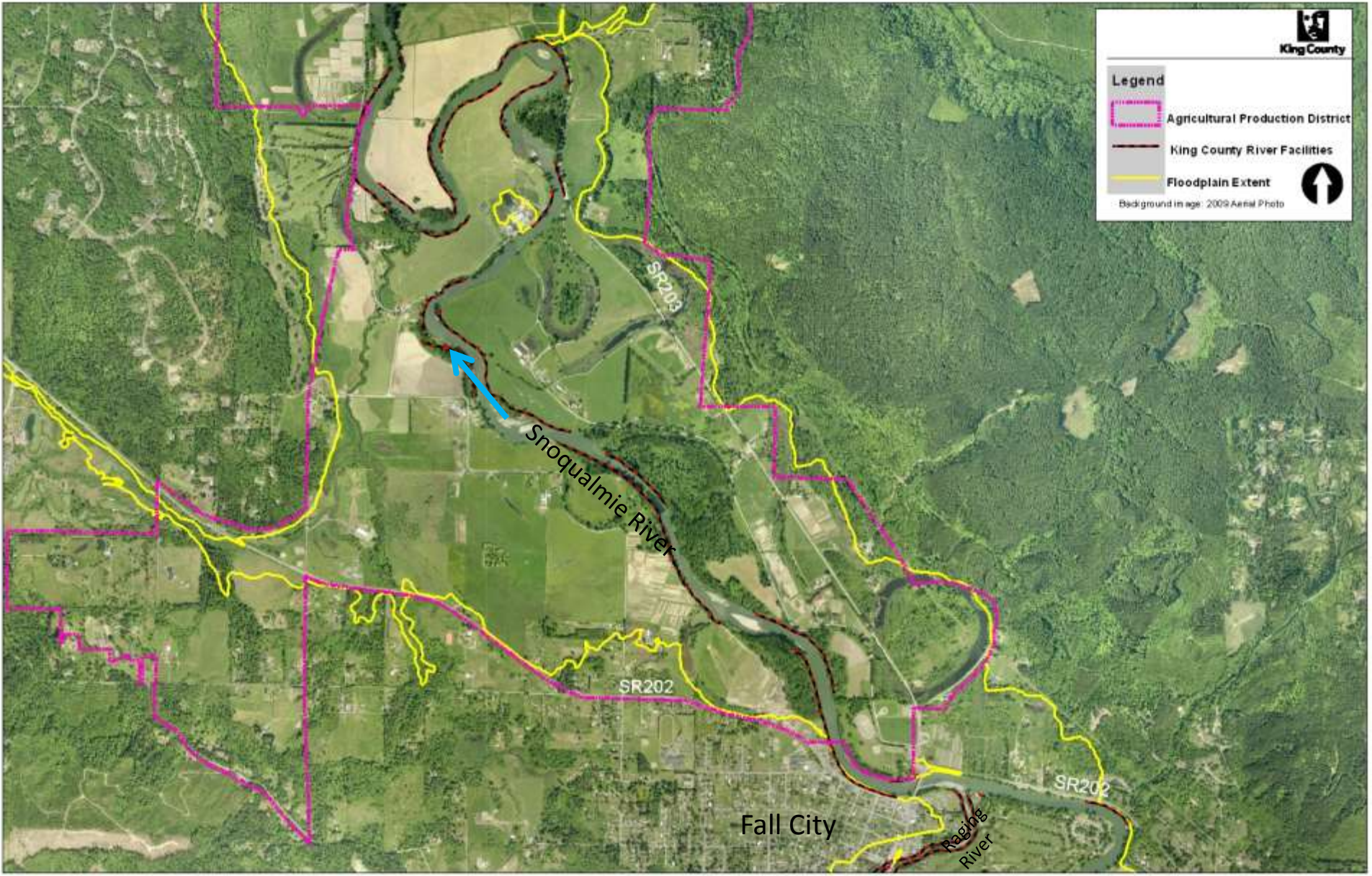
Herrera Consultant Design Team

- Ian Mostrenko – senior engineer
- Brian Scott – PM and engineer
- Todd Prescott – CAD

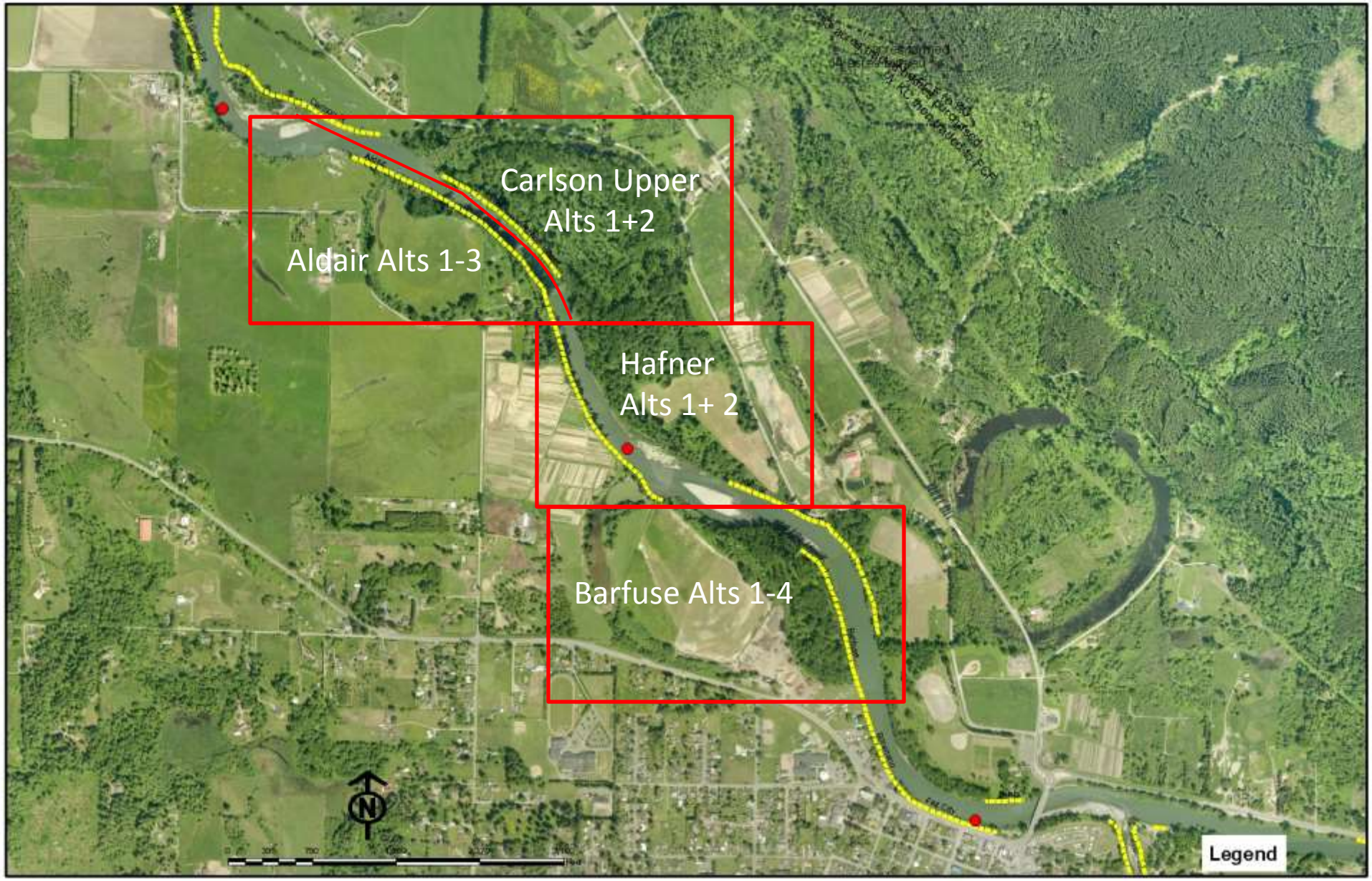
Other Team Members

- Mary Maier – Basin Steward
- Sally King – RFMS representative
- Claire Dyckman- Agriculture rep.
- Rick Reinlasoder - Agriculture rep.

Snoqualmie at Fall City Reach



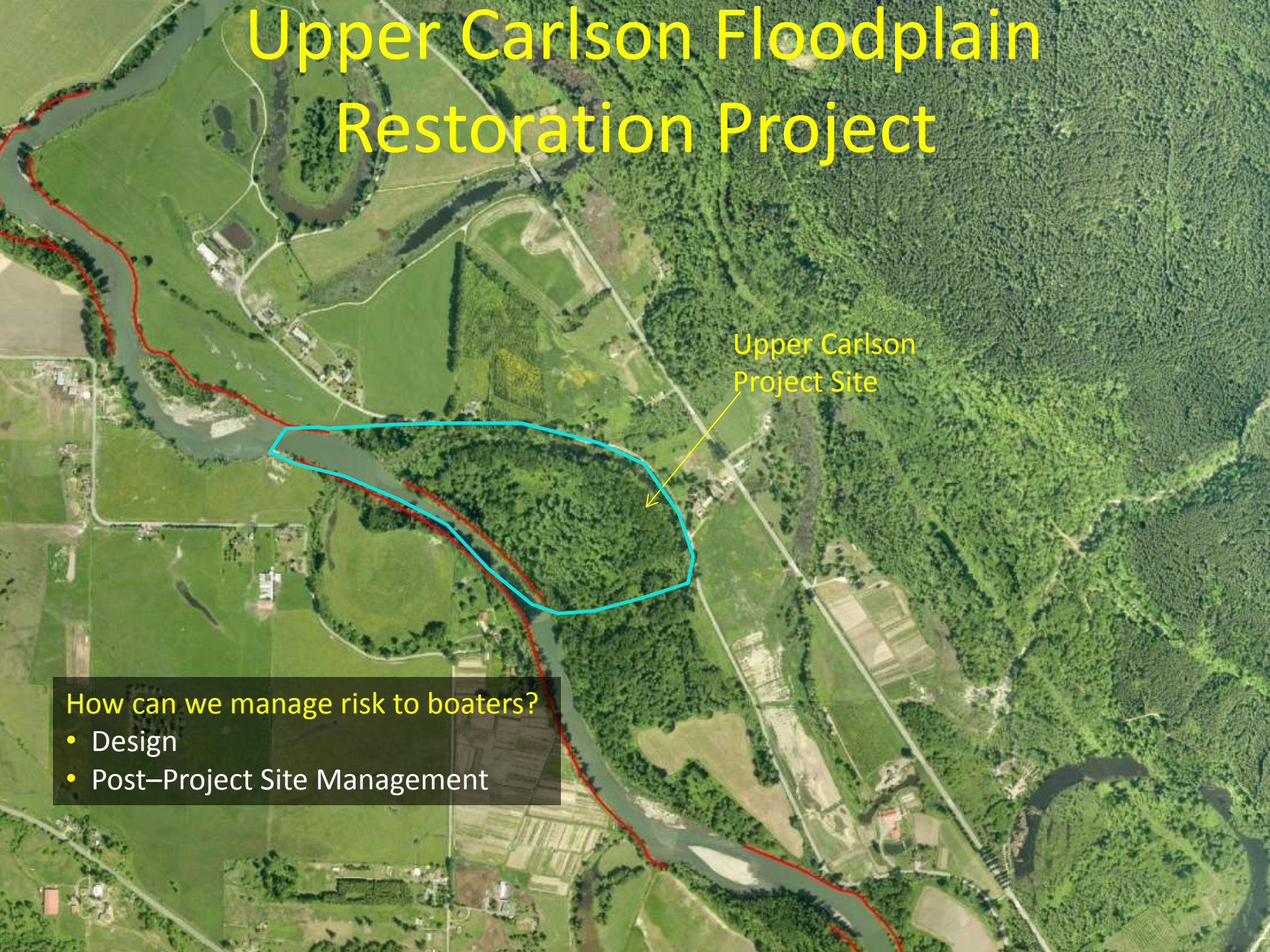
Snoqualmie at Fall City (SAFC) Feasibility Study
Focus Reach



Related Goals and Efforts

- Recreational safety – countywide river safety campaign, and local work group to meet mid-September and *advise* county on local river use, project design and options to manage risks

Upper Carlson Floodplain Restoration Project



How can we manage risk to boaters?

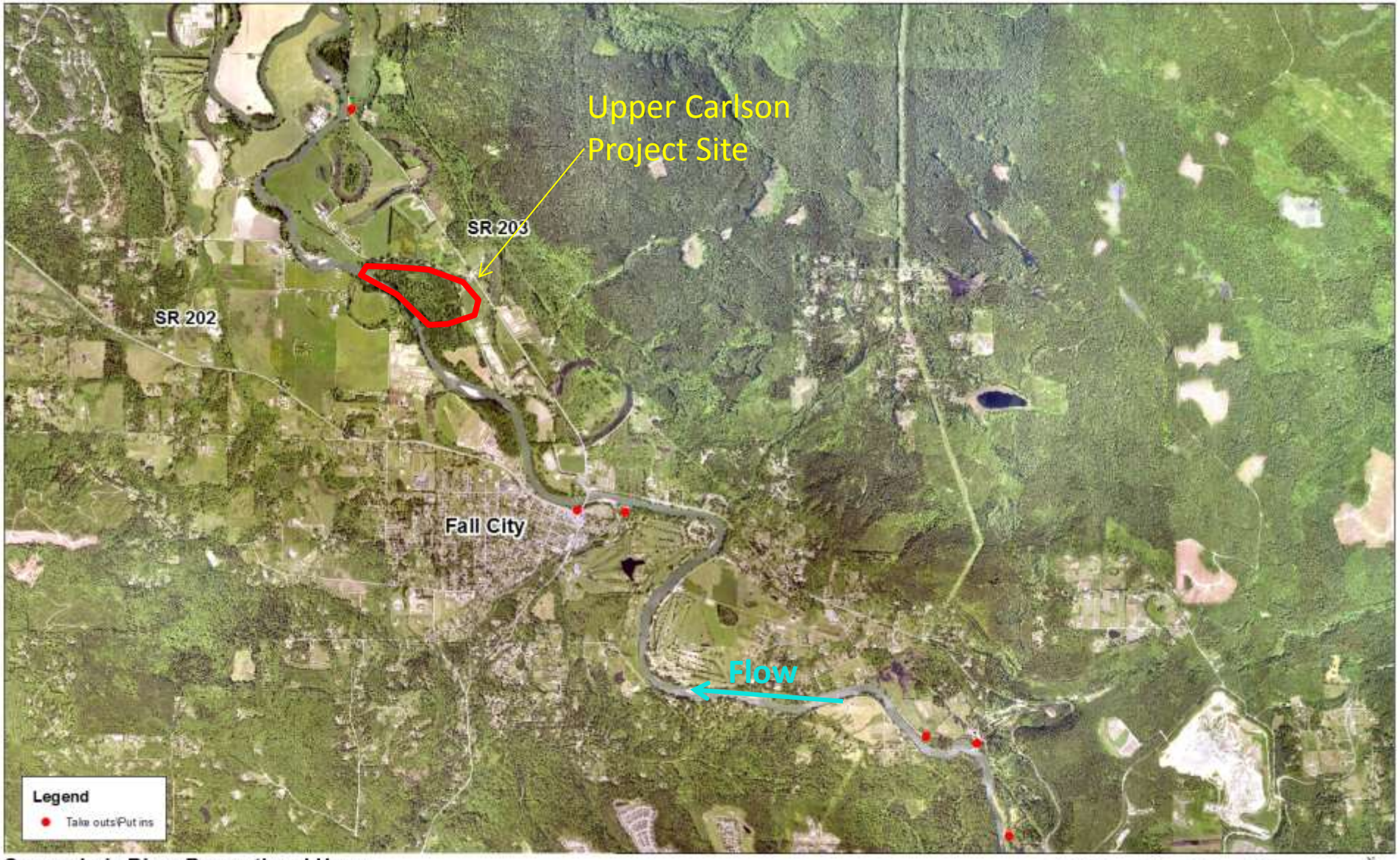
- Design
- Post–Project Site Management

Upper Carlson Floodplain Restoration Project
Design Status and schedule

with upcoming opportunities for public input on wood shown in yellow

- Draft 30% design — Complete
- Solicit expert opinion on 30% — Complete
- Public Input via LWD meetings — Complete
- Public input via Public Meeting — Complete
- 30% plans/LWD checklist comment period — August 26- Sept 23rd
- Work group meeting # 1 – design focused — Sept 19th
- Work group meeting #2 – SMP focused — October 2nd
- 60% plans & LWD checklist posted — October 21st
- All Comments/concerns re: wood/boaters due — Nov 1st
- Near final SMP complete — Late November
- Final Plans Complete — Feb. 2014
- Construction — Summer 2014

Existing Conditions – Recreational Boating



Upper Carlson Site

Upstream 300’ @ ~1000 CFS

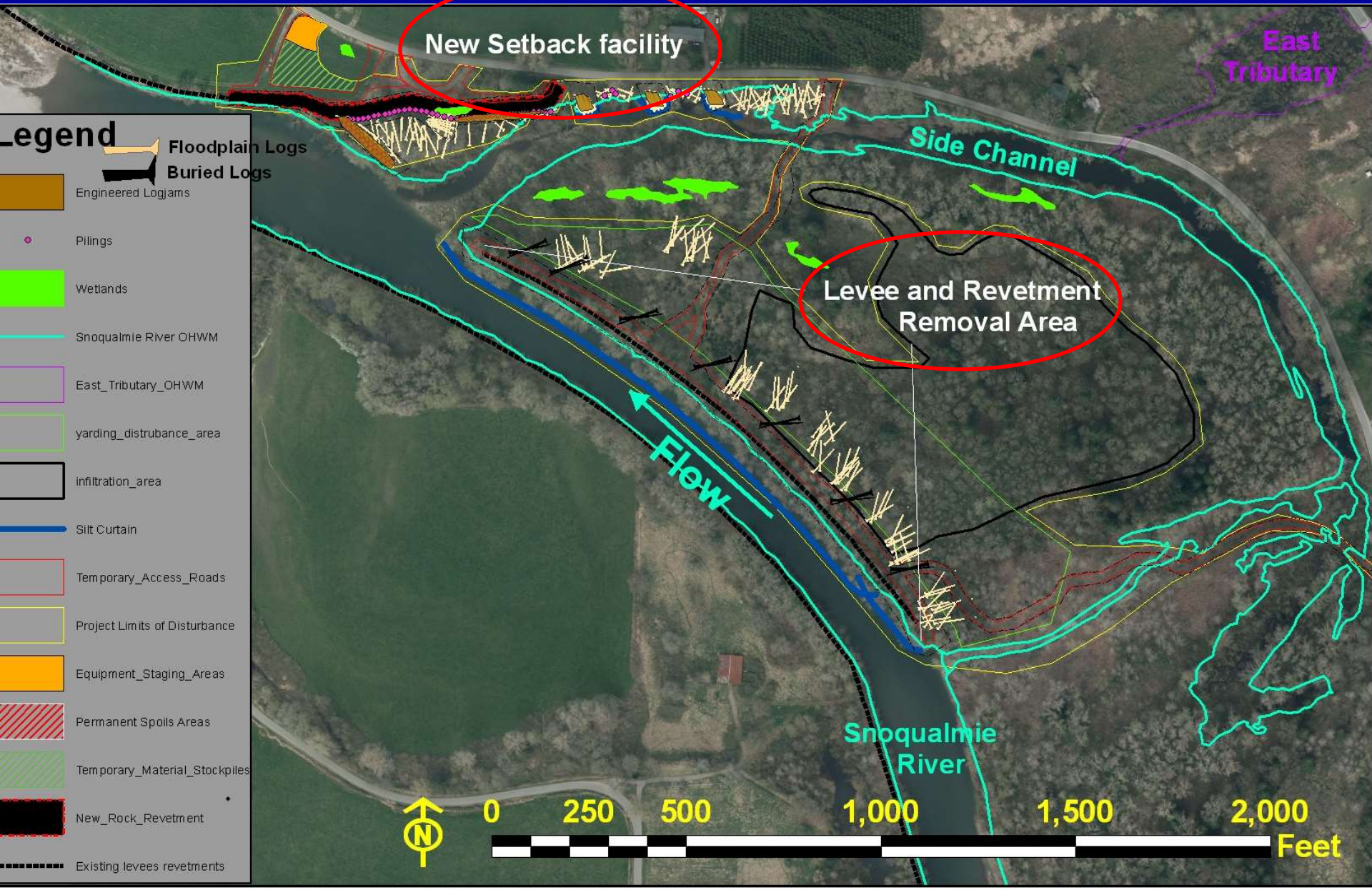
Flow 3-4 ft/sec

Upper Carlson Site

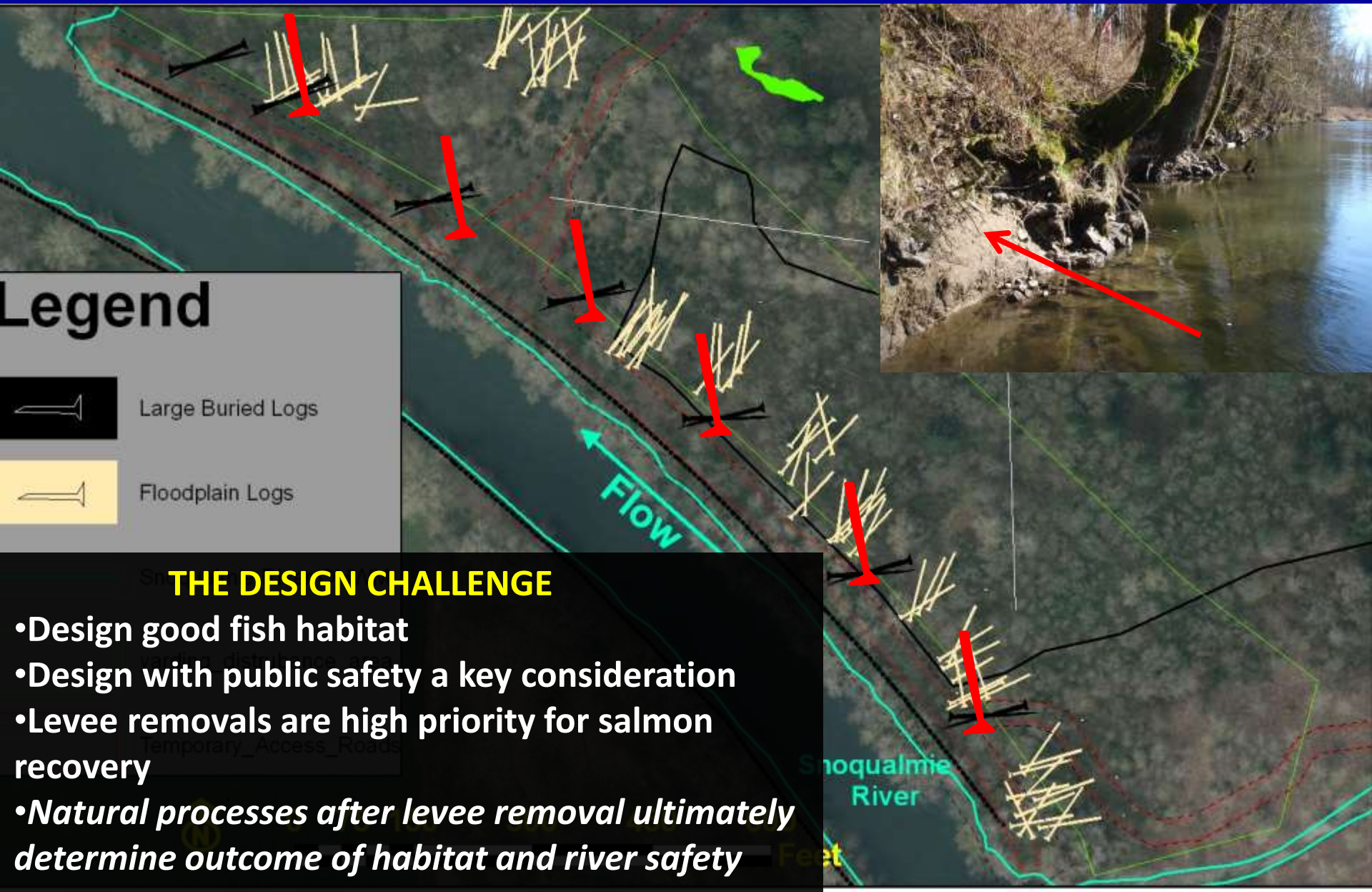
Remaining 1200’ @ ~1000 CFS

Flow 0.5-1.5 ft/sec

Proposed Actions Overview



Proposed Actions – Tree Removal and Placement in Floodplain

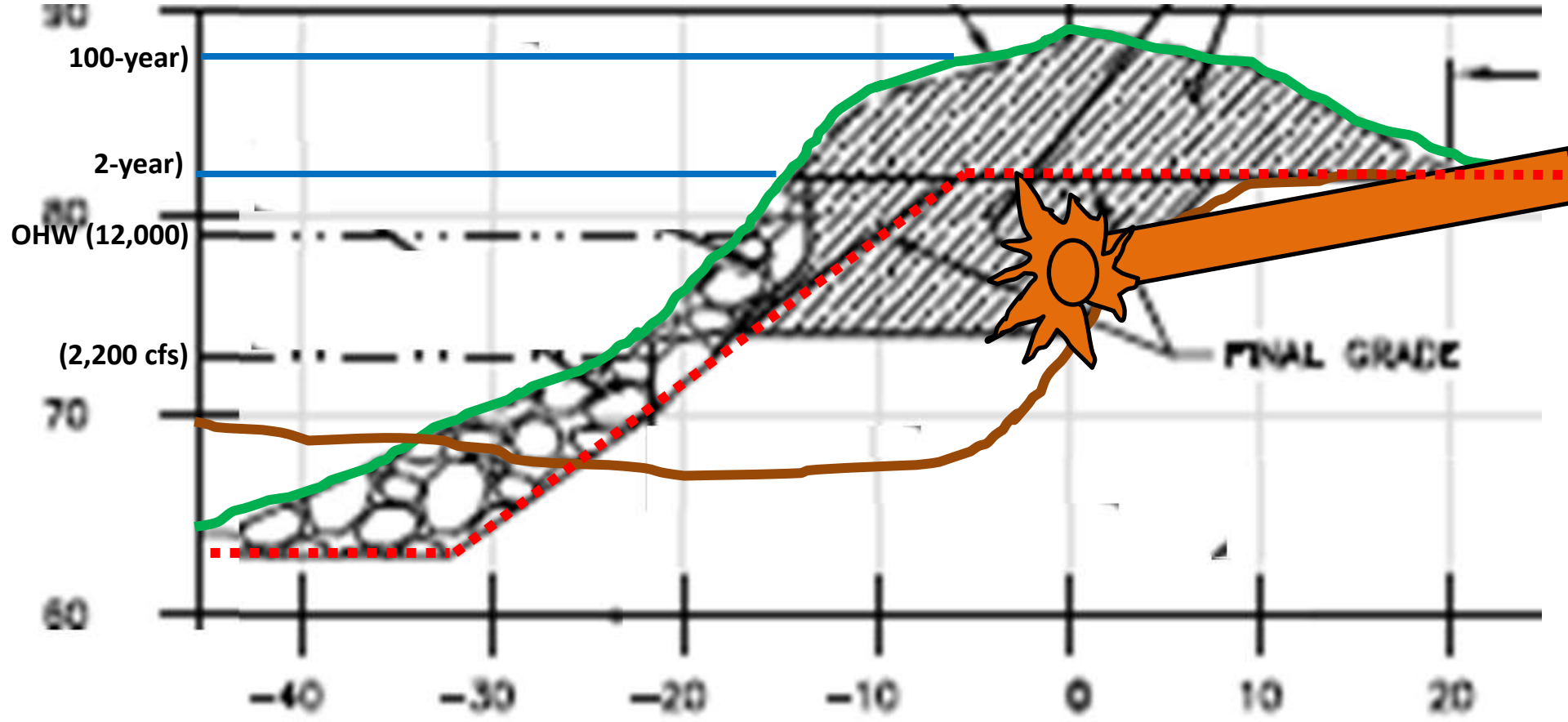


THE DESIGN CHALLENGE

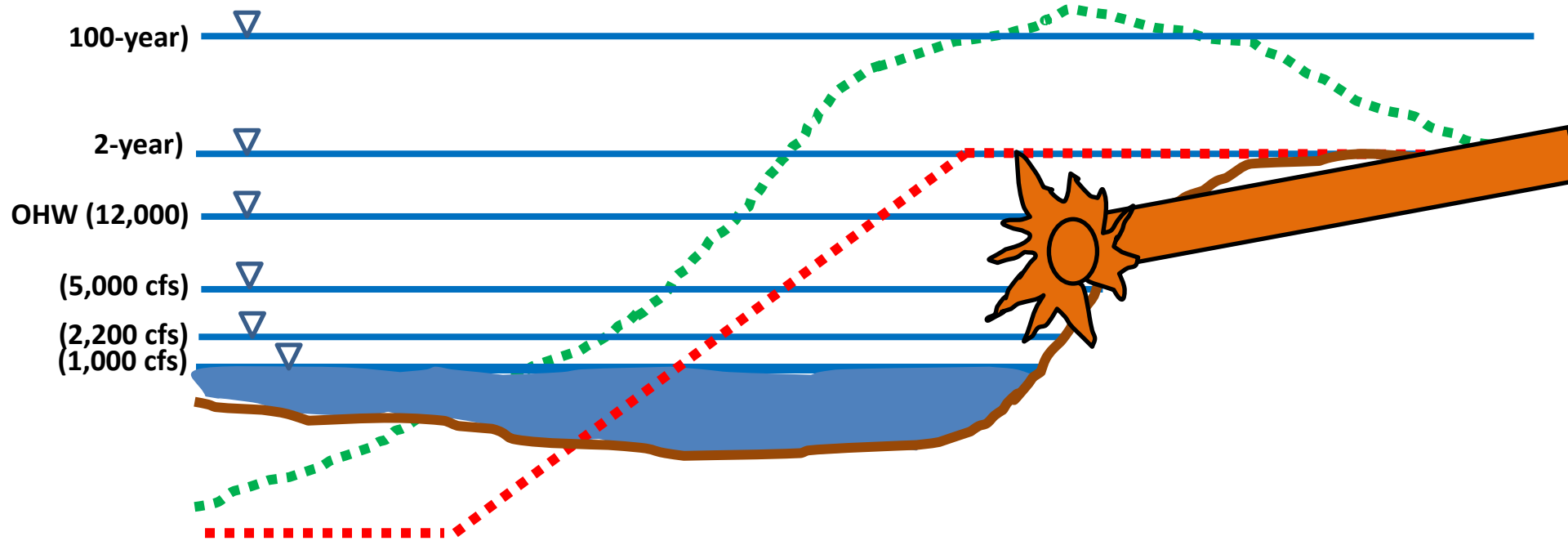
- **Design good fish habitat**
- **Design with public safety a key consideration**
- **Levee removals are high priority for salmon recovery**
- ***Natural processes after levee removal ultimately determine outcome of habitat and river safety***

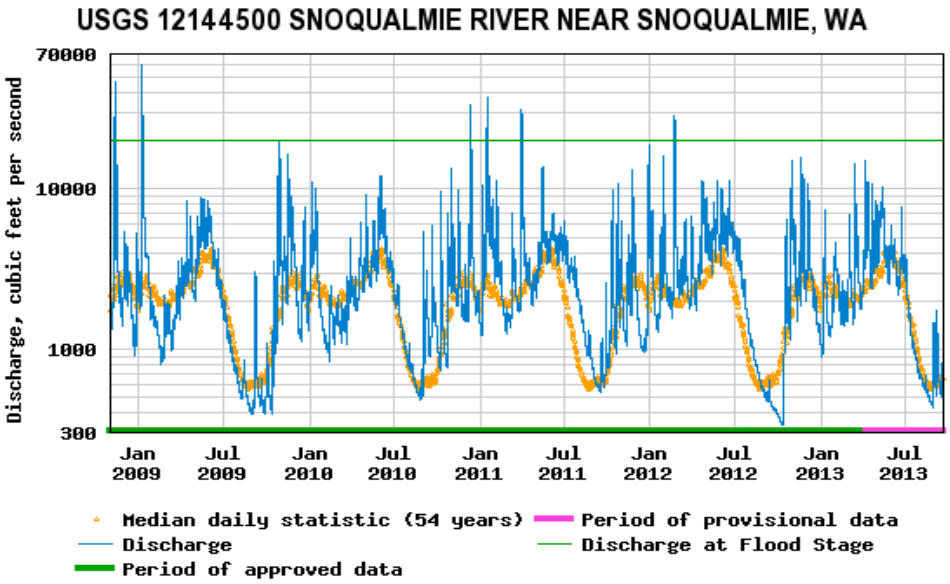
Proposed Actions – Updated plan view of DRAFT new positioning of floodplain and buried logs

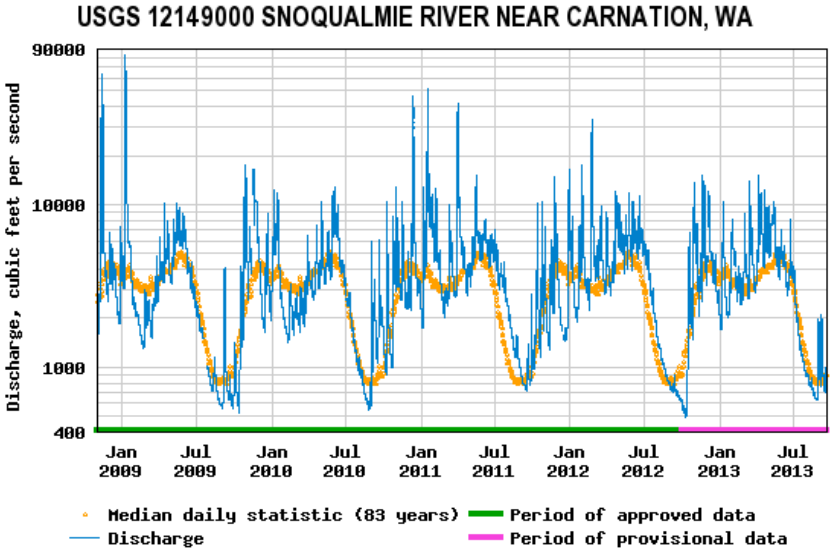
Zone 5 – Buried Rootwad Section



Zone 5 – Buried Rootwad Section





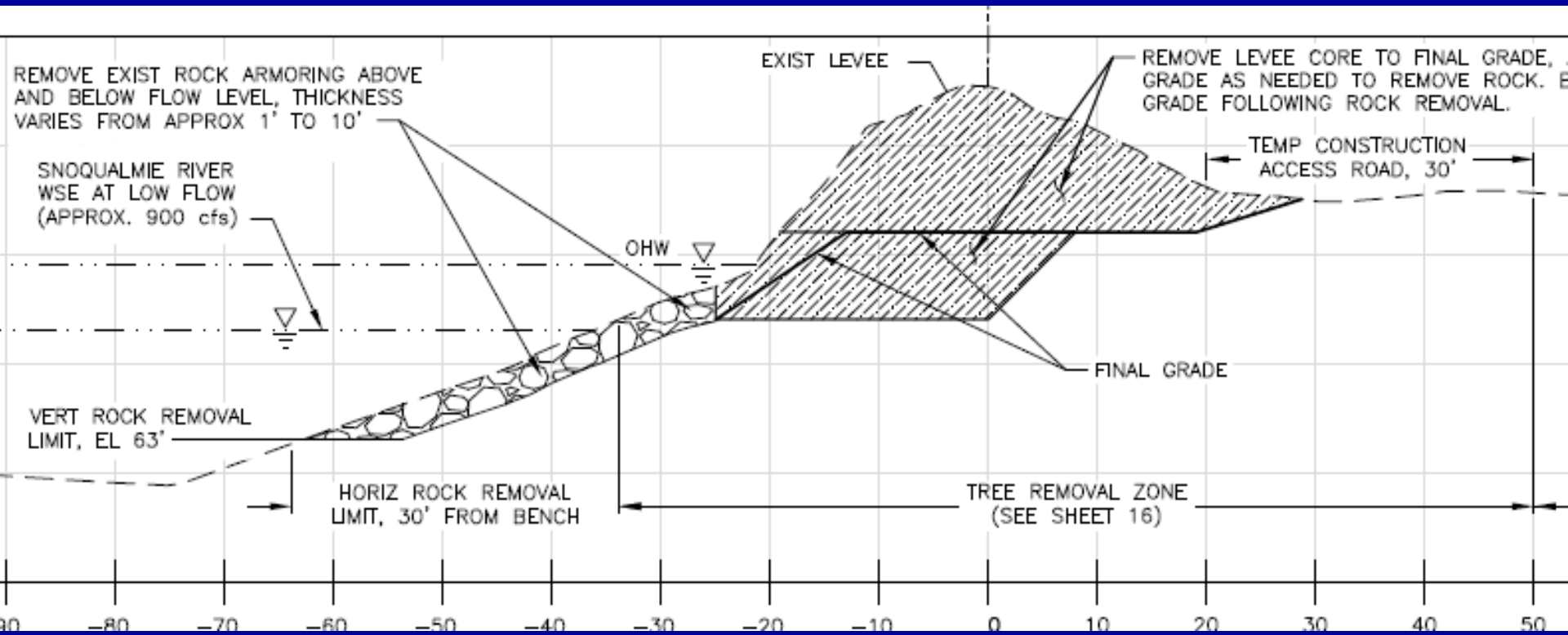


Reducing Risks from wood (to boaters)

Wood Design

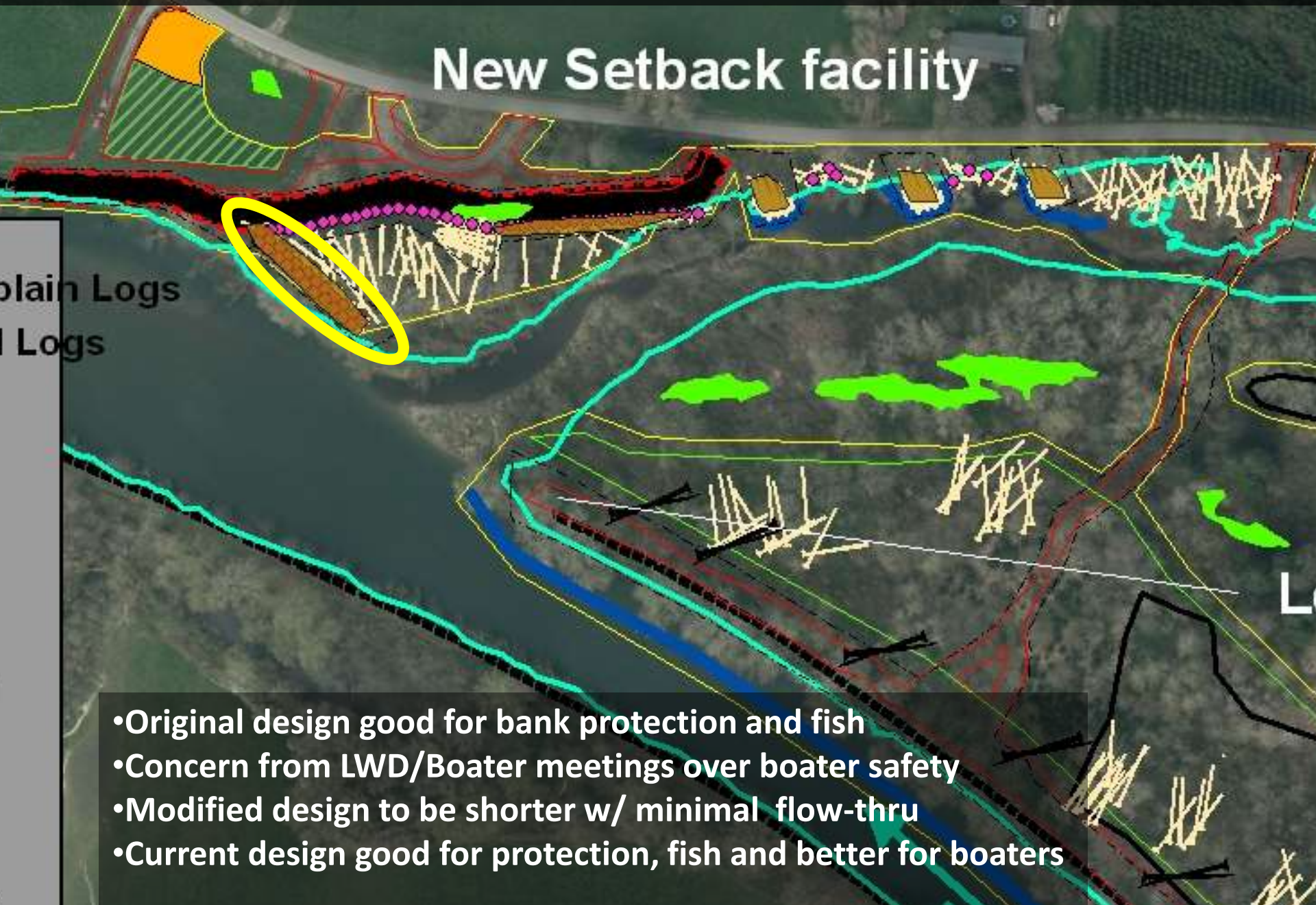
- Extensive tree removal
  Rather than allowing for immediate, rapid recruitment
- Placement back from initial migration area
- Design objective to mimic natural systems in terms of the rate/orientation of wood recruited
- Design modifications to reduce immediate hazards
  - Redesign of downstream structure
  - Reorientation/relocation of buried logs

Proposed Actions – Levee & Revetment Removal

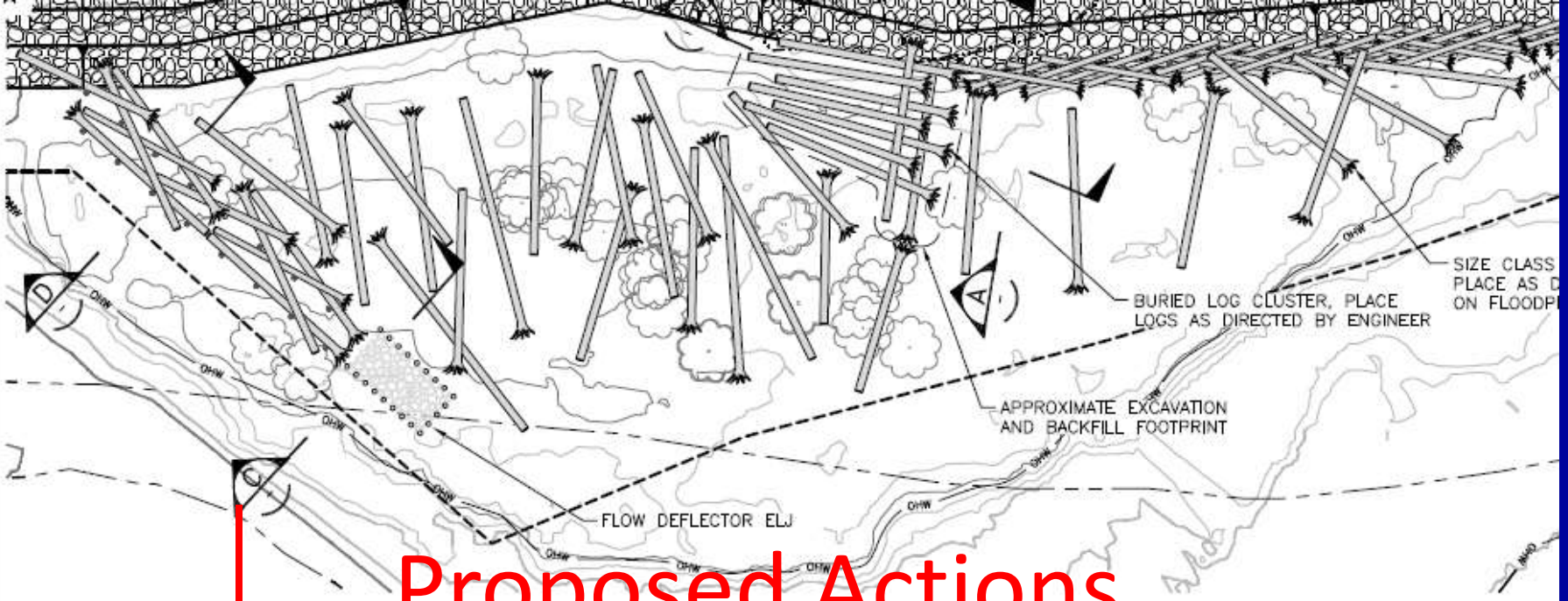


We are removing potential foot entrapments from existing angular rock

Proposed Actions

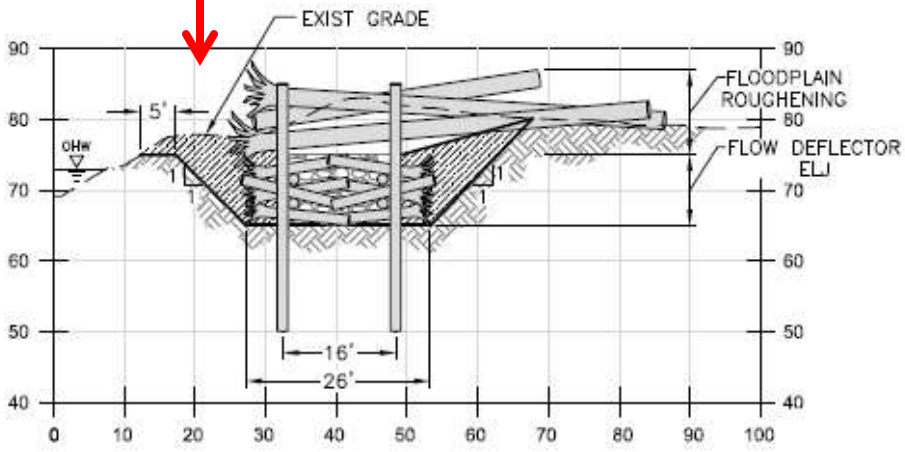


- Original design good for bank protection and fish
- Concern from LWD/Boater meetings over boater safety
- Modified design to be shorter w/ minimal flow-thru
- Current design good for protection, fish and better for boaters



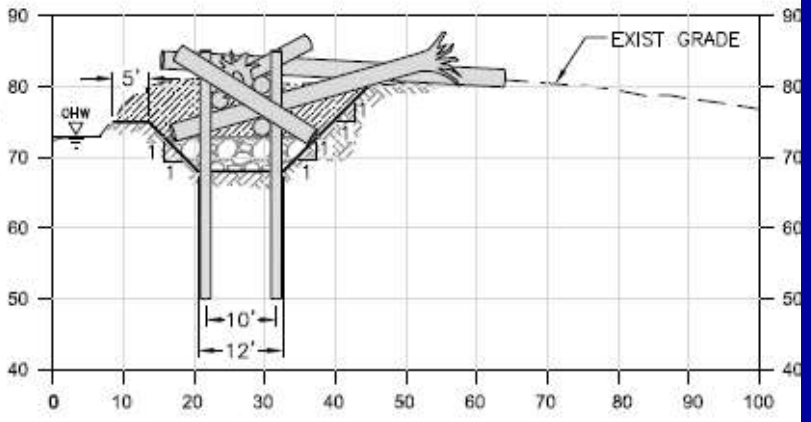
Proposed Actions

New setback Revetment



SECTION – FLOW DEFLECTOR ELJ C

SCALE: 1"=15' AT FULL SCALE

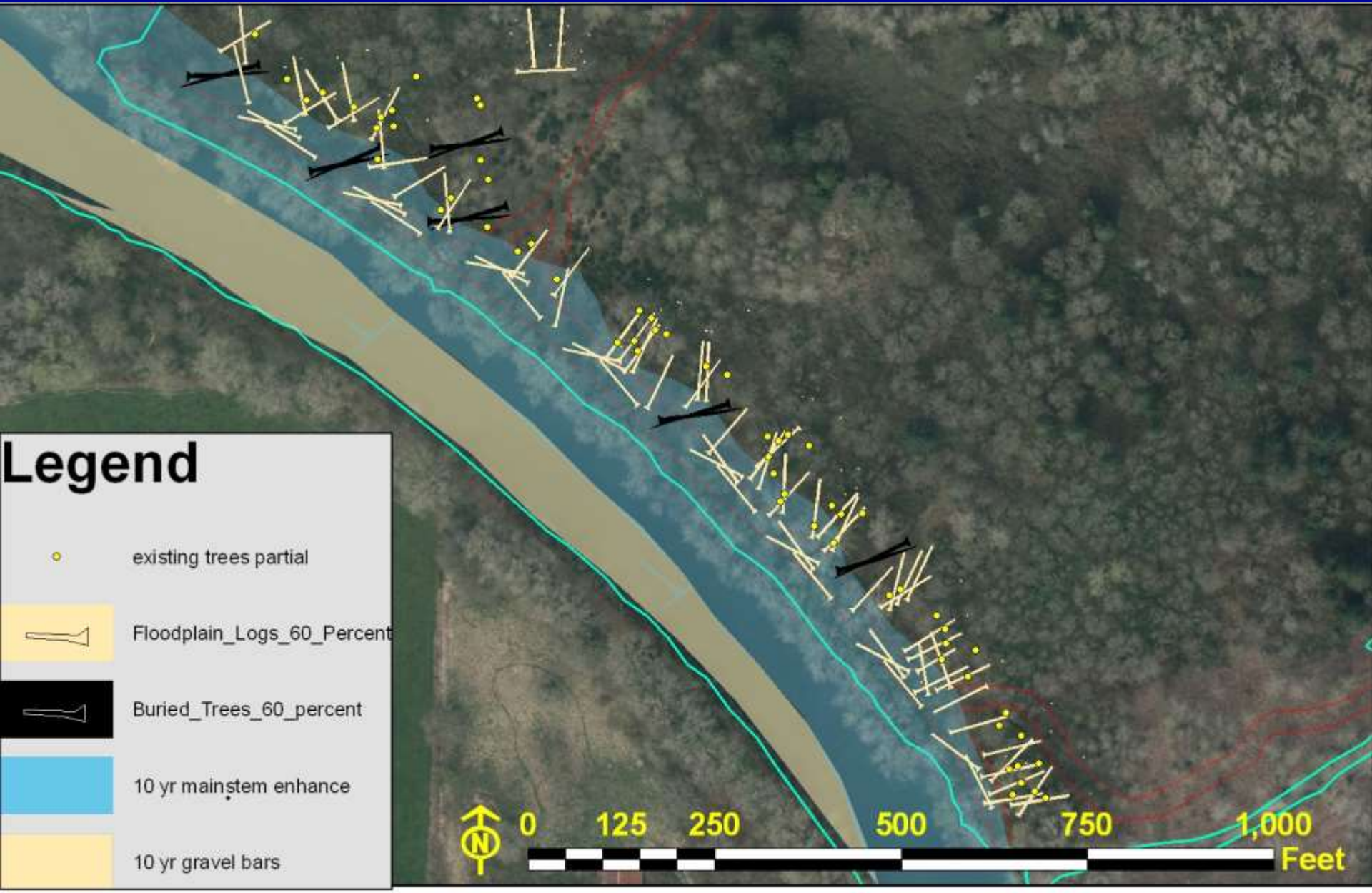


SECTION – FLOW DEFLECTOR ELJ D

SCALE: 1"=15' AT FULL SCALE

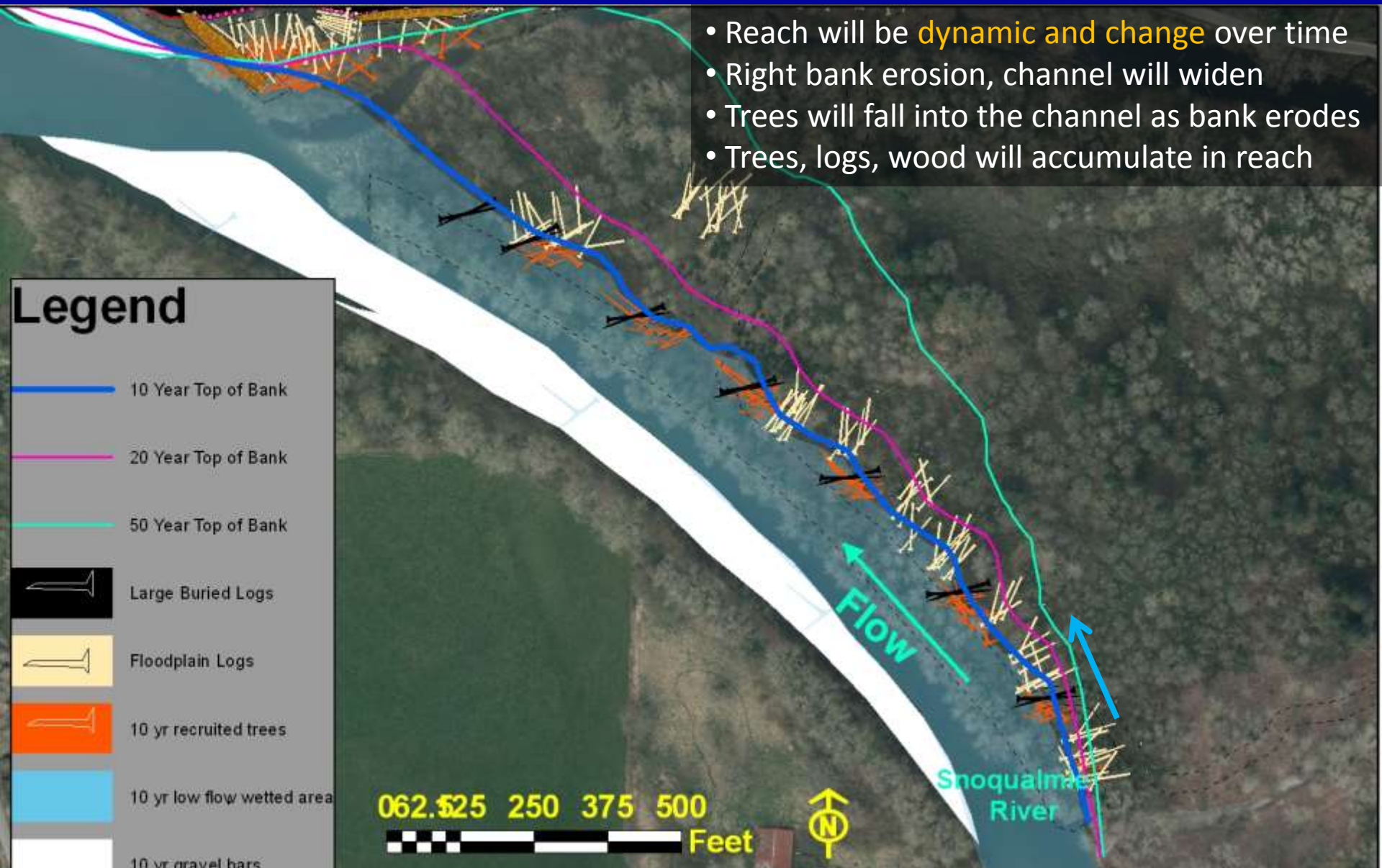
Expected Response and Effects on People

Wood Recruitment and Recreational Boaters

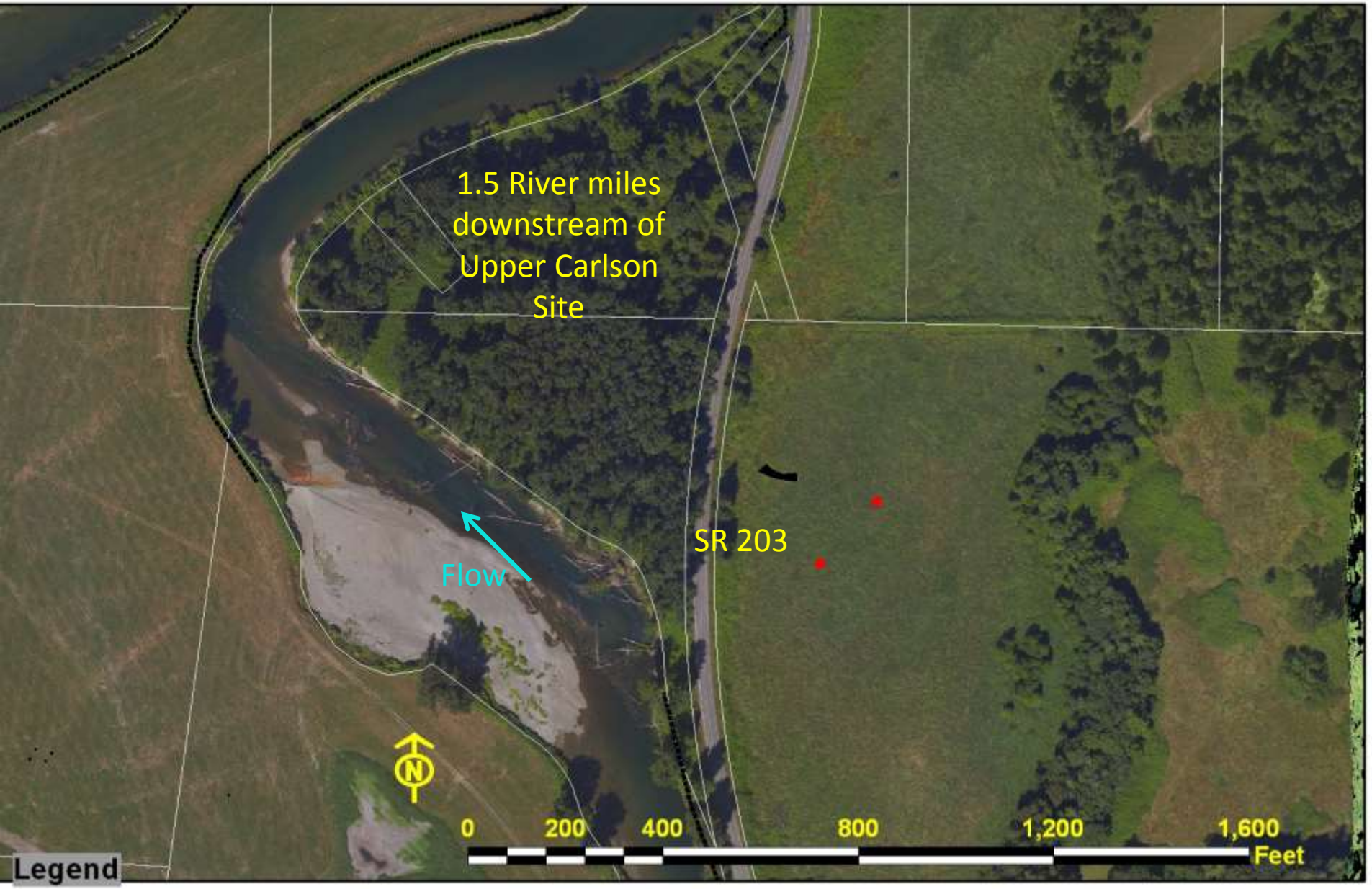


Expected Response and Effects on People

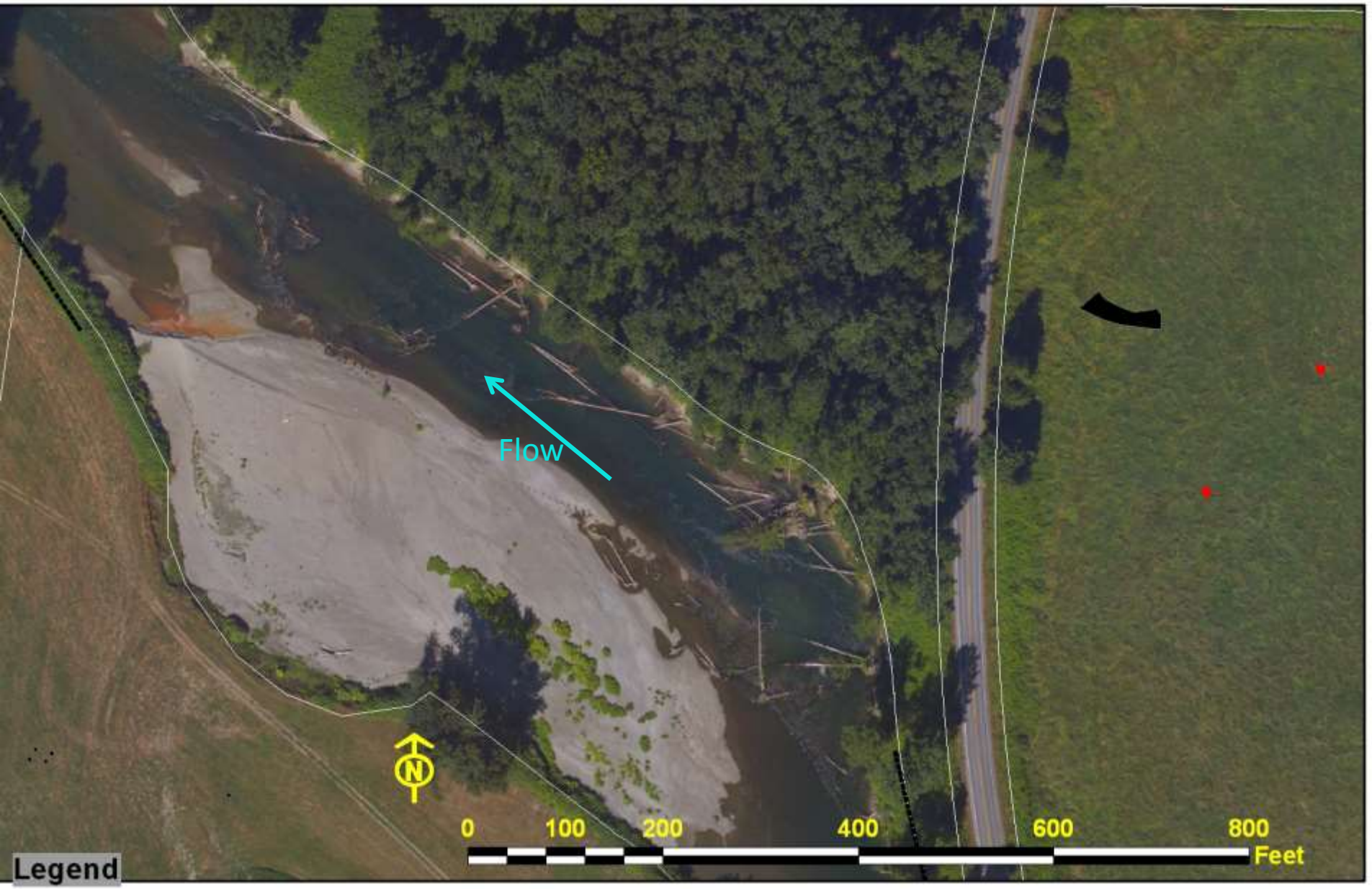
Wood Recruitment and Recreational Boaters



Reference Reach Downstream



Reference Reach Downstream



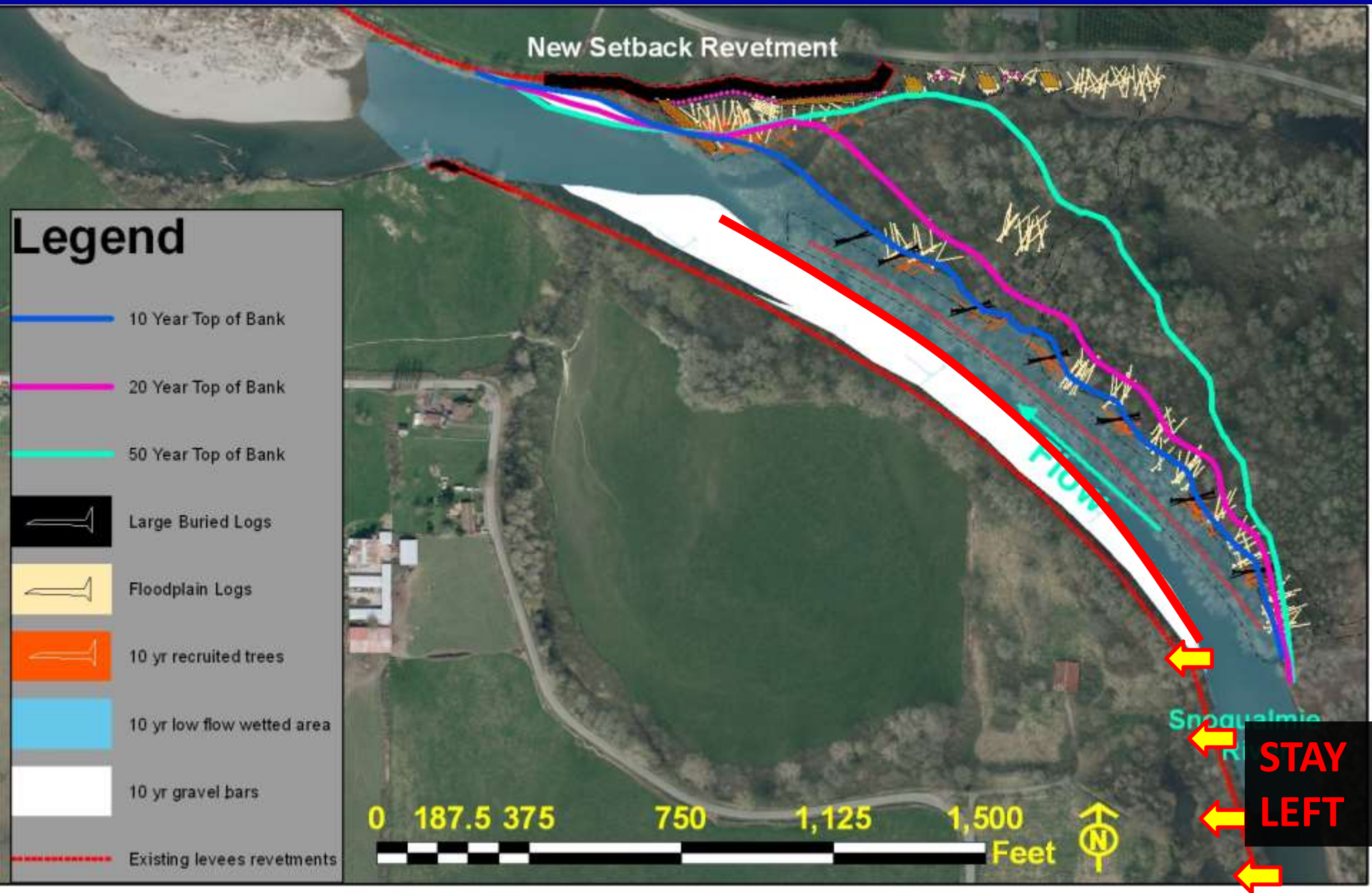
How Will Changes Affect Use

- Additional wood obstacles will likely be present
- Floating/boating may not be advisable under certain flows or conditions
- Reach access may need to be restricted at times based on conditions and skill level of users.
- Signage, education and outreach will be important to manage recreational use.

  Best methods TBD by local workgroup

Upper Carlson Floodplain Restoration Project

Signage and Boater access Management – Site Scale



Reducing Risks from wood
Site Management

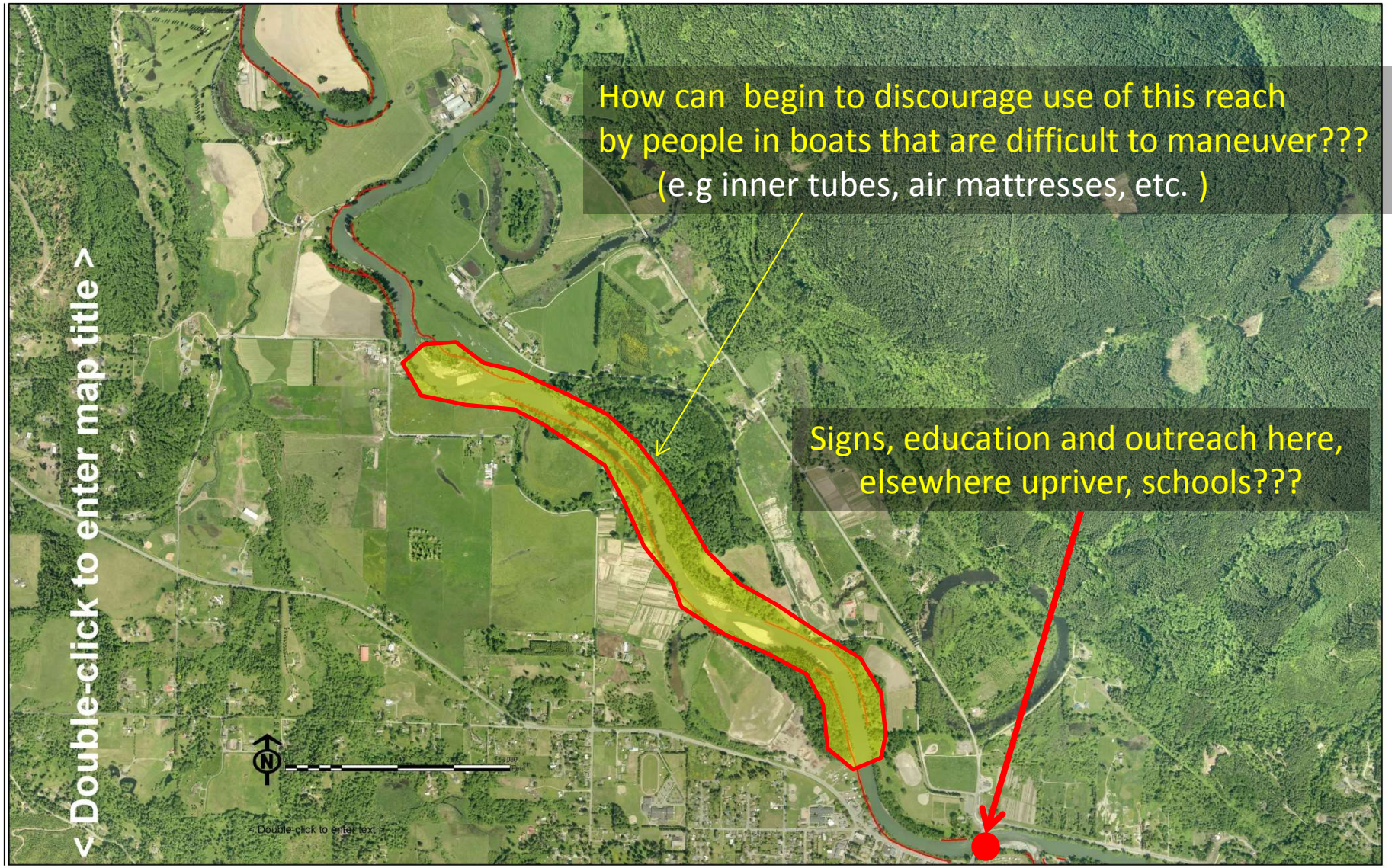
- Warning/Advisory Signs — Best methods/locations???
- Improvement and signage towards left bank portage — Best methods/location ???
- Extensive public outreach and education — Best methods/location ???
- Modification of unacceptable hazards — When/how much/sustainable strategy???

Post-Project Adaptive Management plan

- Developed and implemented with extensive input from local workgroup in 2013 and beyond.
- 3 to 4 meetings planned for Sept-Nov. 2013

Snoqualmie at Fall City Corridor Reach

Signage, education, outreach is VERY important



Upper Carlson Floodplain Restoration Project Design Schedule Overview

with upcoming opportunities for public input on wood shown in yellow

• Draft 30% design	Complete
• Solicit expert opinion on 30%	Complete
• Public Input via LWD meetings	Complete
• Public input via Public Meeting	Complete
• 30% plans/LWD checklist comment period	August 26- Sept 23rd
• Work group meeting # 1 – design focused	Sept 19th
• Work group meeting #2 – SMP focused	October 2nd
• 60% plans & LWD checklist posted	October 21st
• All Comments/concerns re: wood/boaters due	Nov 1st
• Near final SMP complete	Late November
• Final Plans Complete	Feb. 2014
• Construction	Summer 2014

Thank you for your time !!!

Table Discussions

Large Wood link

http://www.kingcounty.gov/environment/watersheds/general-information/large-wood/project-list.aspx