

Rainbow Bend Mitigation Project

April 26, 2022

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King County Water and Lands Resources Division



Agenda

Project Location, Objectives & Timeline

Rainbow Bend History & Characteristics

Project Design

Schedule & Estimated Costs

The Lake Washington/Cedar River Watershed

Lake
Washington

City of Renton

Rainbow Bend

Chester Morse Lake

- Watershed Boundary
- Basin Boundary
- River
- Stream



King County

Department of Natural Resources and Parks
Water and Land Resources Division

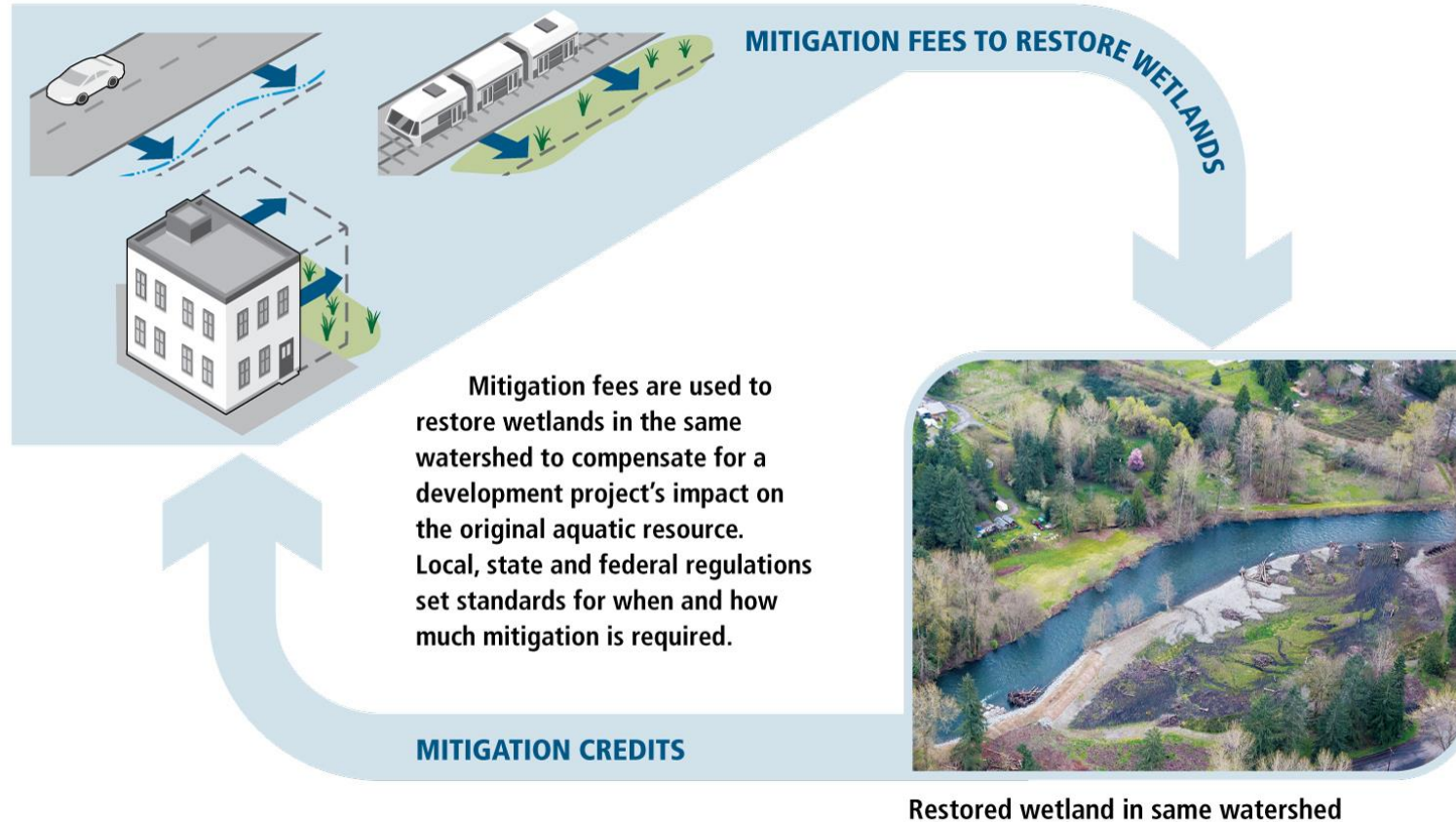
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Primary Project Objectives

- Maximize ecological potential
- Minimize risk
- Optimize cost effectiveness

WHAT IS MITIGATION AND HOW DOES IT WORK?

Some development projects have unavoidable impacts to protected aquatic resources, such as wetlands, streams or rivers.



Cedar River/Lake Washington SA Mitigation Sites King County ILF

- Service Areas
- Cedar River Mitigation Sites

Taylor Creek/Skyway
12.19 acres
protected 2015/2021

Elliott Bridge
11.5 acres
constructed 2015/2016

Rainbow Bend
13 acres
pending construction 2023

Taylor Creek/Cedar River
13 acres
constructed 2019

0 2.5 5 10 Miles

King County

Project Timeline

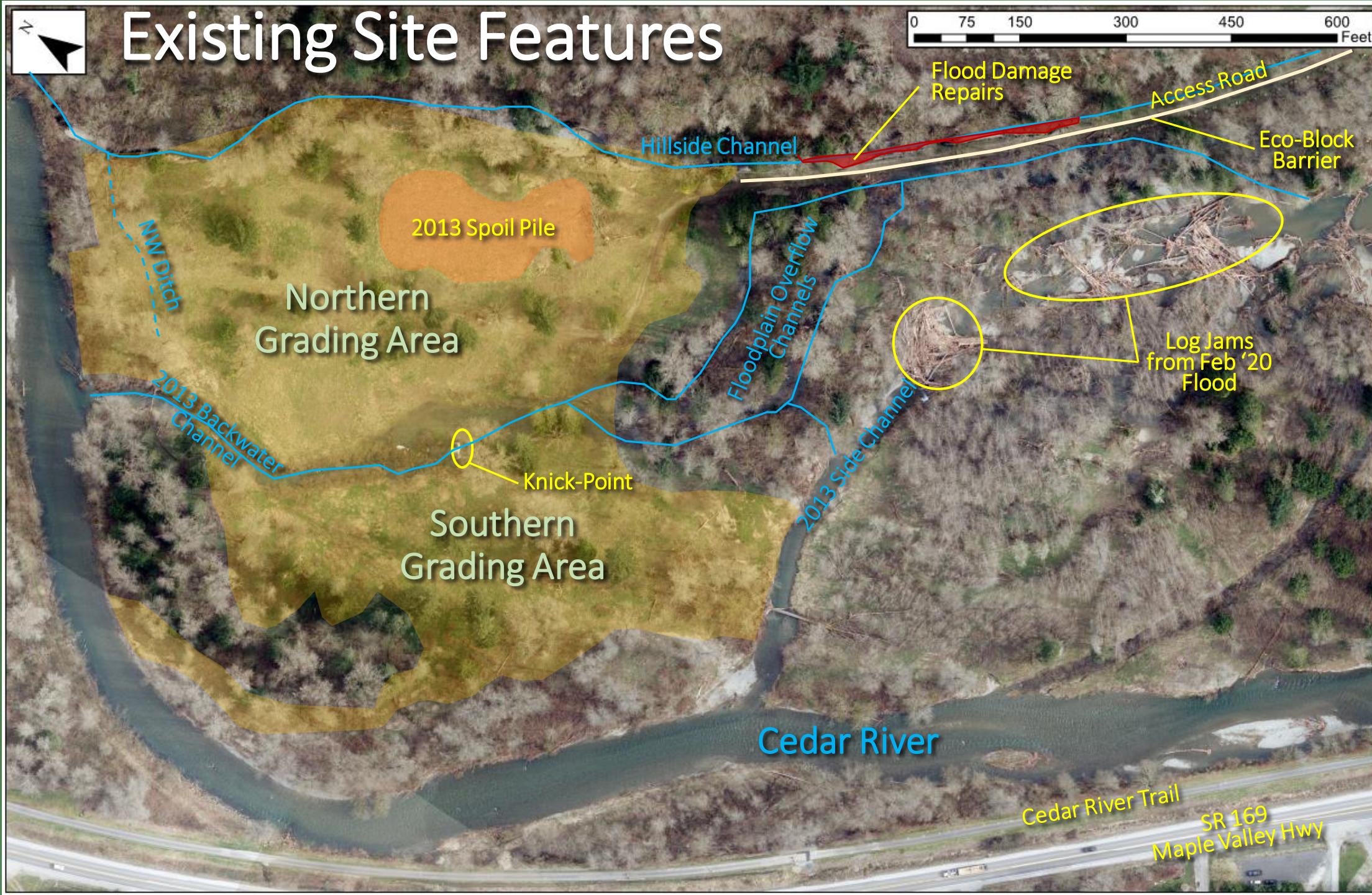
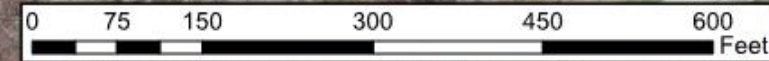
- **Summer 2013:** Rainbow Bend Levee Removal and Floodplain Reconnection Project constructed
- **February 2020:** Interagency Review Team (IRT) selected Rainbow Bend site (also major flooding at site)
- **June 2020:** IRT approved spending authority for design
- **2020 – 2021:** Data collection, technical studies and alternatives development
- **September 2021:** Presented preferred alternative to IRT
- **2021 – 2022:** Alternative refinement and approval, 30% design
- **April 2022:** Presented 30% design to IRT



Site Setting, History & Characteristics



Existing Site Features



2009 Flood



Merlino
Property

Cedar Grove Rd

Mobile Home Park

← Cedar River

Cedar River Trail
SR 169

1936



2013 Restoration Project

2014

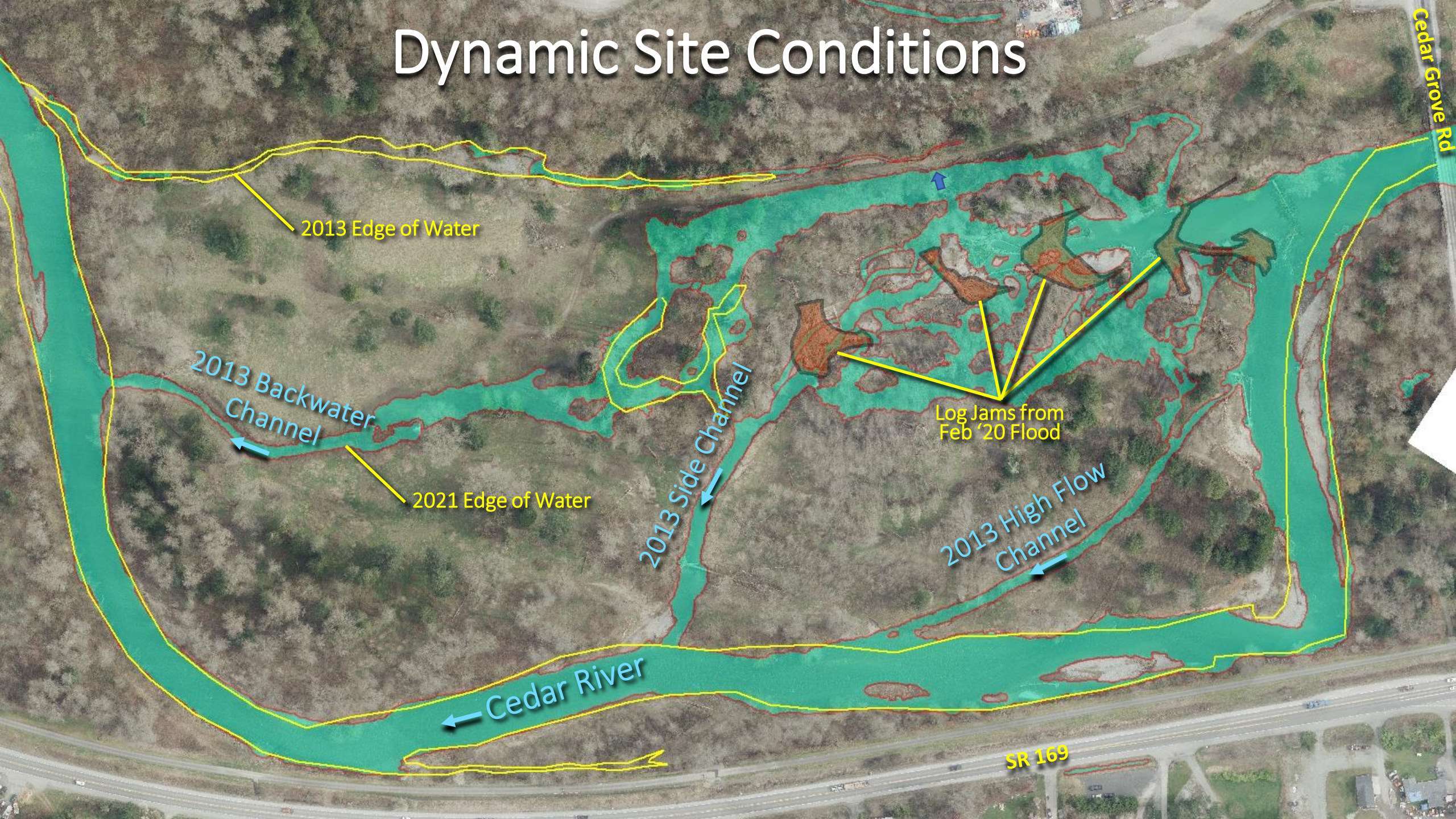


An aerial photograph showing a river flowing through a dense forest. The river is dark and winding, with some sandy or light-colored banks visible. To the left of the river, there is a multi-lane highway with a green median. Further left, there are industrial buildings and parking lots filled with vehicles. To the right of the river, there is another industrial area with various structures and equipment. The forest is thick and green, covering most of the central and right portions of the image. The text "Dynamic Site Conditions" is overlaid in white at the top, and "Evolving Geomorphology" is overlaid in white at the bottom.

Dynamic Site Conditions

Evolving Geomorphology

Dynamic Site Conditions



April 2021

2013 Side Channel

2013 Backwater
Channel

2013
Spoil
Pile

Hillside Channel



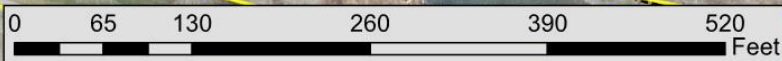


Project Design

Rainbow Bend Mitigation Project, April 2022
Wetland Communities & Existing Large Trees



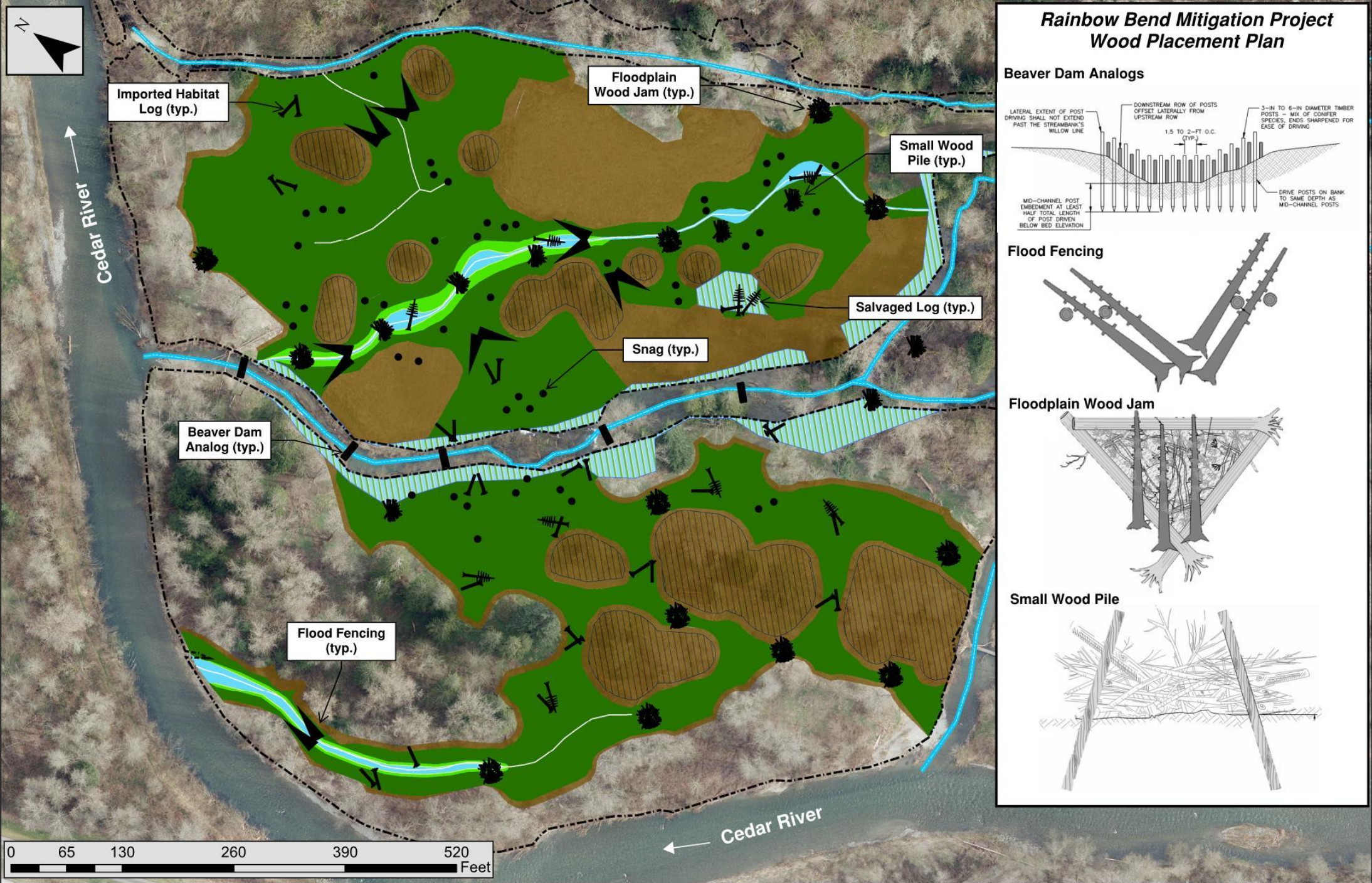
Cedar River →



← Cedar River

NOTE: All construction limits, habitat wood placement and wetland community extents are preliminary and will be refined as the design progresses

- Parcel Boundary Survey
- OHW
- Large Trees (>16" DBH)
- Channel/Swale Centerlines
- Wetland Enhancement (0.8acres)
- Deep Emergent Wetland (0.2acres)
- Palustrine Emergent Wetland (0.05acres)
- Scrub Shrub Wetland (0.15acres)
- Forested Wetland (6.0acres)
- Tree Retention Islands (1.6acres)
- Upland Enhancement (3.2acres)
- Existing Intermittent Floodplain Flowpaths
- Existing Perennial Floodplain Flowpaths



Summary Schedule & Key Milestones

- | | |
|--|-------------------------------|
| ➤ <u>Pre-Construction:</u> | July 2020 – April 2023 |
| • Alternatives Analysis | December 2021 |
| • 30% Design | April 2022 |
| • 60% Design | July 2022 |
| • 90% Design | October 2022 |
| • 100% Design | January 2023 |
| • Notice-to-Proceed | April 2023 |
| ➤ <u>Construction:</u> | Summer/Fall 2023 |
| ➤ <u>Monitoring & Adaptive Management:</u> | 2023 - 2033 |

Estimated Costs*

Project Management & Design:	\$1,650,000
Construction:	\$3,635,000
Construction Management:	\$550,000
Monitoring & Maintenance:	<u>\$365,000</u>
Estimated Total:	\$6,200,000

*Estimated costs include planning level contingency.

A scenic view of a forest stream. The water is clear, reflecting the sky and surrounding trees. A large gravel bar is visible in the middle of the stream, with several fallen logs resting on it. The banks are covered in dense green foliage and trees. The sky is blue with scattered white clouds.

Thank You!

Craig Garric, PE – Project Manager
King County Water and Lands Resource Division



Project Elements



Credit Generating Elements

- 6.4 acres wetland re-establishment
- 1.6 acres tree retention islands (assuming transition to wetland)
- 0.1 Wetland C Enhancement

Additional Elements

- 0.7 acres Wetland A enhancement
- 3.2 acres upland enhancement
- 7.8 acres undisturbed
- Large wood features (log complexes, habitat logs, habitat snags, beaver dam analogs)

February 2020 Flood



2013 Backwater
Channel

2013 Spoil Pile



Evolving Hydrology



Head-Cutting



Large Wood Recruitment



Access Road



Increased Beaver Activity