

Large Wood Projects

**2012 (and future)
Construction Seasons**

Meeting Overview

- King County Large Wood Policy
- Key Elements of Department of Natural Resources and Parks' Rules and Procedures
- Project Presentations
- Q&A
- Open House

Background

- Ordinance 16581 (2009)
 - Adopt rules addressing procedures for large wood placement
- New DNRP Rules and Procedures (2010)

Key Provision of Ordinance

- Seek public input and consider public safety in design of projects placing large wood in rivers and streams;
- “...Design and locate wood placement to maximize project benefits and to minimize risks to public safety;”
- “...Design options affording the greatest safety for river users shall be of primary consideration in design concerns involving a balancing of important public purposes;”
- Conduct independent monitoring and inspection of projects.

Applicability of Rules and Procedures

- All DNRP Projects
- All Rivers and Streams
- Any Large Wood Placement

Key Features of Procedures

- Project List and Database
- Email List of Interested Parties
- Seek Input on Conceptual/30% Design (ongoing)
- Public Meetings (annual)
- Review by Professional Engineer/Ecologist
- Independent Monitoring
- Website:
<http://www.kingcounty.gov/environment/watersheds/general-information/large-wood/project-list.aspx>
- Posting of 30% plans on website for comment.

Questions?

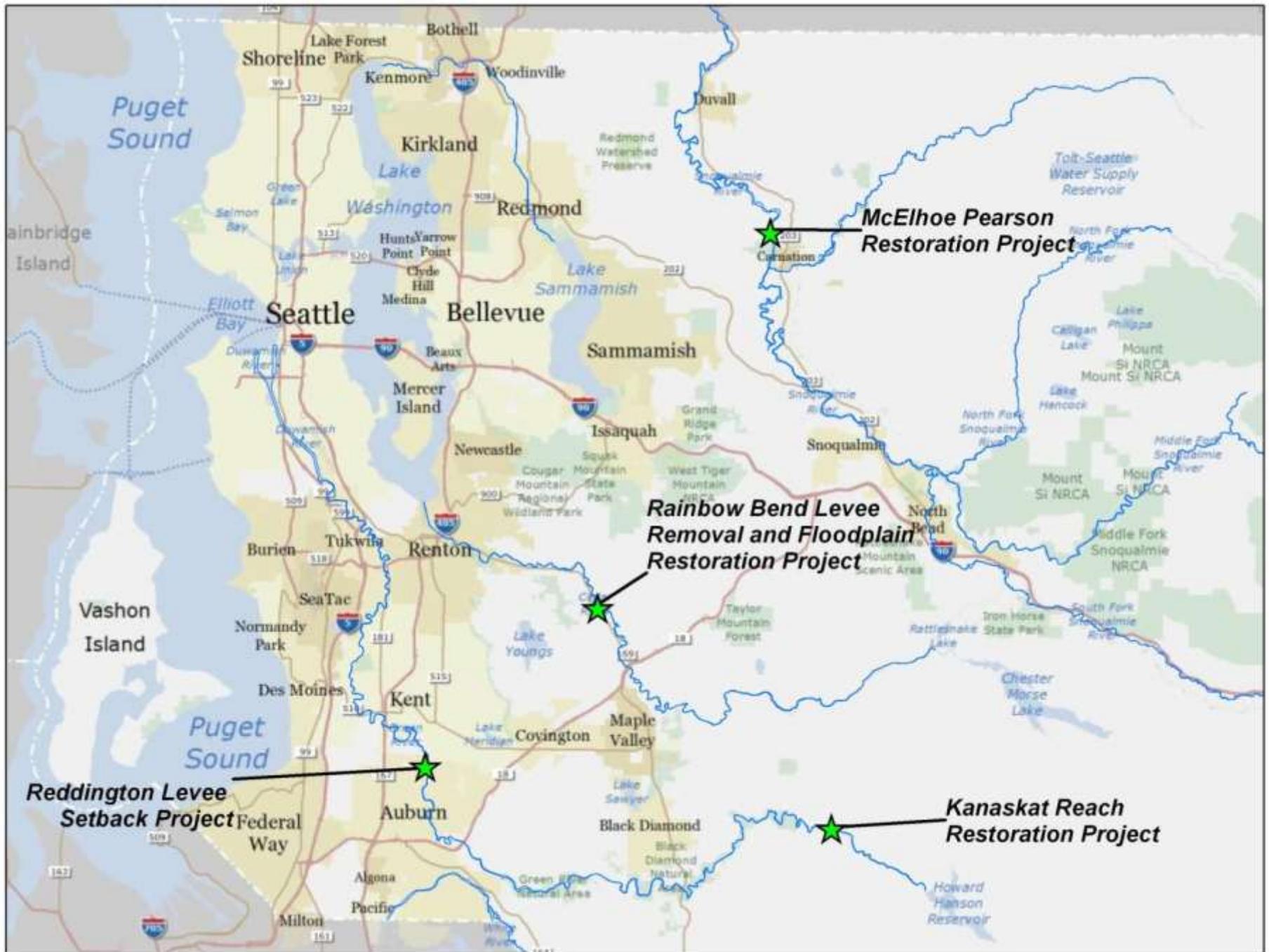
General Information:

Laird O'Rollins, (206) 296-8014

laird.orollins@kingcounty.gov

Project-Specific Information:

Contact Project Manager listed on agenda

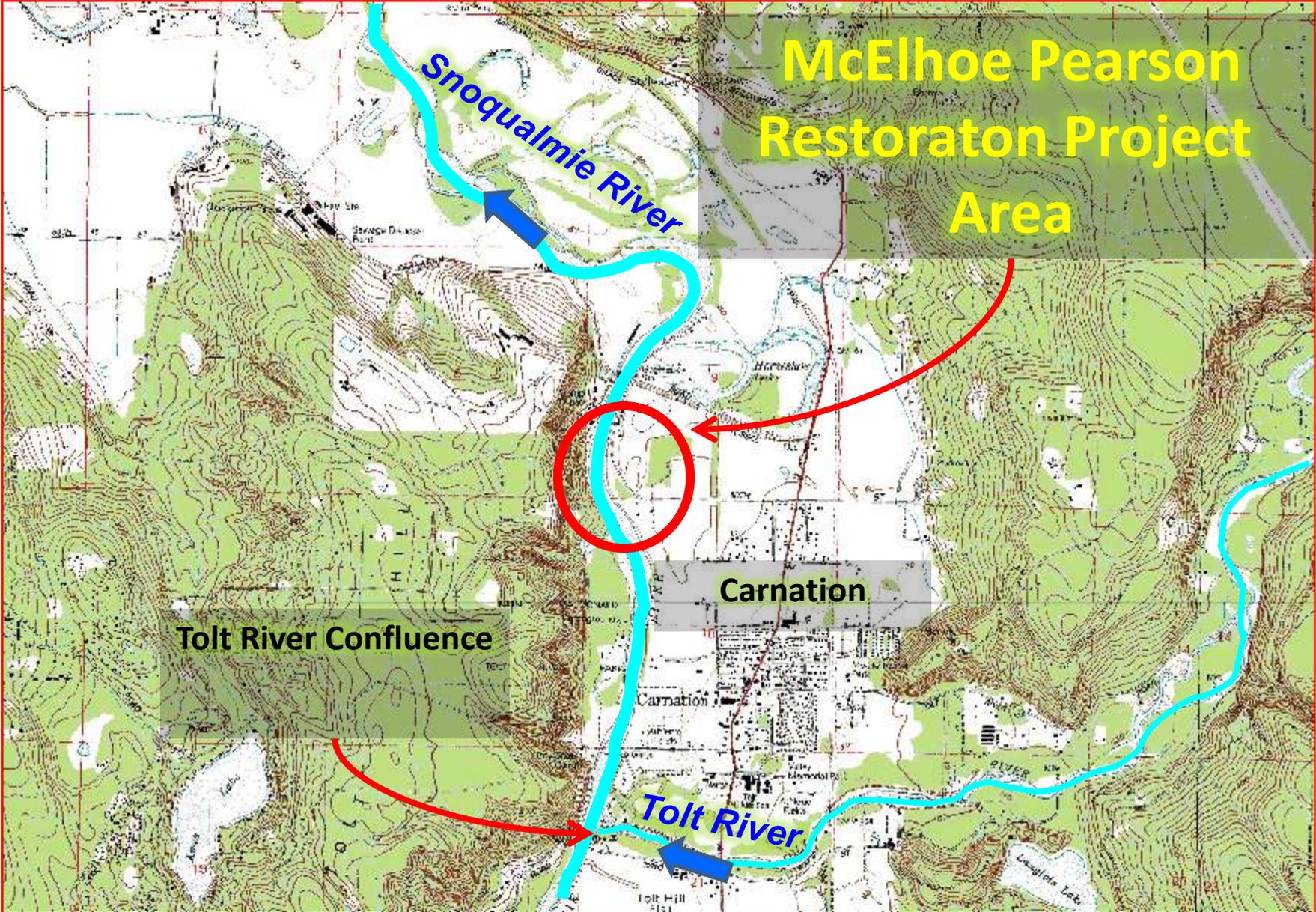


McElhoe Pearson Restoration Project

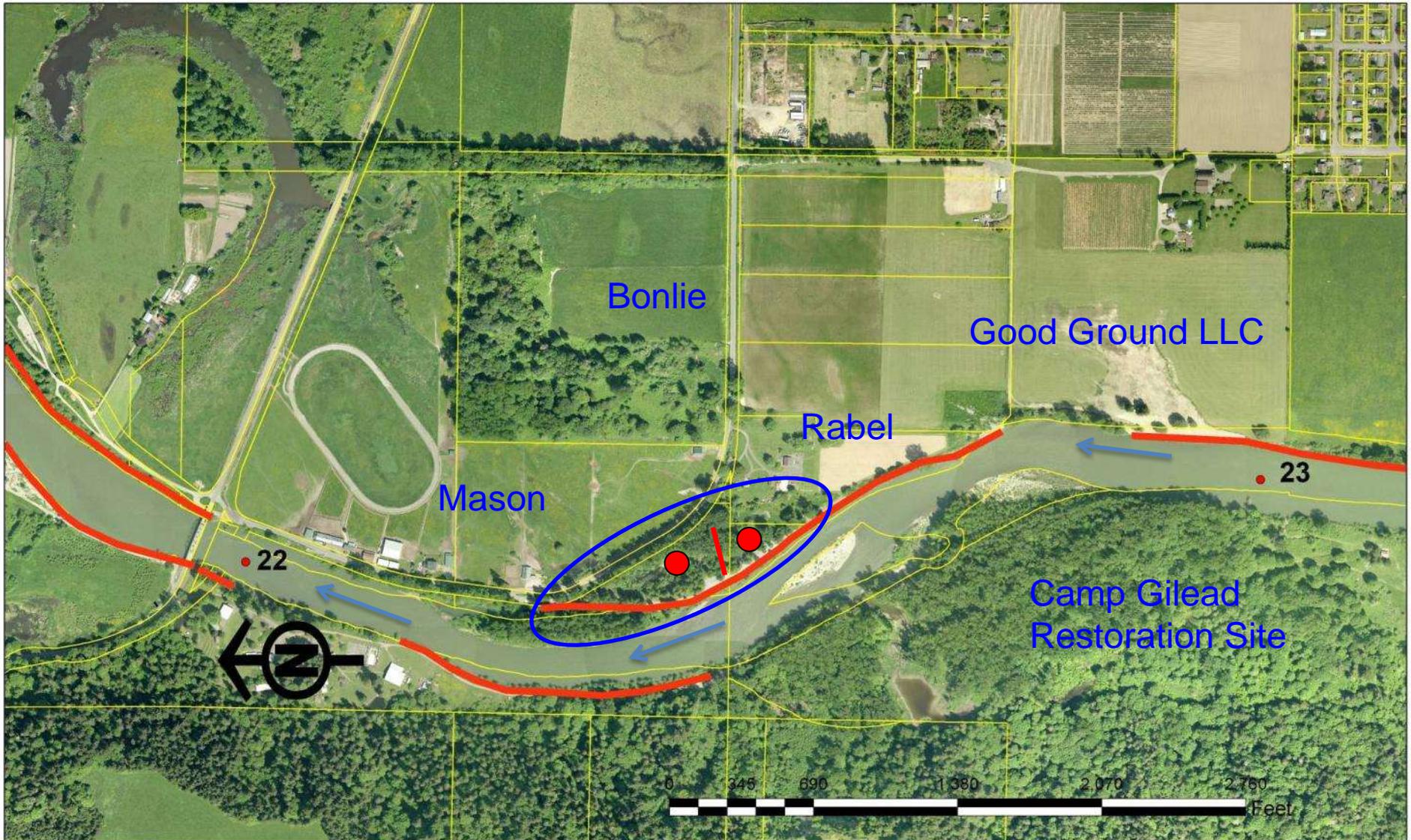


Snoqualmie River

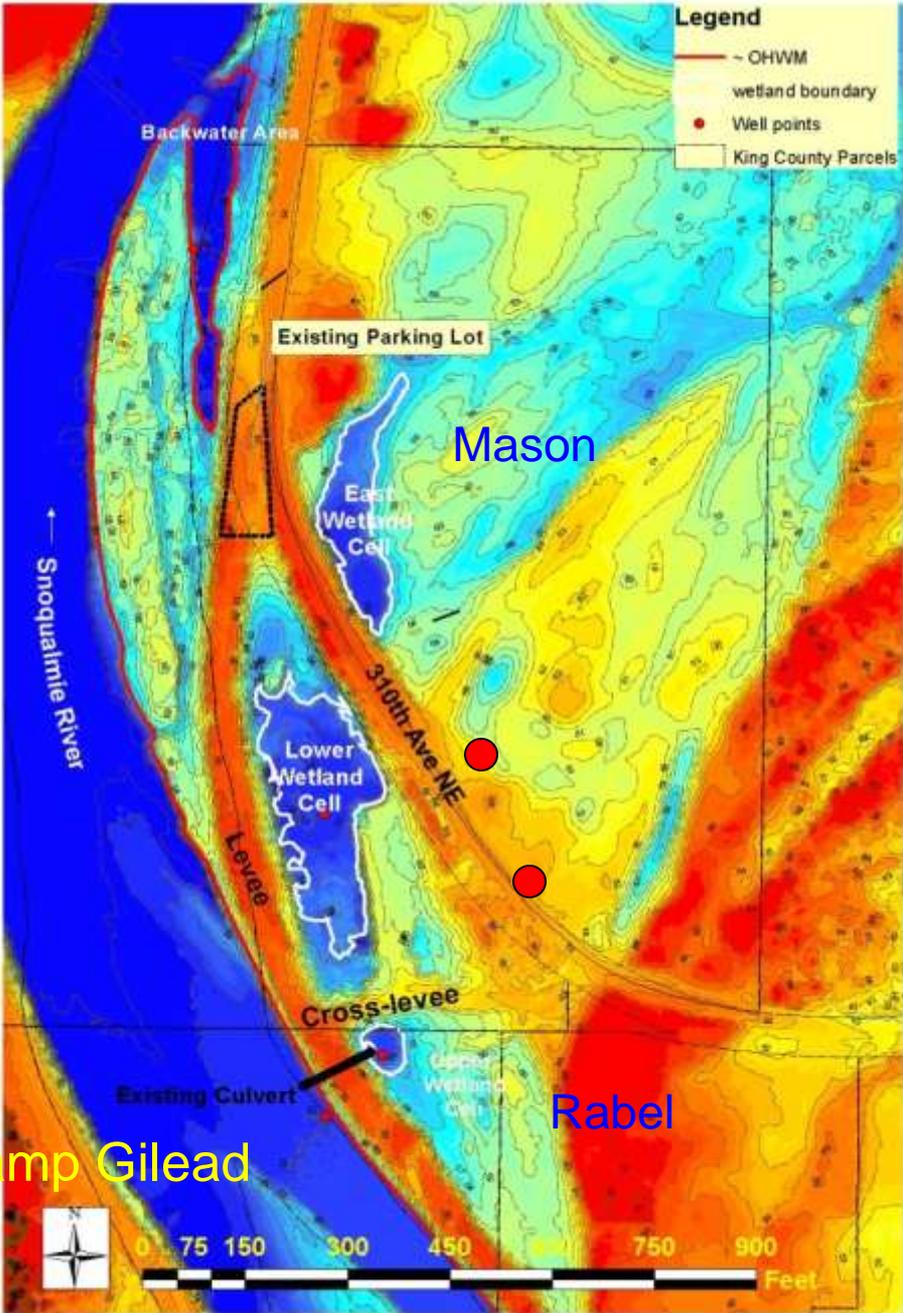
Project Location



Project Vicinity



Existing Conditions

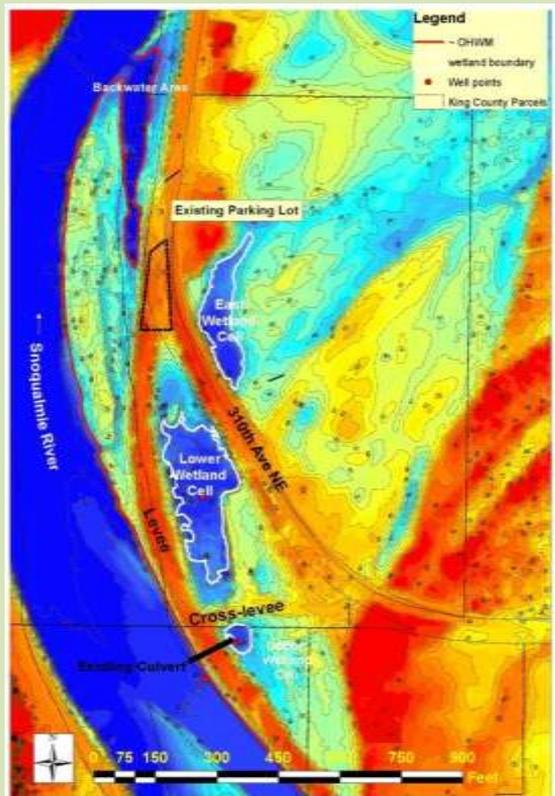


McElhoe Pearson Restoration Project
Figure 2: Existing Features

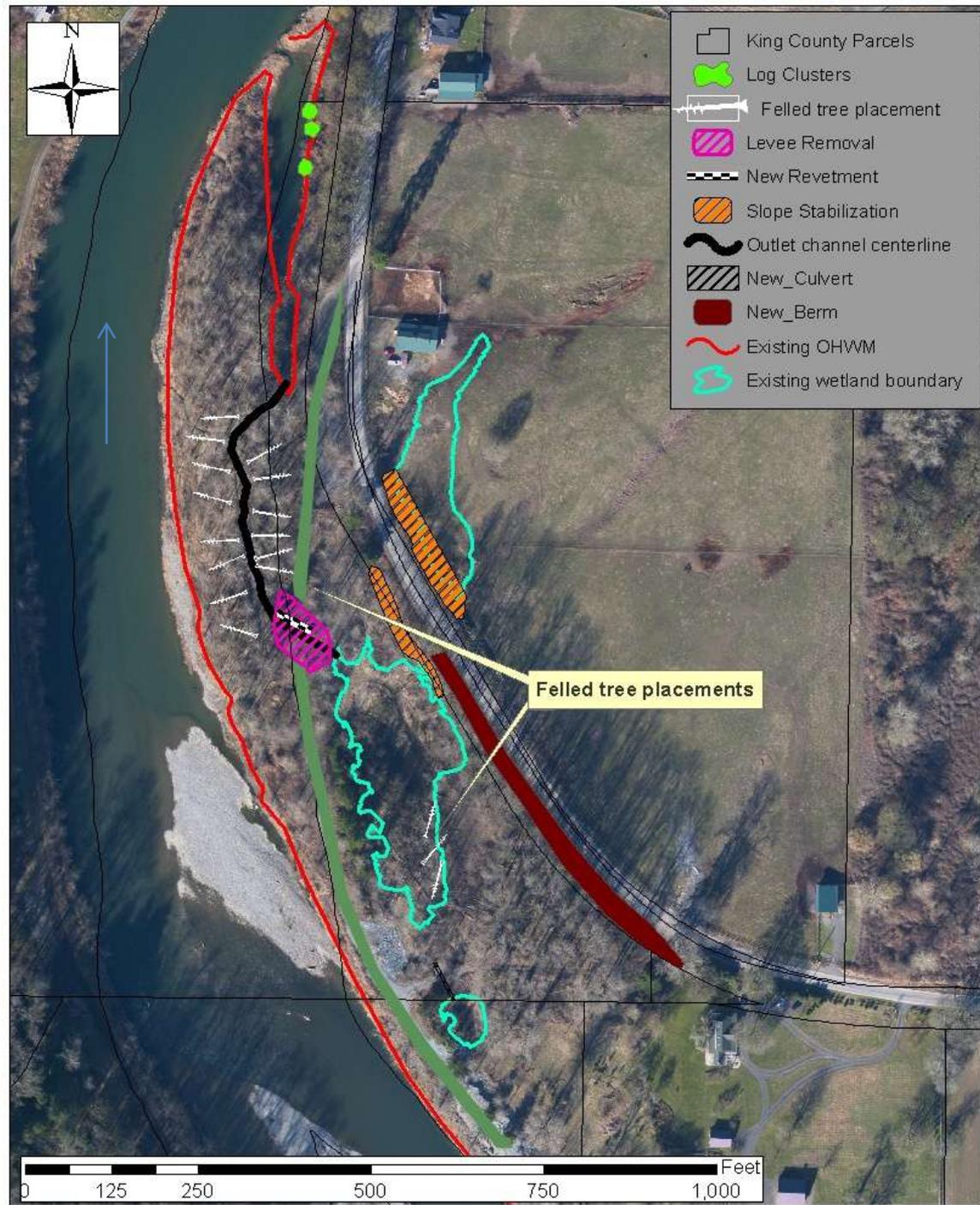
Project Goals

- Restore the connection between channel and floodplain.
- Restore rearing and refuge habitat for juvenile salmon.
- Maximize habitat value while protecting private property and public infrastructure.
- Reduce flood hazards and flood facility maintenance.
- Continue KC WLRD's efforts to build stakeholder trust.
- Meet WSDOT mitigation need.

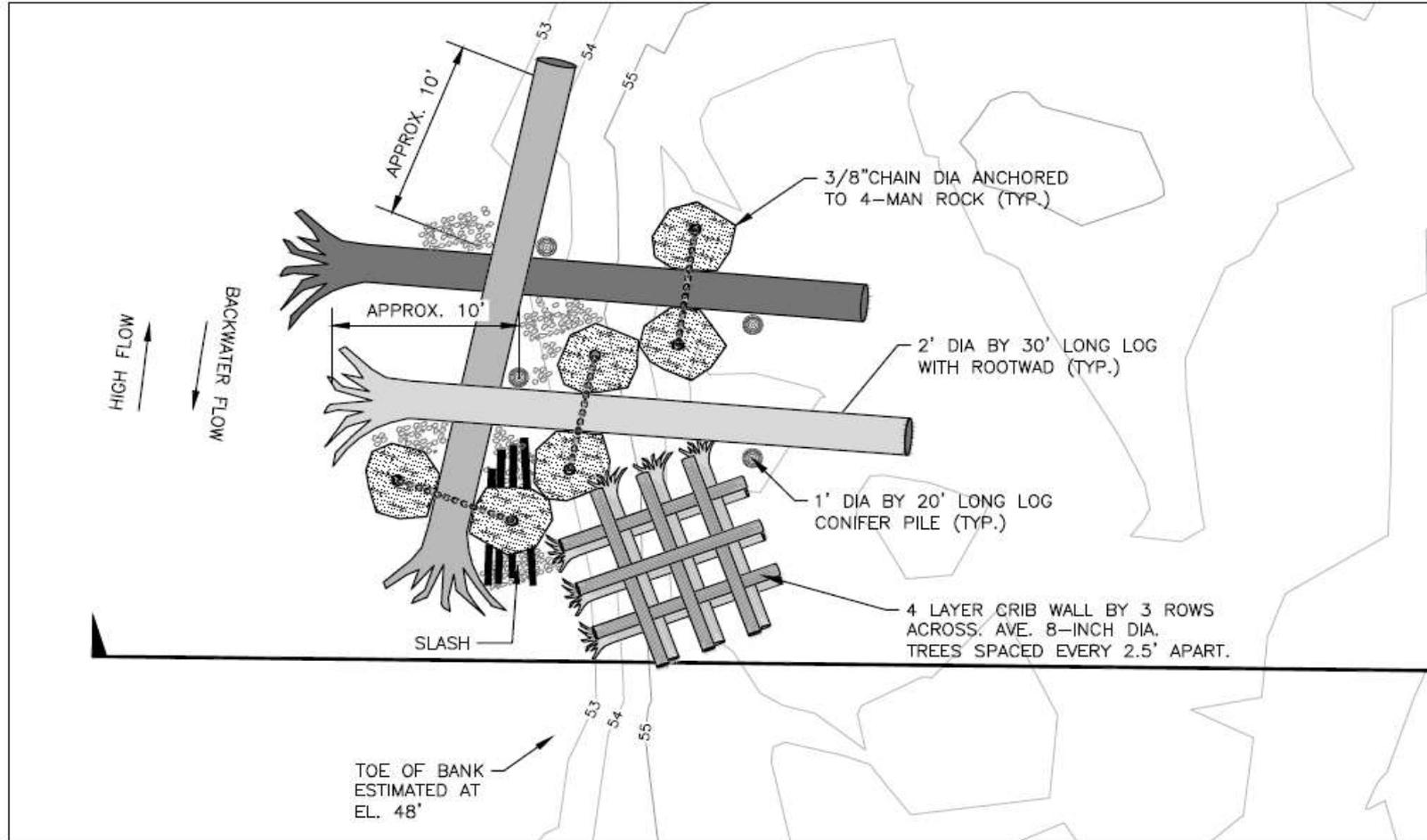
Proposed Concept



McElhoe Pearson Restoration Project
Figure 2: Existing Features



Log Cluster Detail



LOG CLUSTER DETAIL - PLAN (TYP)

NTS



Large Wood Placement & Recreational Use

- Wood placement in new outlet channel and existing backwater and wetland areas.
- Primary function = habitat value, channel roughness, and to meet WDOT mitigation needs.
- Known moderate use by floaters, boaters, fishermen
- LW Project Checklist will be updated with 60% design

Project Schedule

July, 2012	60% design completion, receive permits
Aug., 2012	Construction
Dec., 2012	Planting
2013-2017	Maintenance & Monitoring

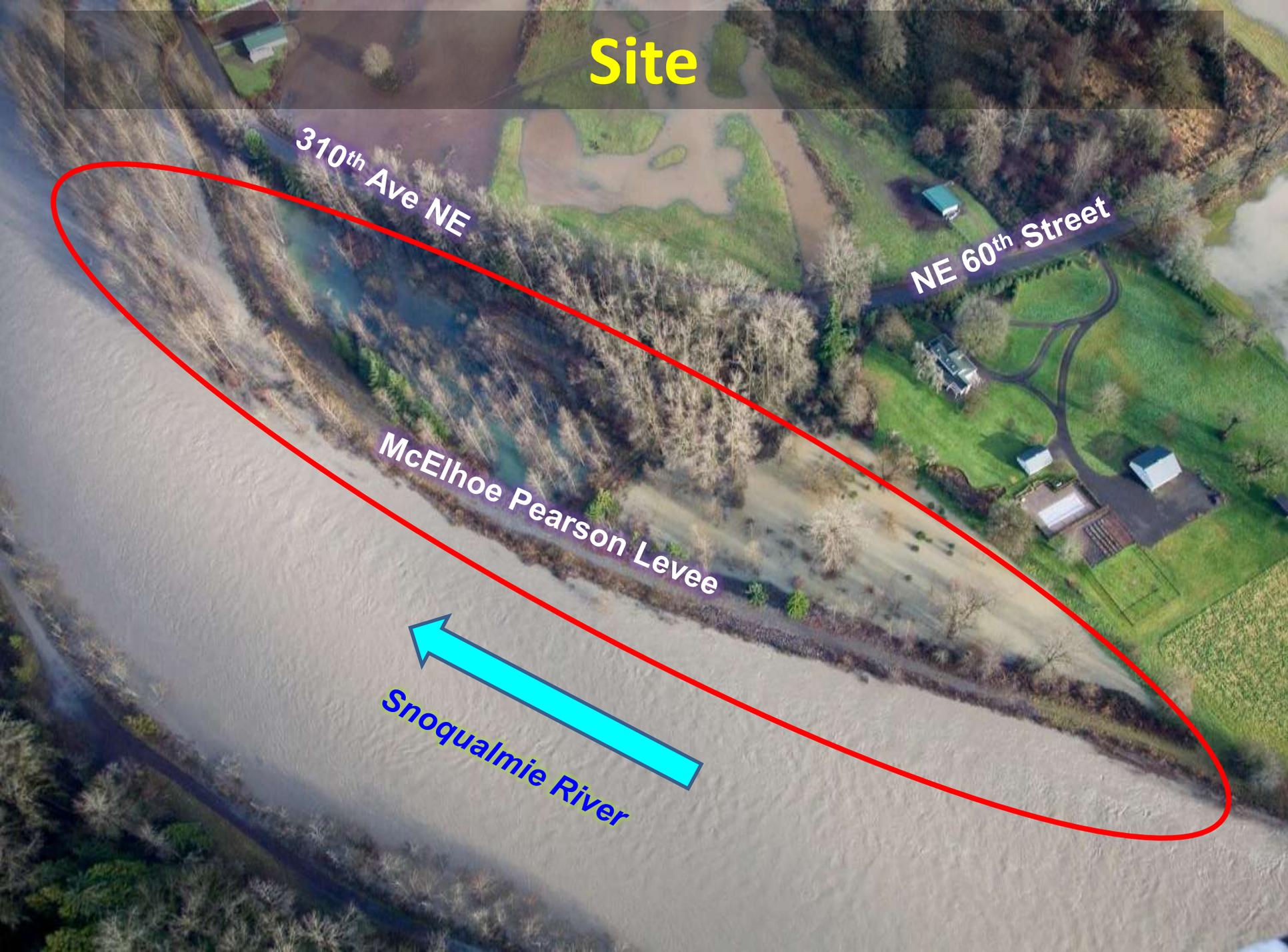
Site

310th Ave NE

NE 60th Street

McElhoe Pearson Levee

Snoqualmie River



Reddington Levee Setback and Extension Project

**Briefing for Large Wood Placement
meeting**

June 27, 2012

Project Manager: Erik Peters, P.E.

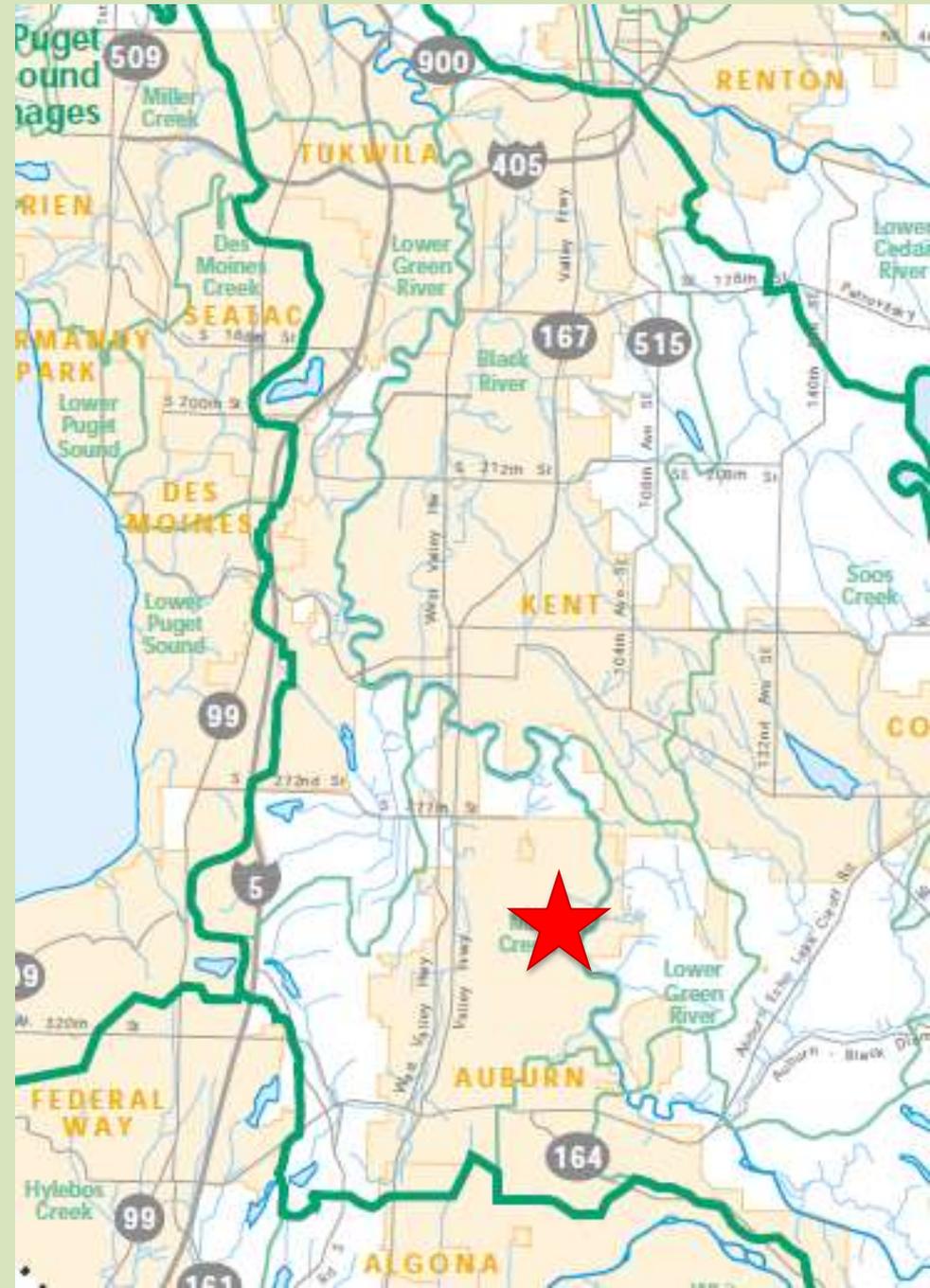


Reddington Levee Setback Project

Location: Auburn, Green River RM 28.2 – 29.5, left bank

Action: Remove an aging levee and construct new levee in a setback location

Goals: Improve flood protection and riparian habitat



Reddington Levee Setback and Extension Project

- 6,600 feet of new levee construction
- 4,750 feet of existing levee to be removed
- \$12 million project cost estimate
- \$1 million state grant (terms require construction in 2013)



Project Schedule Milestone Projections

Milestone	Date
30% Design Completion	July 20, 2012
SEPA Comment Notice	August, 2012
60% Design Complete	Sept. 28, 2012
100% Design Complete	Feb. 8, 2013
Advertise for Construction Bids	March 2013
Construction	May – November 2013

Project Location Map

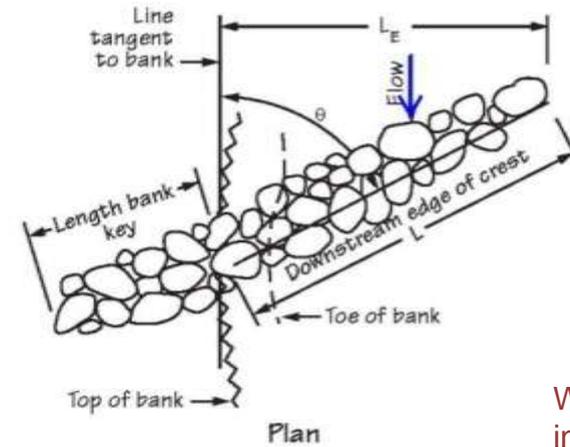
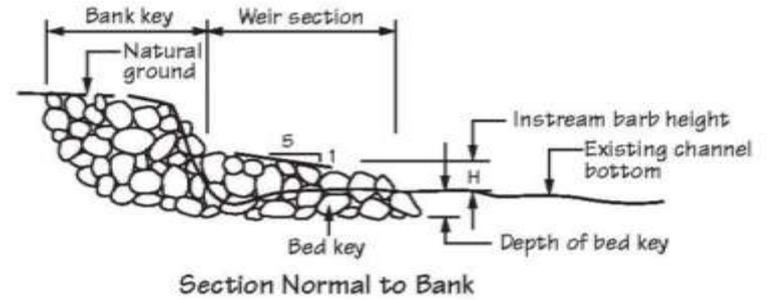


Brannan Park and Pump Station – South End of Project

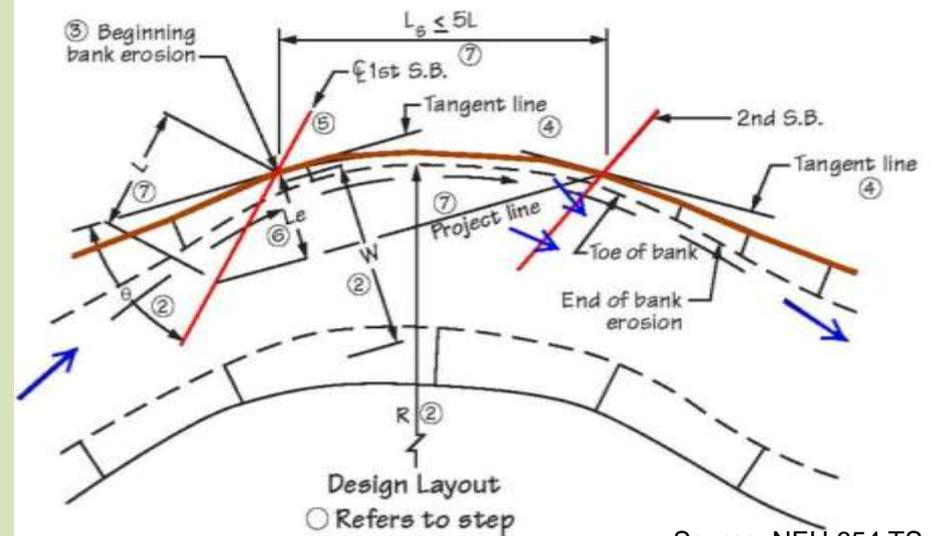
- Combination of scour protection measures
 - Bendway weirs, rock spurs
 - riprap revetment at pump station
 - large wood (ELJs) possible



Bendway Weir (Barb) Graphic



Wood could be incorporated into weirs



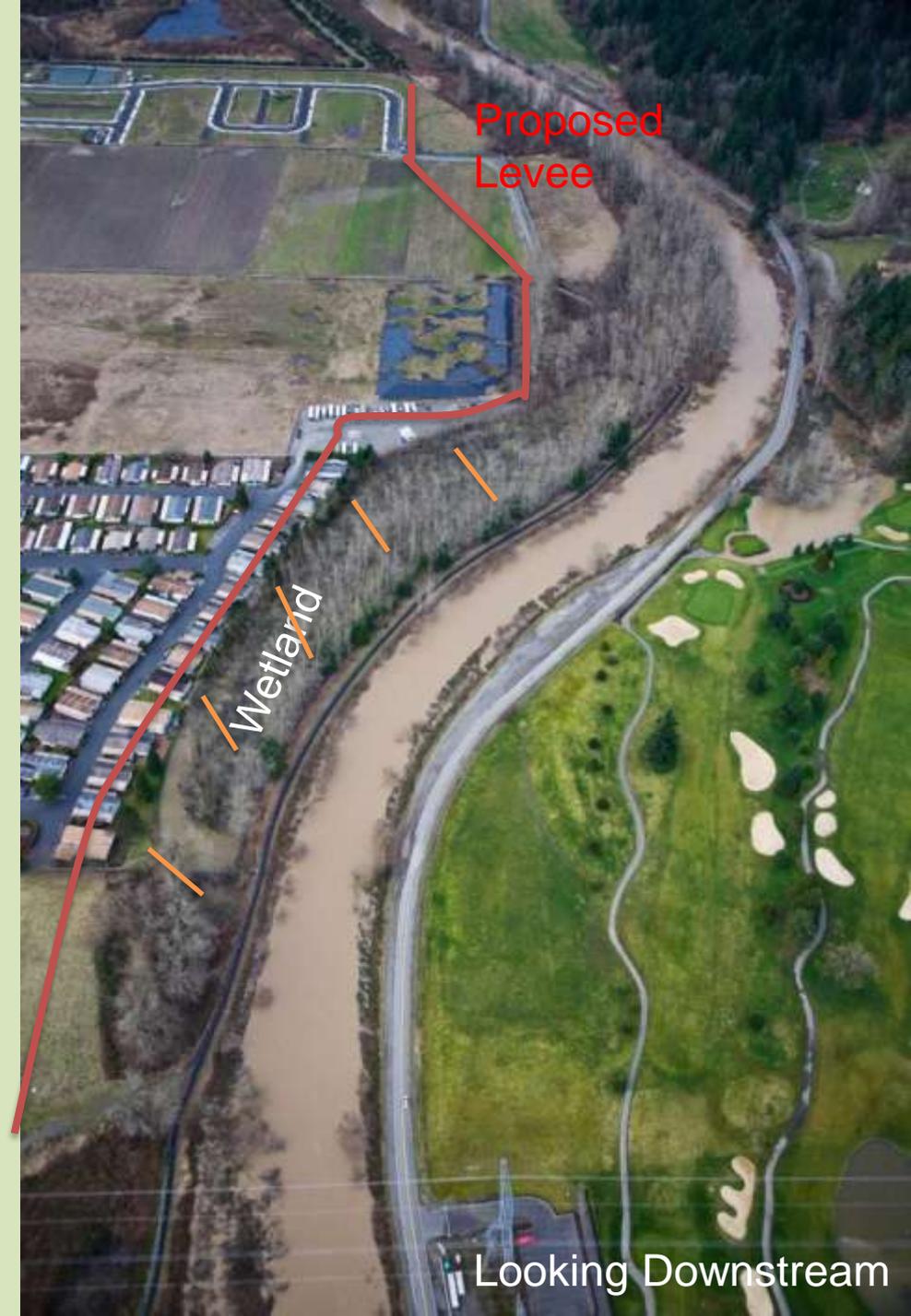
Source: NEH 654 TS 14H

Purpose:

- Keep the river from becoming fixed against the new setback levee face
- Reduce the flow velocity at the levee face and amount of riprap armoring needed

North End of Project

- Levee Setback behind wetland adjacent to River Mobile Home Estates
- Combination of scour protection measures likely along River Mobile Estates
 - riprap revetment
 - Bendway weirs
 - Large wood (ELJs) installed to provide levee toe scour protection





Pump
Station

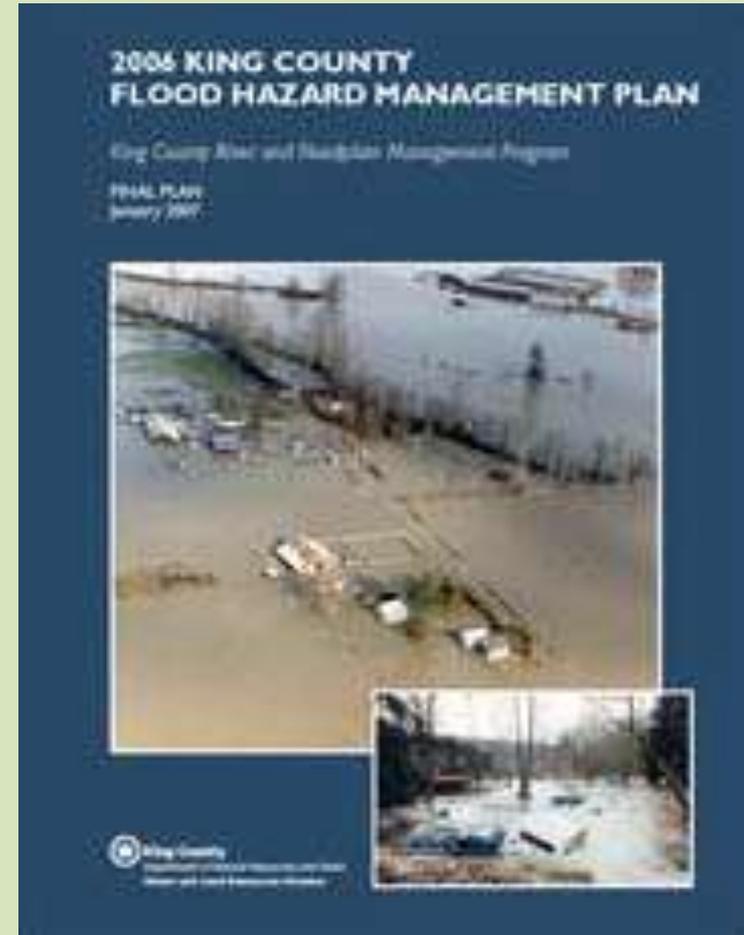


Wetland reconnection to River

February 2012

Adopted Flood Plan Goals

1. Reduce the risks from flood and channel migration hazards
2. Avoid or minimize the environmental impacts of flood hazard management
3. Reduce the long-term costs of flood hazard management



Reddington Levee Protects:

596 parcels

- 321 residential

- 275 commercial

Total assessed value:

\$680 million

Inundated Areas

Governing Scenario

- All Levees Intact
- Reddington
- Reddington + Mill Cr/Mullen St.
- Horseshoe Bend
- East Valley
- Midway/Johnson Creek
- Fail All Levees

FLO-2D Model Domain

Levee Extension (future phase)

Reddington Levee Setback & Extension (Phase 1) project length

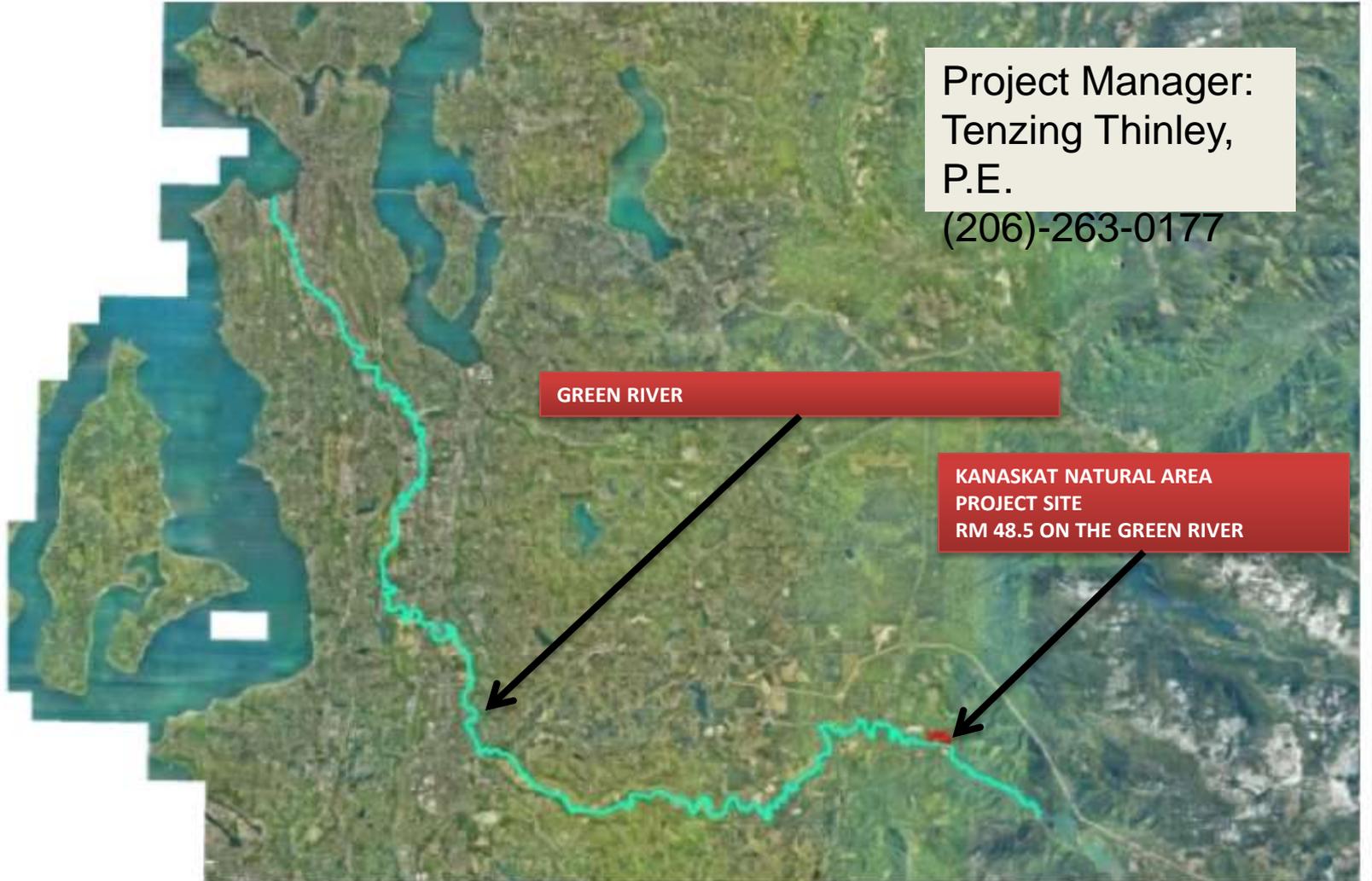
Kanaskat Reach Restoration

KANASKAT REACH NATURAL AREA VICINITY MAP

Project Manager:
Tenzing Thinley,
P.E.
(206)-263-0177

GREEN RIVER

KANASKAT NATURAL AREA
PROJECT SITE
RM 48.5 ON THE GREEN RIVER



Kanaskat Reach Restoration

KANASKAT REACH NATURAL AREA OBJECTIVES

OBJECTIVES:

- 1) Restore areas degraded by past residential land use. Reclaim driveways, restore natural drainage by removal of culverts, re-establish native plants in open spaces and remove invasive plants.

Project Action (Phase 1-2012):

- Remove approx 2200' of old driveway, existing culverts and utilities and restore drainage.
- Remove invasive plants and plant open spaces with native species.

- 2) Restore fish passage and improve stream habitat by removing barriers and improving stream and riparian habitat where necessary.

Possible Project Actions (Phase 2):

- Remove rip rap along stream.
- Evaluate option of placing wood in-stream.
- Remove invasive plants and plant creek buffer with native plants.

Kanaskat Reach Restoration

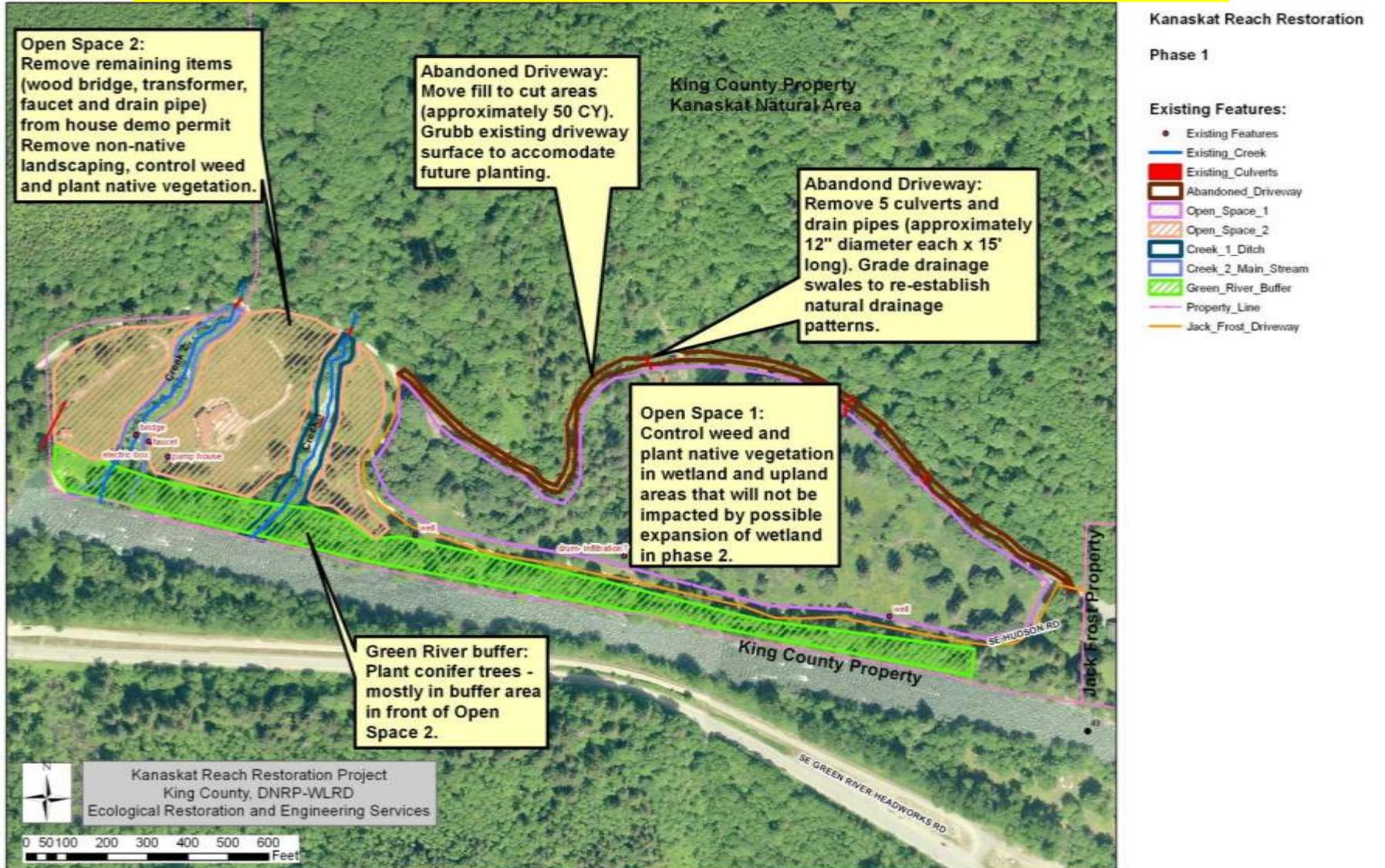
KANASKAT REACH NATURAL AREA EXISTING CONDITIONS



Existing Conditions

Kanaskat Reach Restoration

KANASKAT REACH NATURAL AREA PHASE 1-SUMMER 2012





Rainbow Bend Levee Removal and Floodplain Reconnection

Jon Hansen, Project Manager
King County Water and Land Resources
Division
6-27-2012

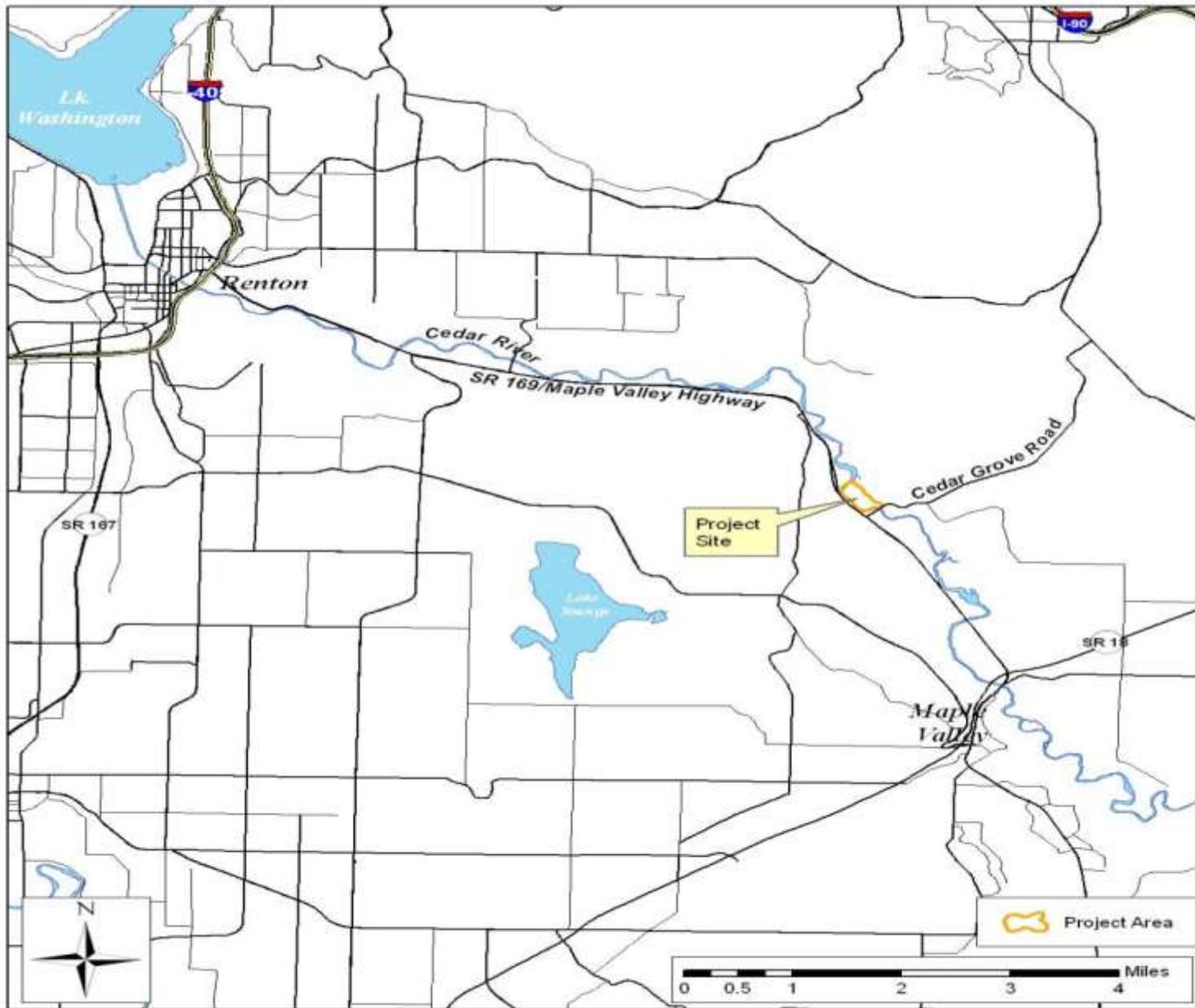


Figure 1: Vicinity Map

Rainbow Bend Levee Removal and Floodplain Enhancement Project

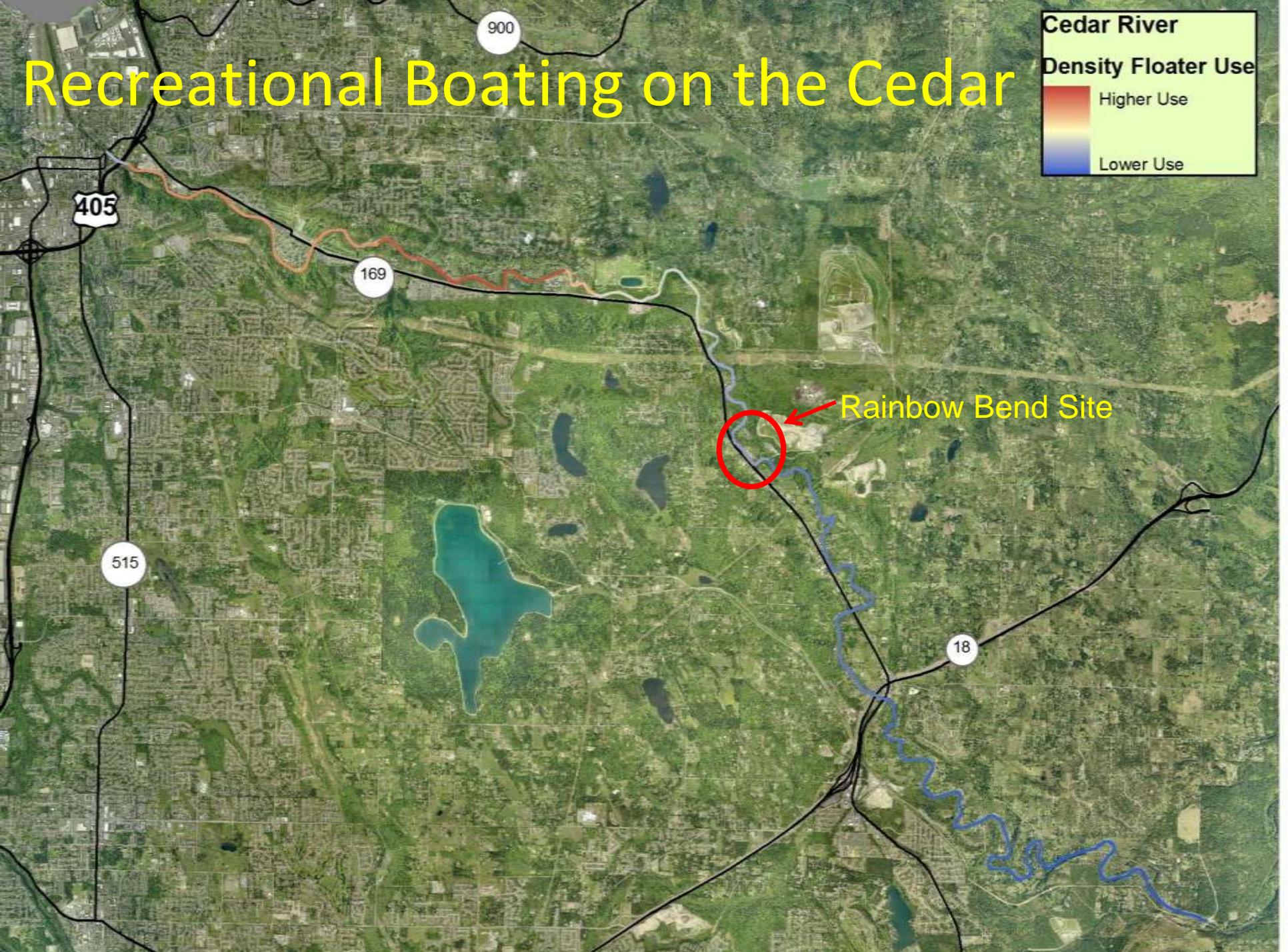
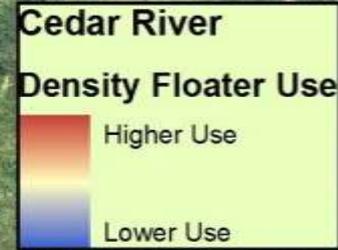


Site Conditions/Project Setting

2009 Aerial Photo



Recreational Boating on the Cedar

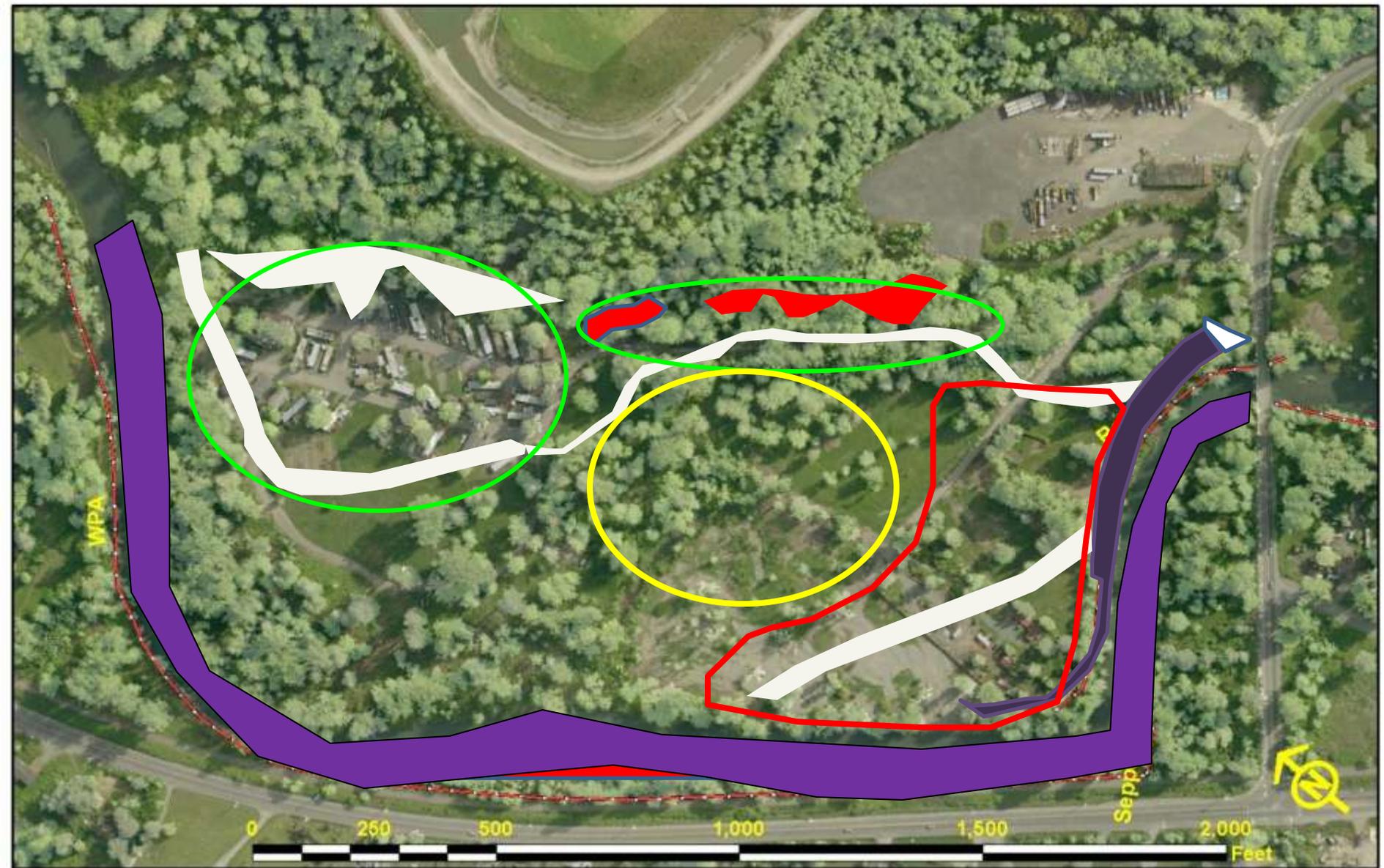




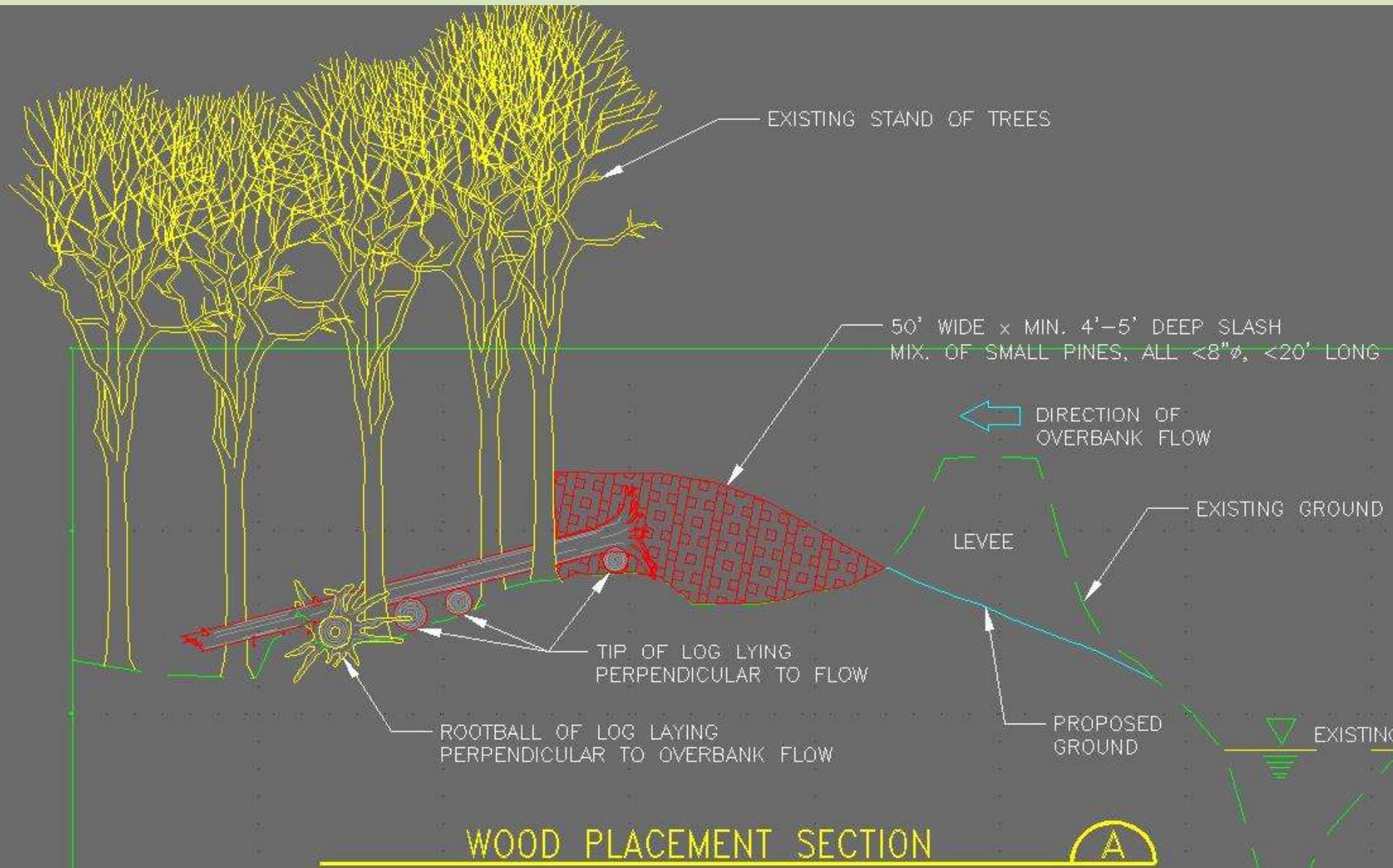
Project Goals

- Goal 1: Reduce flood risks to people and infrastructure.
- Goal 2: Reduce the need for future facility maintenance and emergency response
- Goal 3: Restore floodplain functions and processes that provide for natural development of riverine habitat and aid salmon recovery.
- Goal 4: Address impacts of the project on recreational safety.

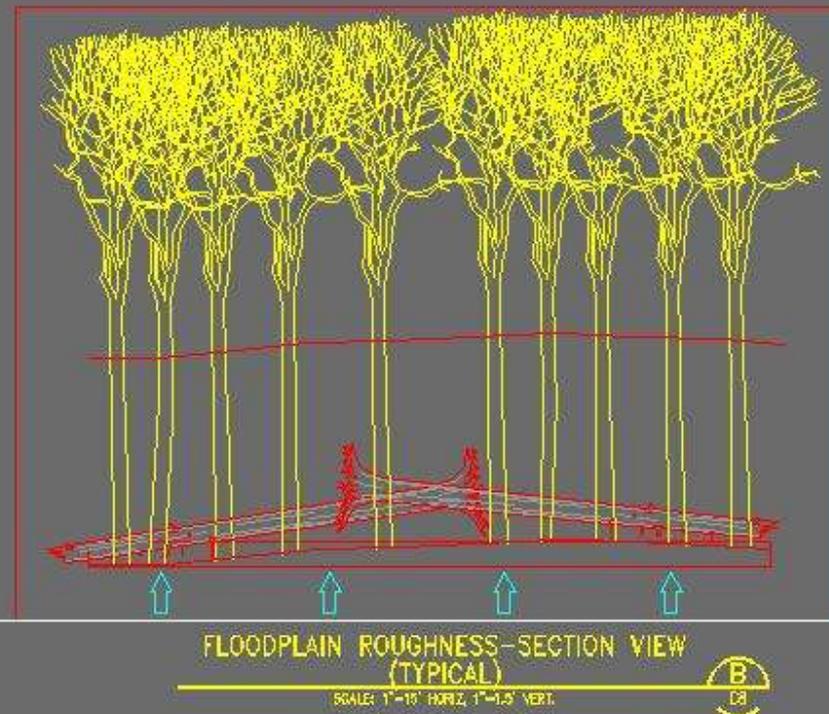
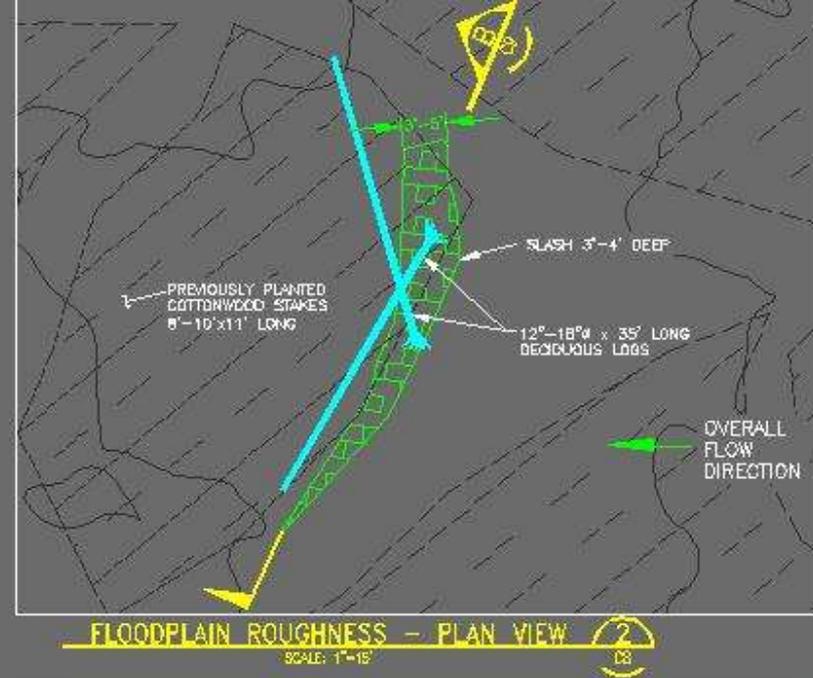
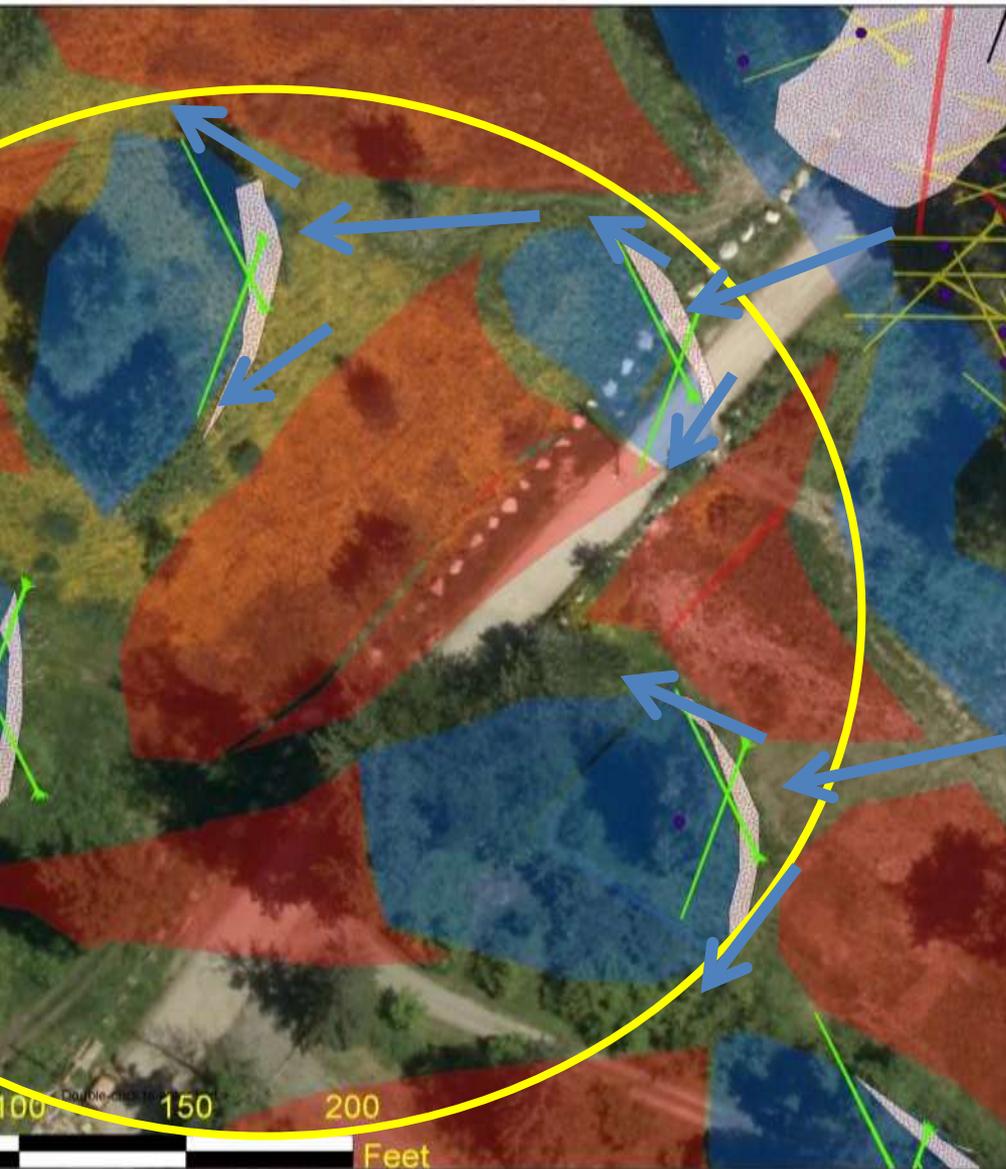
What Work is planned?



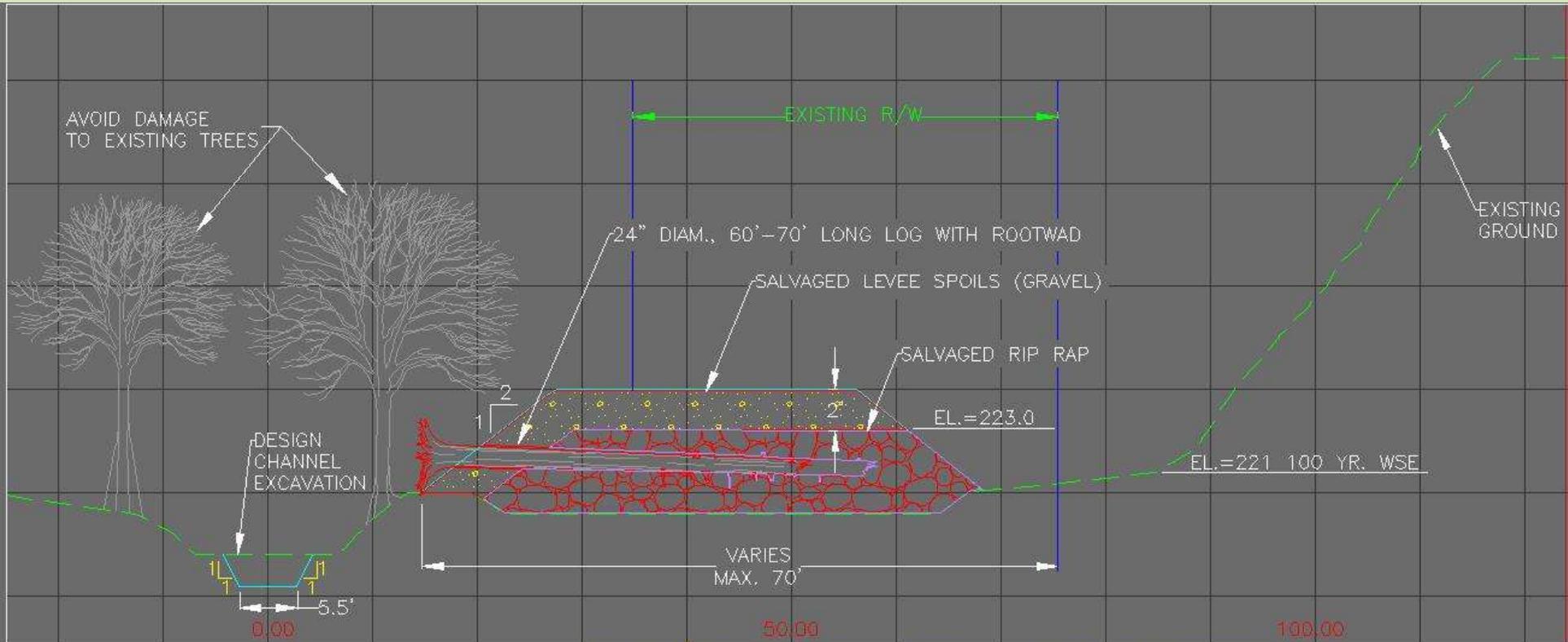
Cross-section through upstream wood



Interior Floodplain Roughness



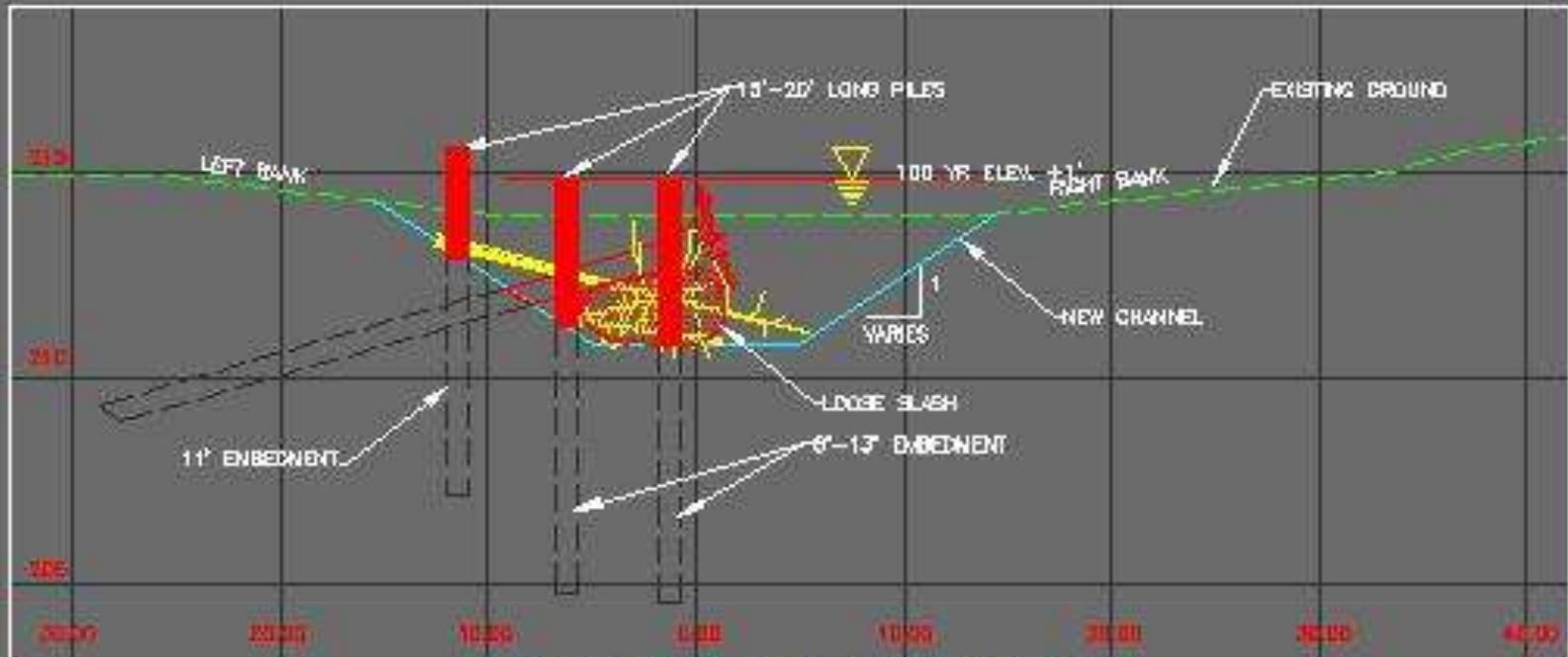
North Valley Wall Fill Areas



ROCK/GRAVEL FILL FOR SLOPE PROTECTION
STA. 18+40 - SIDE CHANNEL

SCALE: 1"=10', 1"=5' VERT.

B
C3



**SMALL WOOD JAMS—SECTION VIEW
(TYPICAL)**

SCALE: 1"=9' HORIZ. 1"=2.5' VERT.



**CALL 2 WORKING DAYS
BEFORE YOU DIG
1-800-424-5555**

(UNDERGROUND UTILITY LOCATIONS ARE APPLIED.)

T. No. 0000
No. 024021

King County
Department of Natural Resources and Parks
Natural and Cultural Services Section
Bioscience Resource
Project Information...

**RAINBOW BEND
FLOODPLAIN RESTORATION**

WOOD PLACEMENT DETAILS

SHEET
09
OF
16
SHEETS

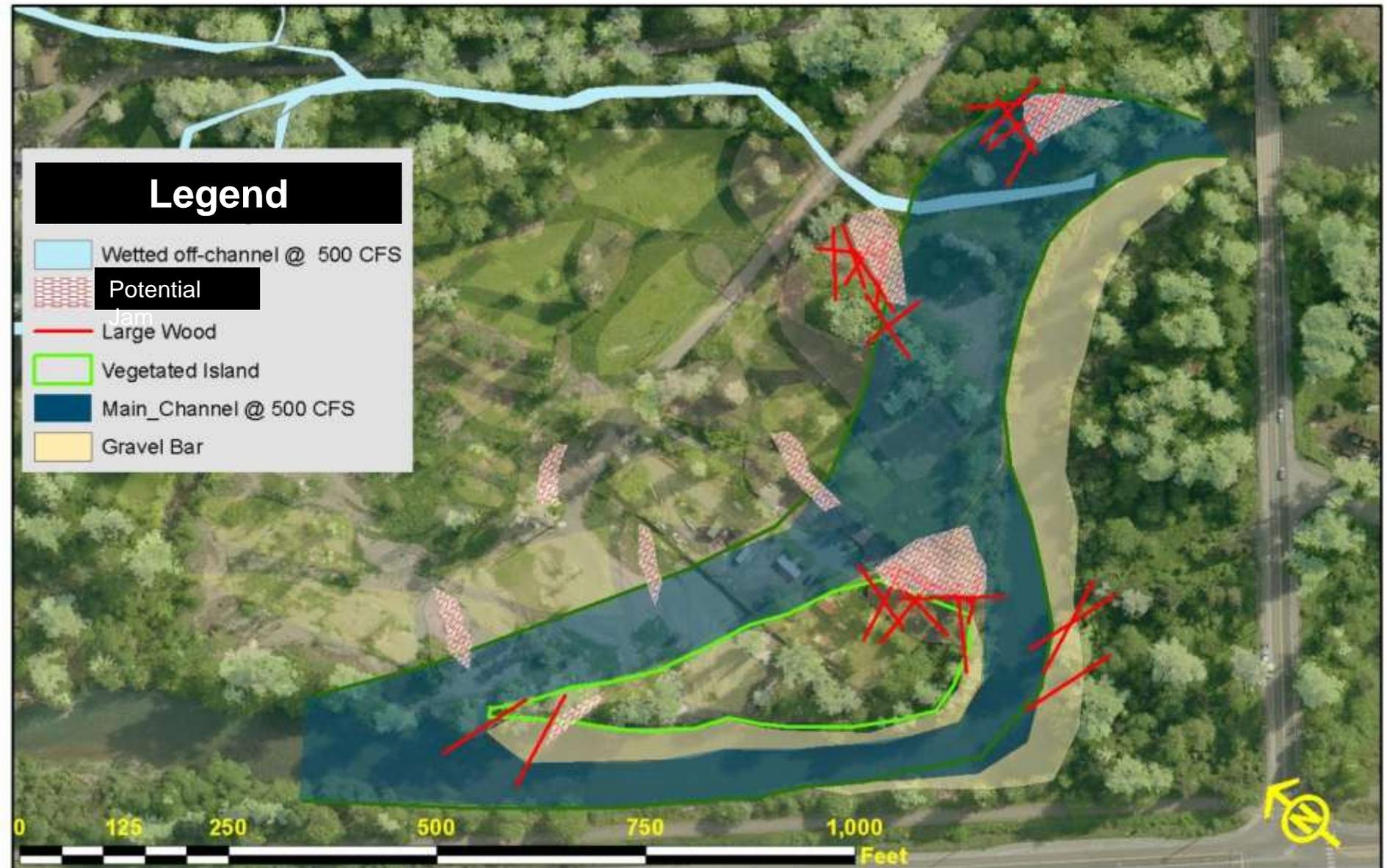
Large wood Placement – Backwater areas

How Will River/Site Change

- Reach will be **dynamic and change** over time
- Erosion at upstream end, channel will widen, side channels form
- Trees will fall into the channel as bank erodes
- Trees, logs, wood will accumulate in reach

Potential Future Conditions

10 to 20 year



How Will Changes Affect Use

- Additional obstacles/hazards will be present
- Floating/boating may not be advisable under certain flows or conditions
- Reach may need to be closed at times based on conditions

Mitigation of Risks

Wood

- No placed wood in active channel
- Placement back from initial migration
- Selective tree removal
- No “permanent” fixed wood structures
 - Individual pieces
 - Strategic Anchoring

Site Management

- Warning/Advisory Signs
- Boater take out
- Improvement of portage – trail access
- Public outreach and education
- Post Project Adaptive Management plan

Site Reach Management Plan

- Plan for future management actions before project built
- Range of actions to be considered and when
- Clearly identify who has responsibility to act
- Adopted prior to construction
- Developed with input from public

Adaptive Management Concepts

(Still being developed)

- Consistent with natural wood procedures under development
- Protect infrastructure and private property
- Strives to **minimize** post project intervention
- Progressive Strategy
 - Beginning with info (signs, notice, outreach)
 - Includes use restrictions (seasonal, temporary or longer term as specified by KC Sheriff)
 - Judicious wood adjustments in consultation with Sheriff

Project Timeline

- 30 % Design June 2012
- Public Review of 30% June -July 20
- 60 % Design August 2012
- Permit Submittals Fall 2012
- Construction Summer 2013

Contact Information

Jon Hansen, Project Manager

jon.hansen@kingcounty.gov

206-296-1966

Project webpage:

www.kingcounty.gov/rivers

(Select projects and then Rainbow Bend)

Questions/Open House