



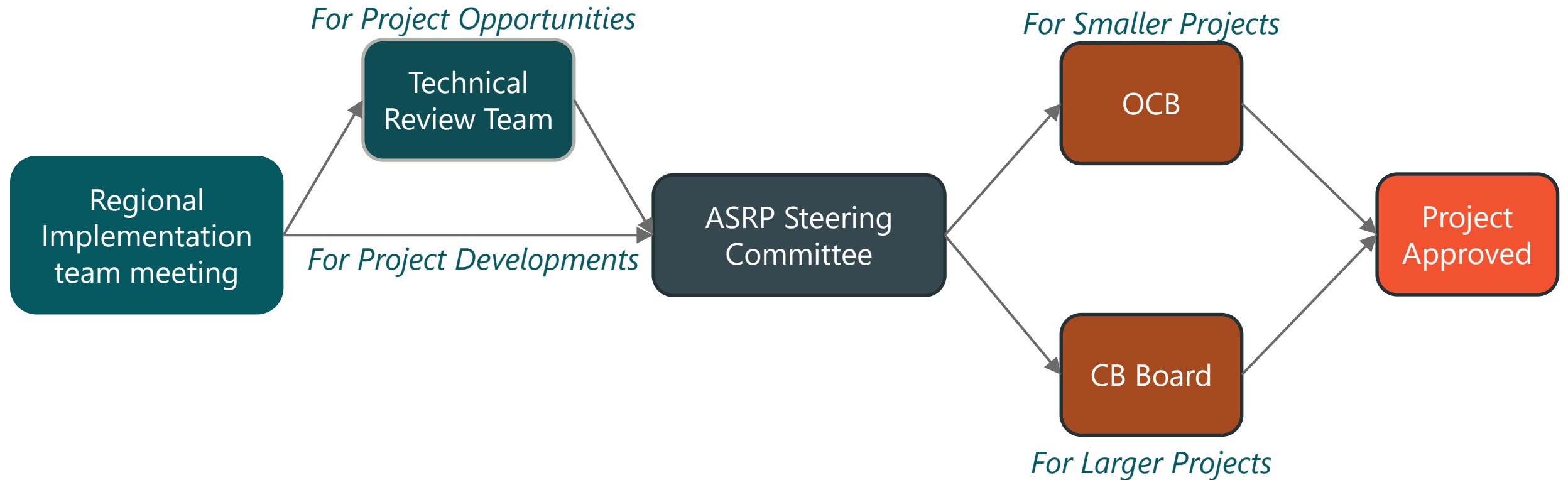
Cloquallum Knotweed Control

Drew Mealor, WDFW; John Stepanek, GHCD; Kiley Smith, GHNWCB

4/4/24



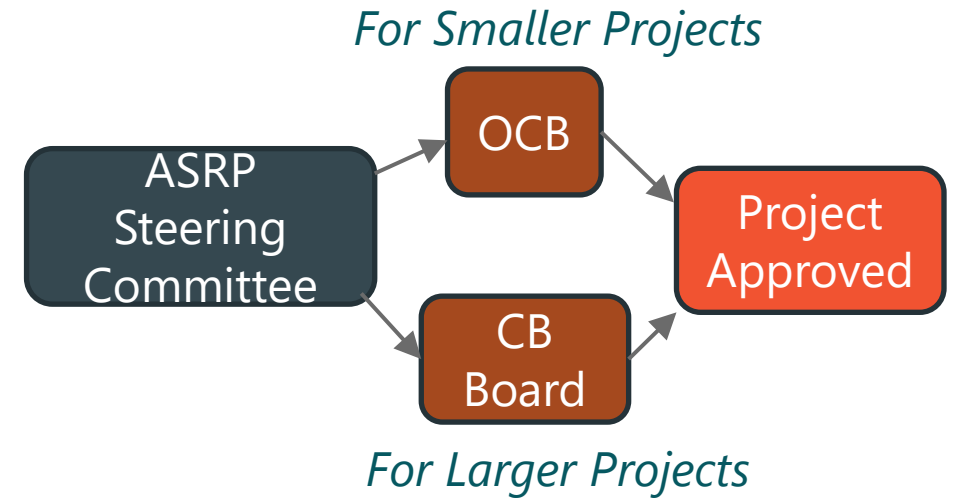
HOW DO WE APPROVE ASRP PROJECTS?



ASRP PROJECT FUNDING APPROVAL

ASRP project approval process:

- Board approval needed for project funding requests exceeding \$500,000
- Two-part approval process
 - First meeting – project introduction
 - ***Second meeting – decision/vote to approve (or not approve) project for funding***

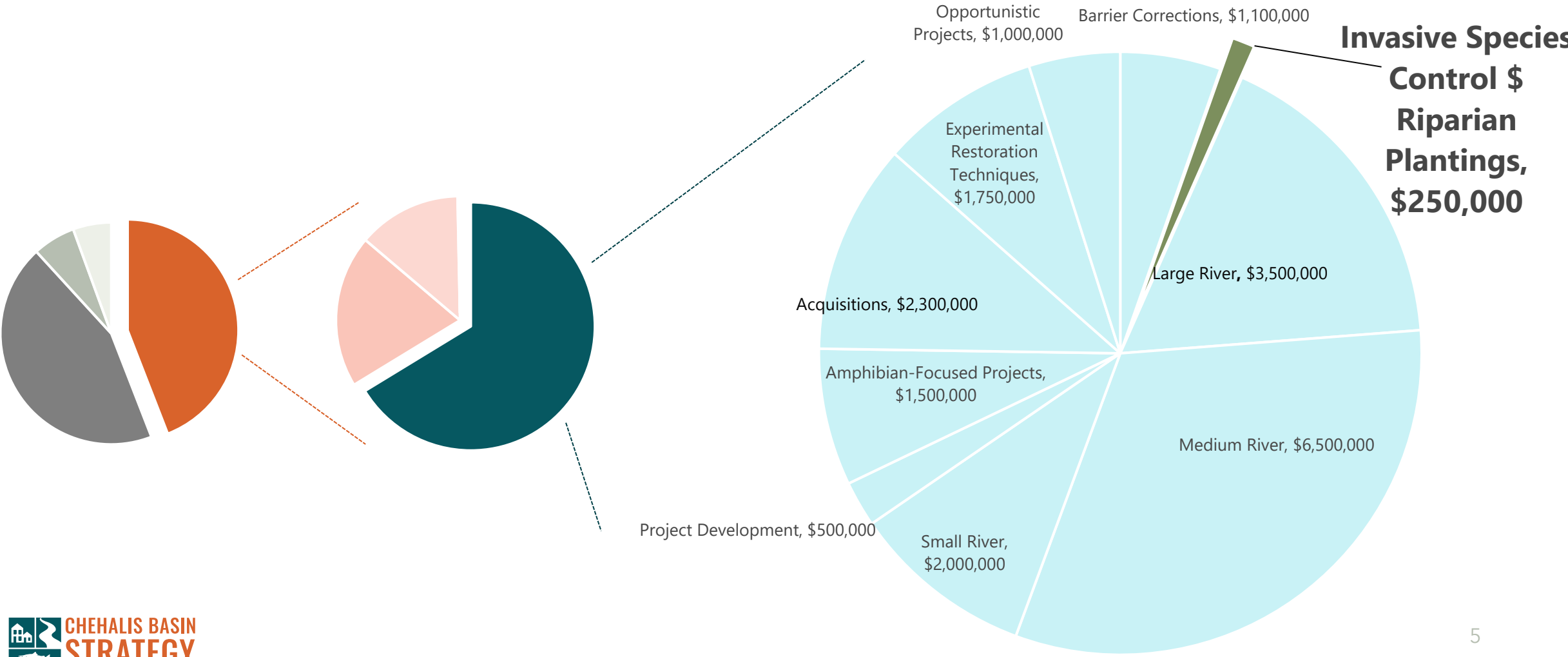


ASRP BUDGET STATUS & PROJECT REQUEST

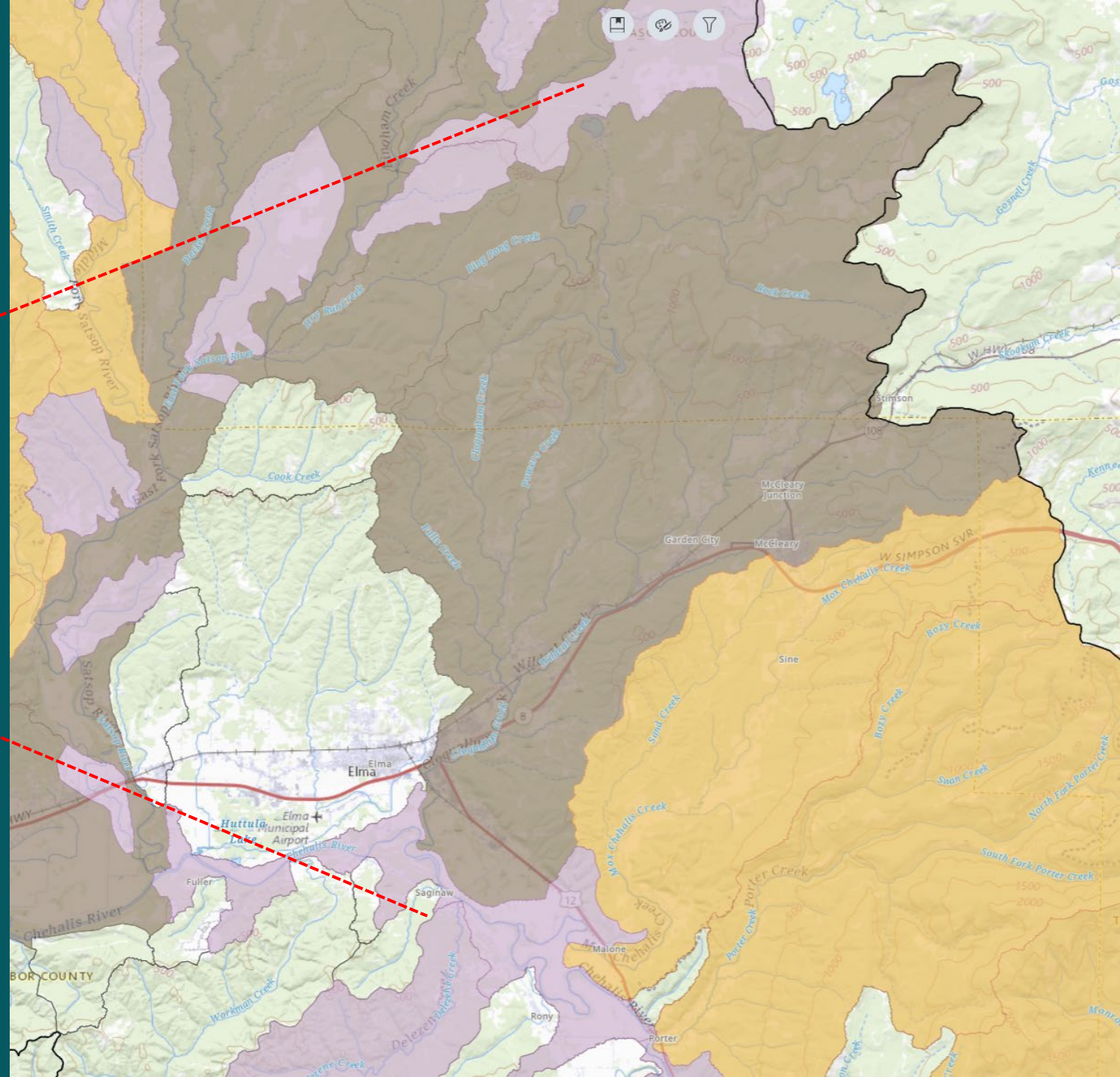
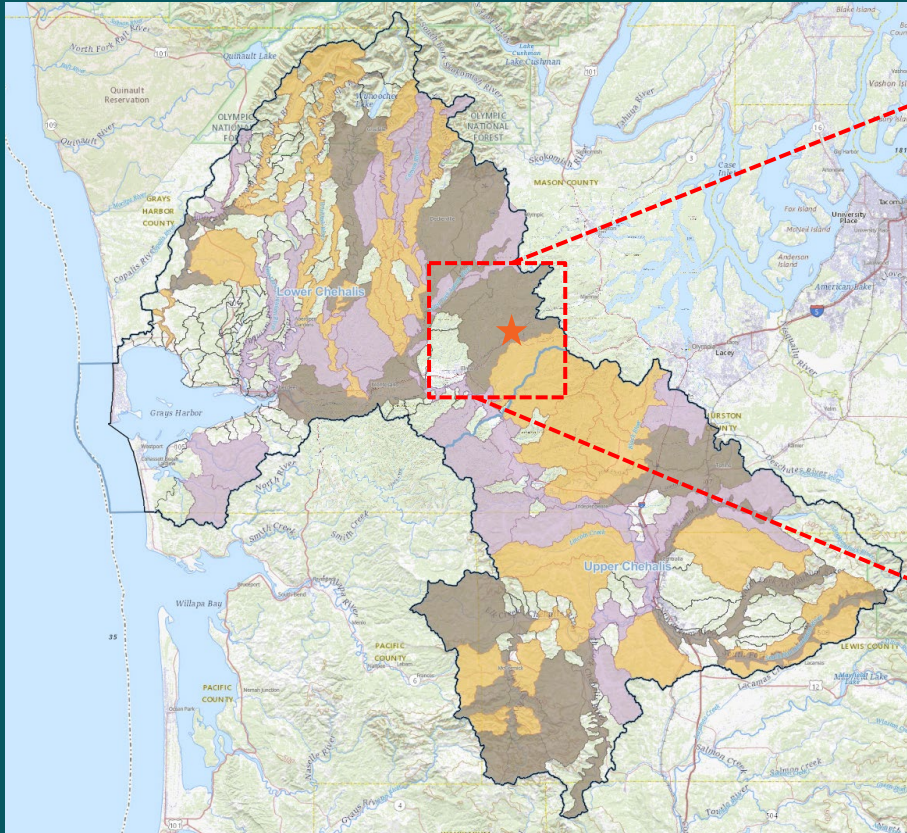
- Project: Cloquallum Knotweed Control
- Sponsor: Grays Harbor Conservation District
- Seeking: \$675,276

	As of 4/24/2024	With proposed project
Obligated ASRP implementation funding	\$5,912,269	\$6,587,545
Remaining 23-25 Unobligated	\$18,721,539	\$18,046,263

CONNECTION TO CHEHALIS BASIN STRATEGY



CLOQUALLUM LOCATION



CLOQUALLUM KNOTWEED CONTROL

- **Sponsor/Budget:** GHCD / \$675,276
- **Location:** Grays Harbor County; Cloquallum GSU (**Near-Term Priority Area**)
- **Landowner:** Mostly rural residential; some managed timber
- **Scope:** Surveying, landowner outreach, and control of noxious knotweed throughout the Cloquallum Basin over a five year period
- **Limiting Factors:** **Temperature, Key Habitat, Barriers**
- **ASRP Priority Actions for this location:** **Place Large Wood, Remove Fish Passage Barriers, Riparian Restoration (High), Floodplain, BDAs (medium)**
- **ASRP Focal Species(Focal; Indicator):** *Winter steelhead, fall Chinook, coho, chum*

PROJECT DESCRIPTION

- Stream and road knotweed surveys (yearly)
- Landowner Outreach + Education (ongoing)
- Development of knotweed database for Cloquallum
- Site treatment: 2-4 years of spraying
- Riparian Plantings



WHY WORRY ABOUT KNOTWEED?

Diverse native riparian vegetation



Replaced by

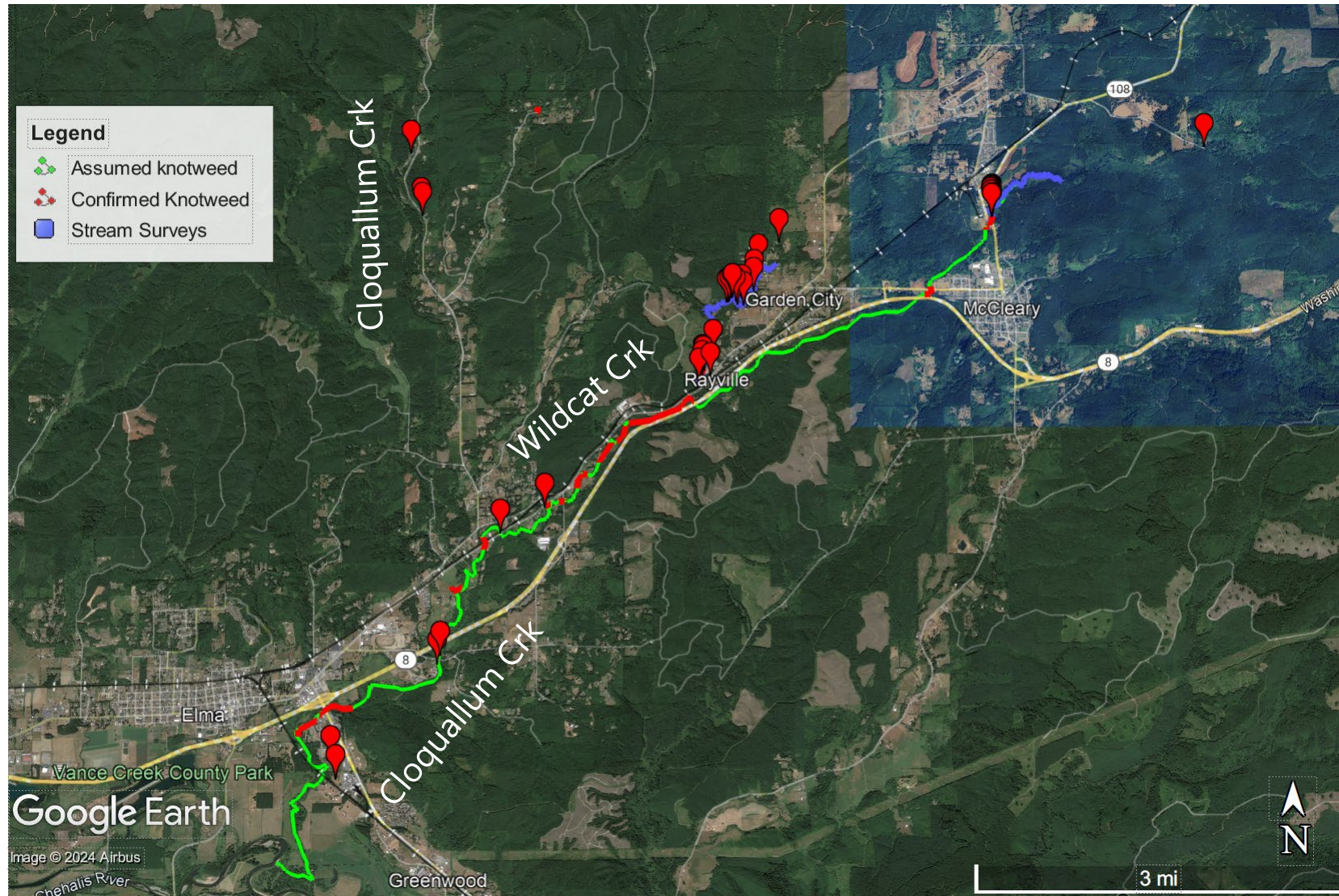
Invasive monoculture



- Increased erosion
- Higher temperature
- Less food available
- Less shelter for aquatic species

PROJECT DEVELOPMENT

- Surveys completed in 2023
- About 13 miles of assumed knotweed presence
- 9.5 miles rural residential
- 1.5 miles agricultural
- ~2 miles on WF Wildcat

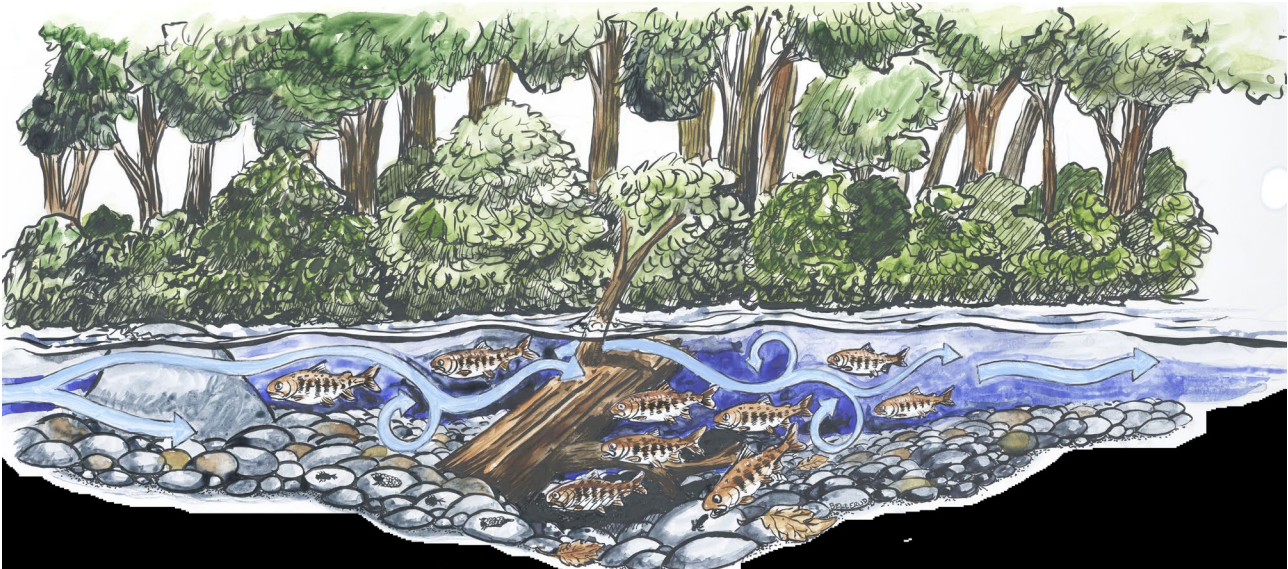


INTENDED PROJECT BENEFITS

ASRP limiting factors for Cloquallum

Project actions

	Temperature	Key Habitat	Habitat Diversity	Channel Stability
Knotweed Removal + Riparian Planting	Increase shading → Lower temperature	Increase wood in stream → Increase refugia (flow, predator, temperature)	Increase plant diversity → Increase food supply (and more)	Increase roots → Increase stability → Decrease erosion



PROJECT METRICS/OUTCOMES

Outcomes (Funded by this project):

- 63 acres of invasive treatment (multiple years)
- 50 acres of planting
- 63 acres of floodplain restoration
- About 250 to 300 landowners engaged



Knotweed on the Cloquallum

PROJECT IMPLEMENTATION TIMELINE

- Winter/spring 2024: Surveys, mapping, outreach
- Summers 2024-2028: Knotweed treatments and re-treatments
- Falls+winters 2024-2028: update knotweed maps, native plantings (starting 2027)
- Spring: Project end + final report

BUDGET

Funding context:

- GHCD leading watershed planning committee to develop Cloquallum prioritized strategy (ASRP funded)
- GHCD has submitted additional restoration projects in area for ASRP funding

Item	Cost
Outreach & Initial Mapping	\$13,400
Implementation: Knotweed Eradication	\$248,318
Implementation: Riparian Planting	\$261,178
Project Management & Implementation Oversight	\$152,381
Total Project cost	\$675,276

FEEDBACK

- Landowner training and GH Noxious Weed Board can continue control efforts after year 5
- Project actions could reduce cost of noxious weed control component of future projects in basin
- Currently a lot of landowner interest in knotweed removal in the Cloquallum
- Applying to ASRP due to longer grant period & higher grant amounts
 - Greater confidence in achieving project outcomes
- Project reviewers say: high likelihood of success

TASK: TAKE ACTION

- This project is asking for implementation funding of \$675,276
 - Because this amount is greater than \$500,000, the Board must take action to approve funding request



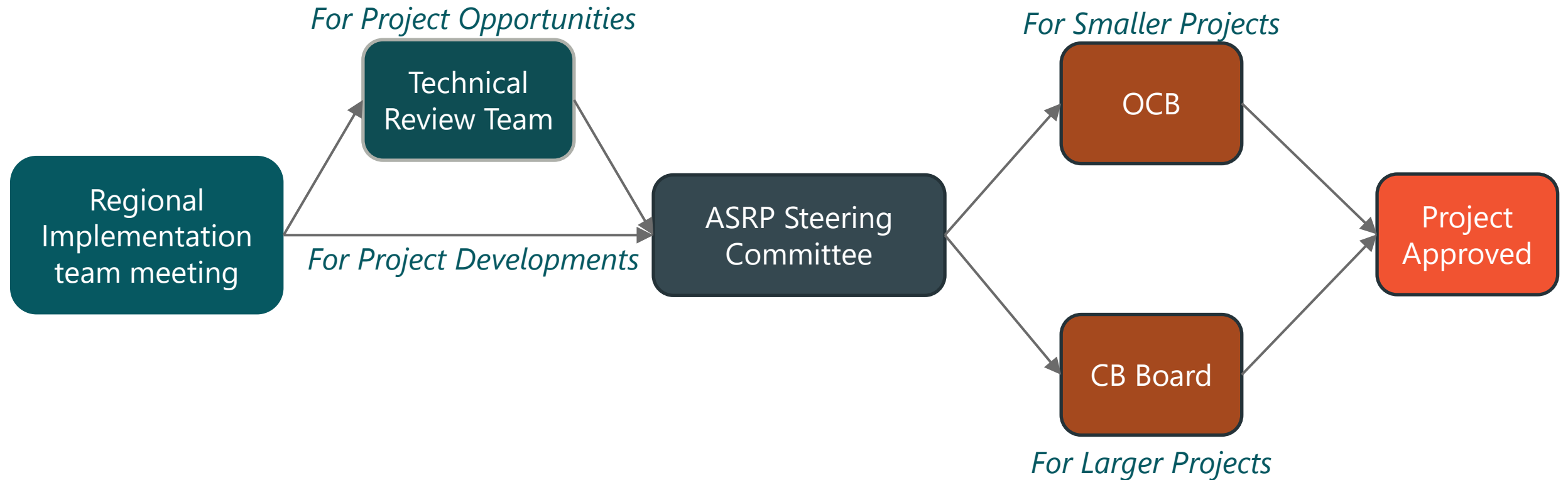
NF Newaukum Lawson Reach Design and Implementation

Drew Mealor, WDFW; Nikki Atkins, Lewis CD

4/4/24



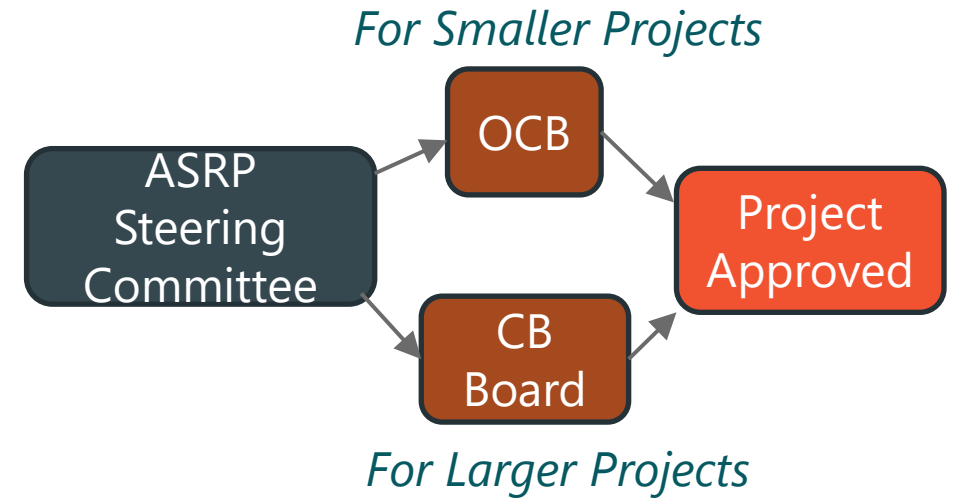
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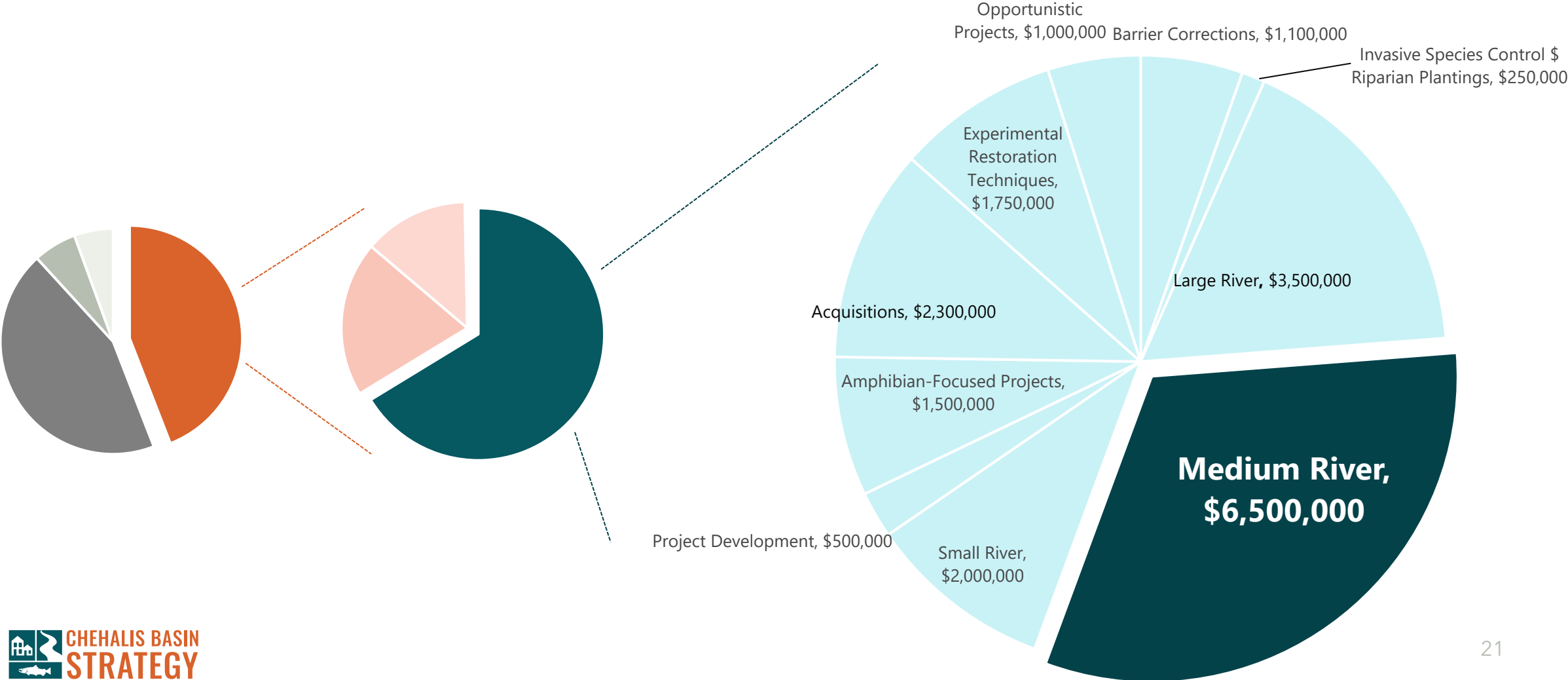


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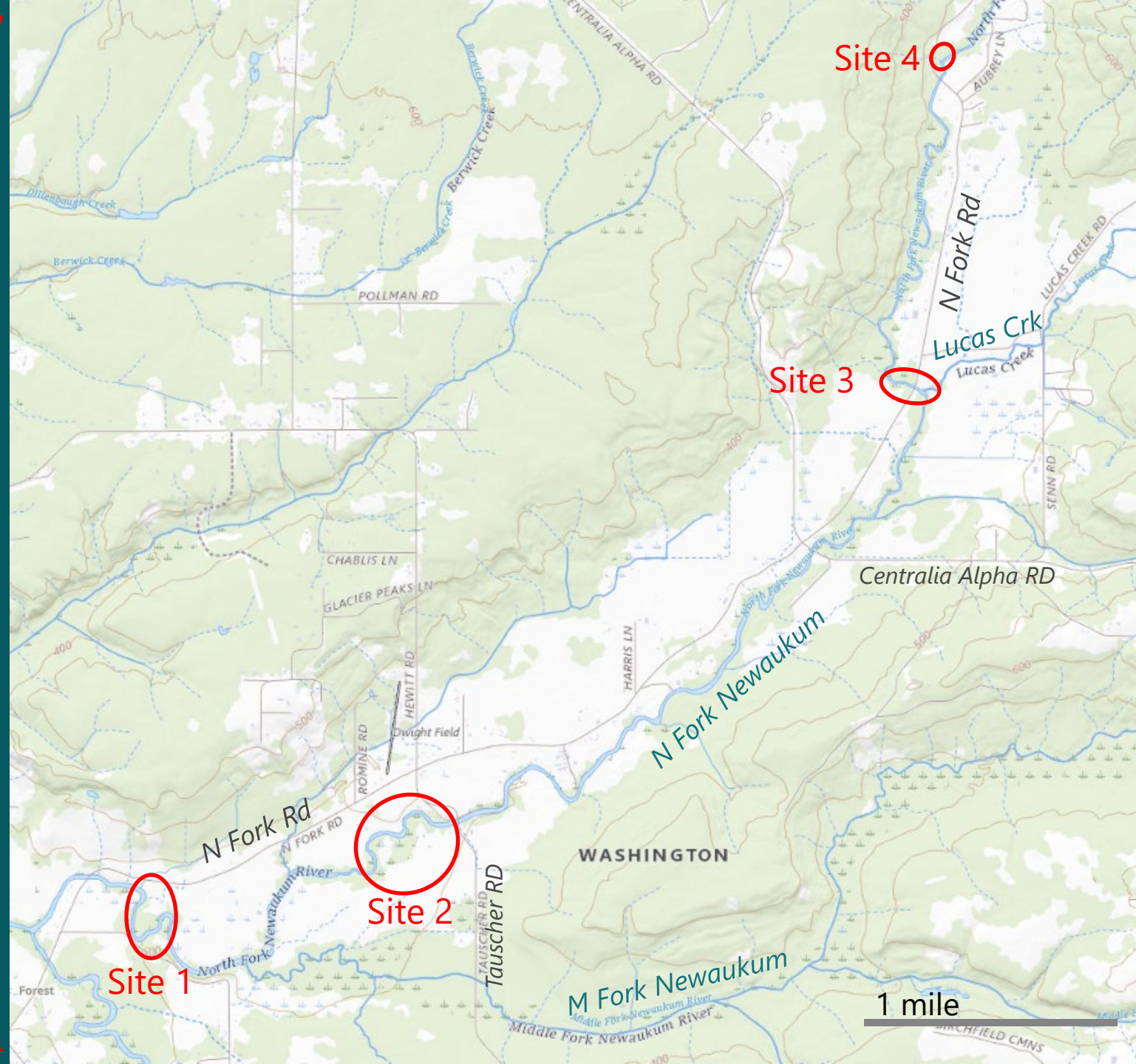
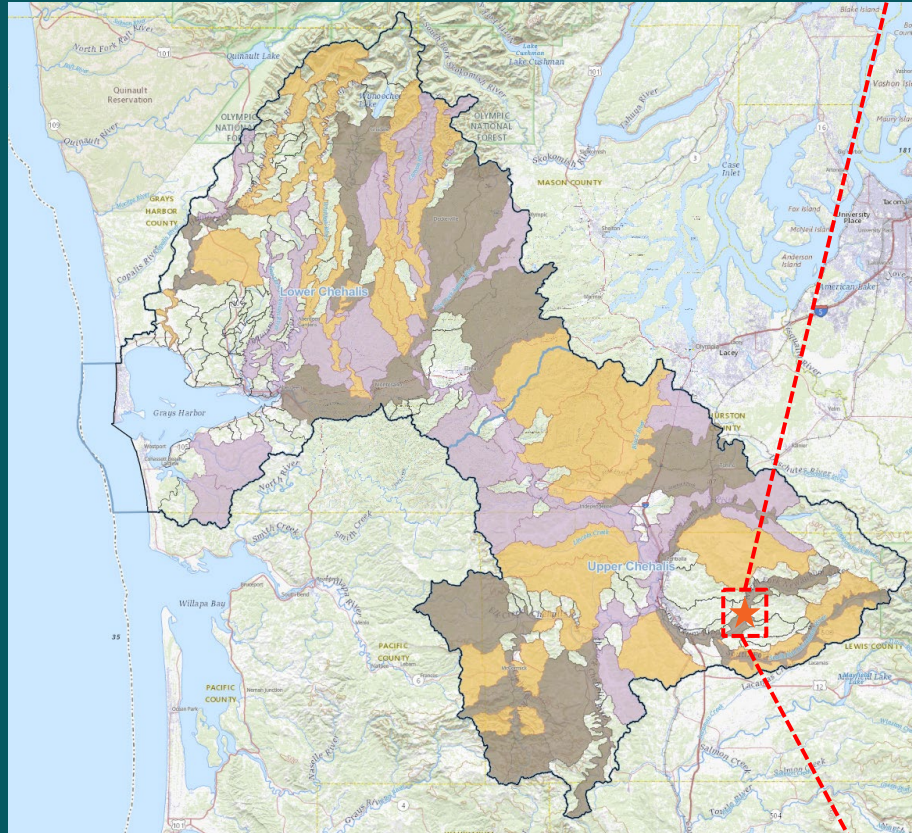
- Project: NF Newaukum Lawson Reach Design and Implementation
- Sponsor: Lewis Conservation District
- Seeking: \$3,528,739

	As of 4/24/2024	With proposed project
Obligated ASRP implementation funding	\$5,912,269	\$9,441,008
Remaining 23-25 Unobligated	\$18,721,539	\$15,192,800

CONNECTION TO CHEHALIS BASIN STRATEGY

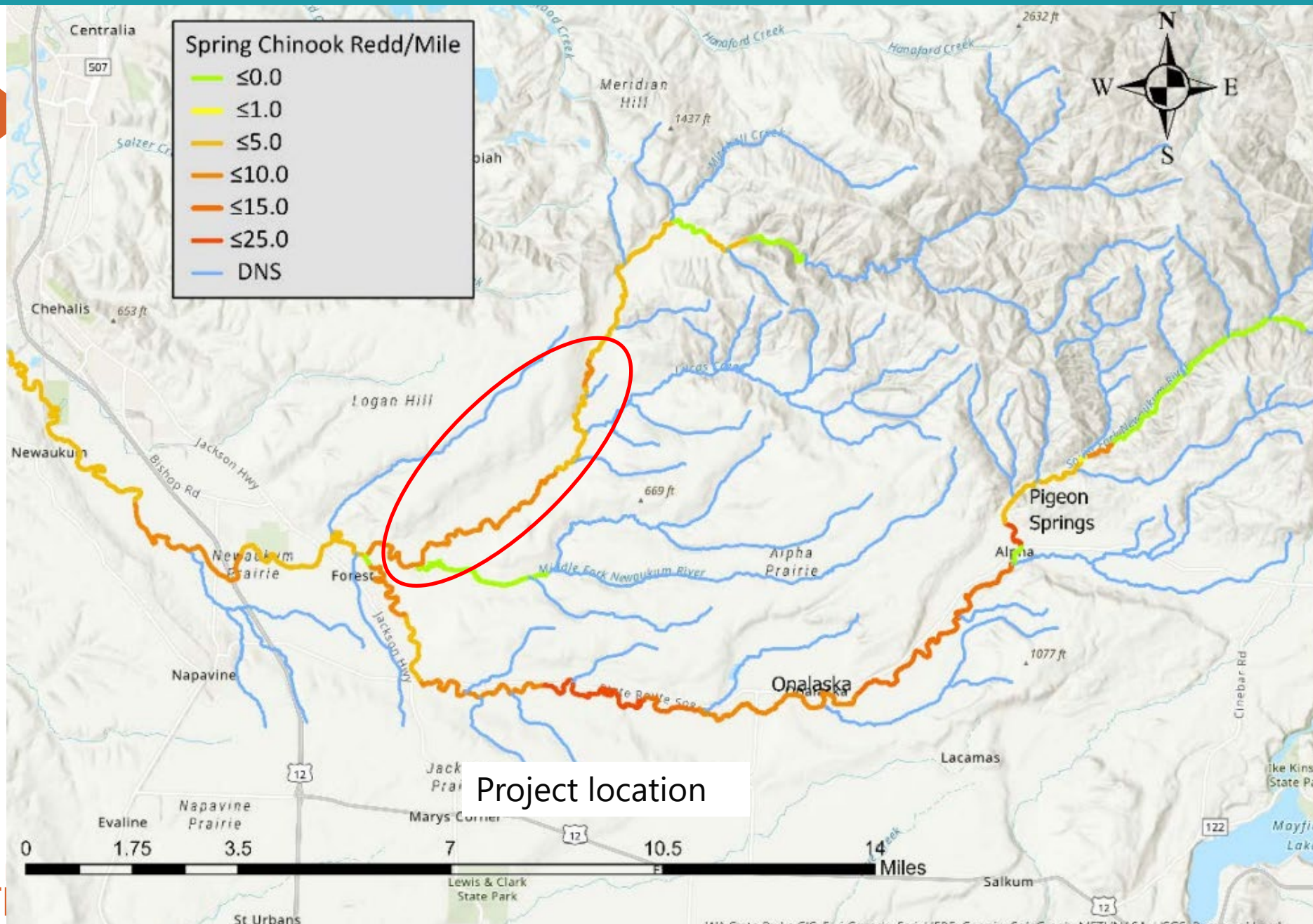


LAWSON REACH LOCATION

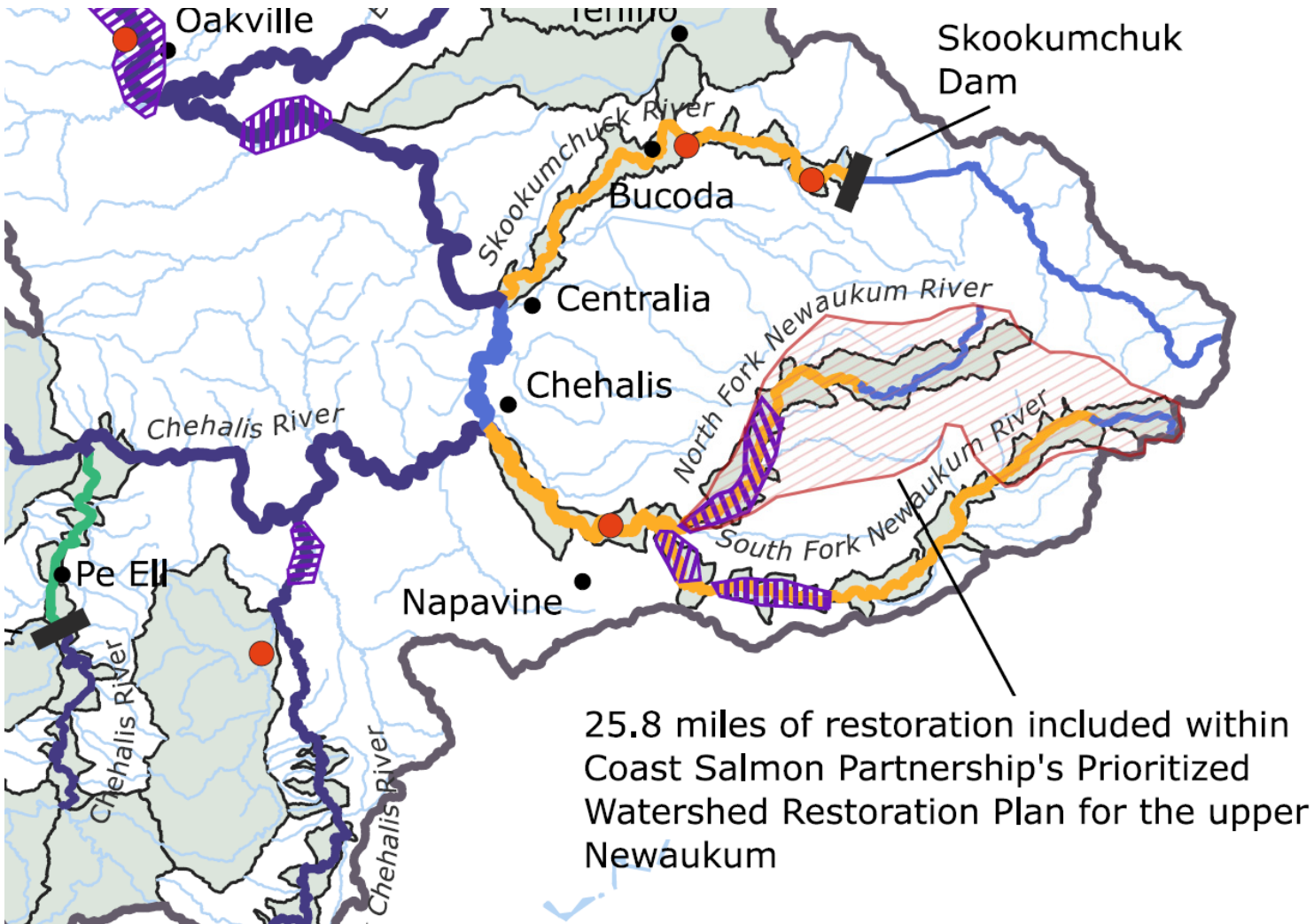


NF NEWAUKUM LAWSON REACH DESIGN AND IMPLEMENTATION

- **Sponsor/Budget:** Lewis CD / **\$3,528,739**
- **Landowner:** Multiple rural residential
- **Location:** NF Newaukum MS GSU (**Near-Term Priority Area**)
- **Scope:** Design and implementation of reach-scale restoration of 1.3 miles of NF Newaukum (non continuous), featuring Engineered Log Jams (ELJs), side channel creation, and riparian planting
- **Limiting Factors:** **Temperature, Key Habitat, Habitat Diversity**
- **ASRP Priority Actions for this location:** **Place Large Wood, Reconnect floodplain, Riparian Restoration (High), remove fish barriers (low)**
- **ASRP Focal Species(Focal; Indicator):** **Spring Chinook**, *Winter steelhead, fall Chinook, coho, lamprey, beaver*



SPRING CHINOOK CONTEXT



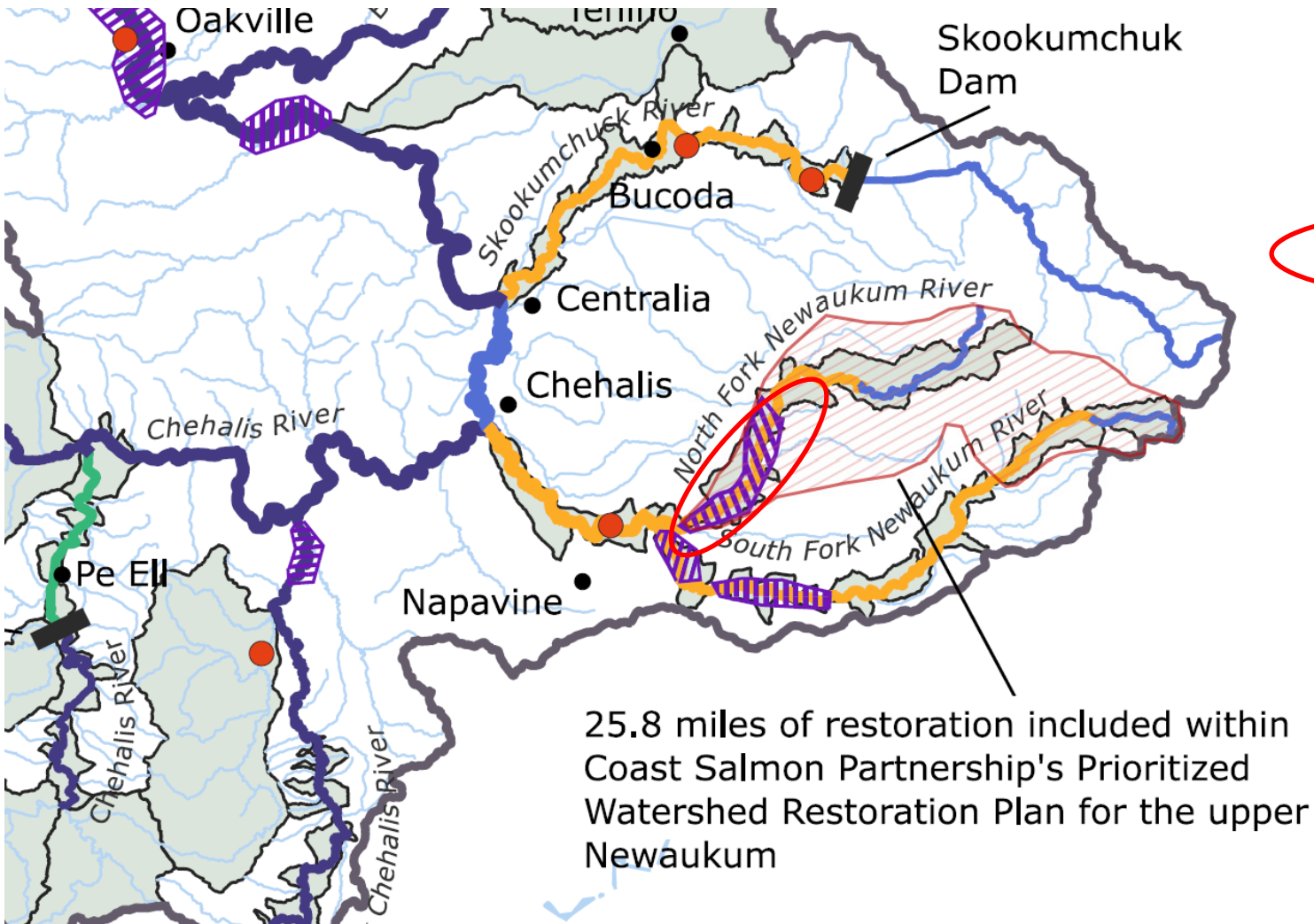
Restoration Plans and Actions

- ASRP Near-Term Focal Region
- ASRP-Funded Project Implementation
- ASRP-Funded Project Development
- Coast Salmon Partnership Prioritized Watershed Restoration

Relative Spring Chinook Contribution To Total Population

- None
- Low Contribution
- Medium Contribution
- High Contribution

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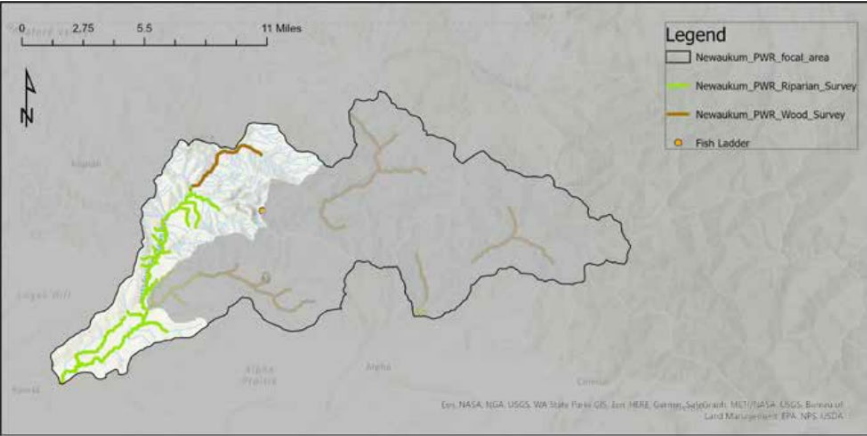
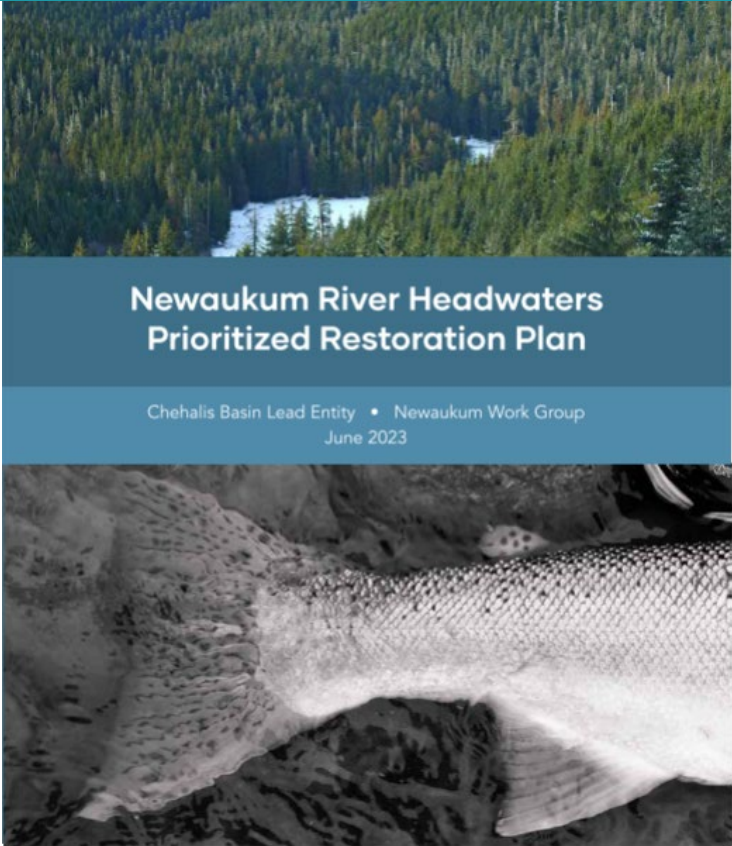
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LEAD ENTITY: NEWAUKUM RIVER HEADWATERS

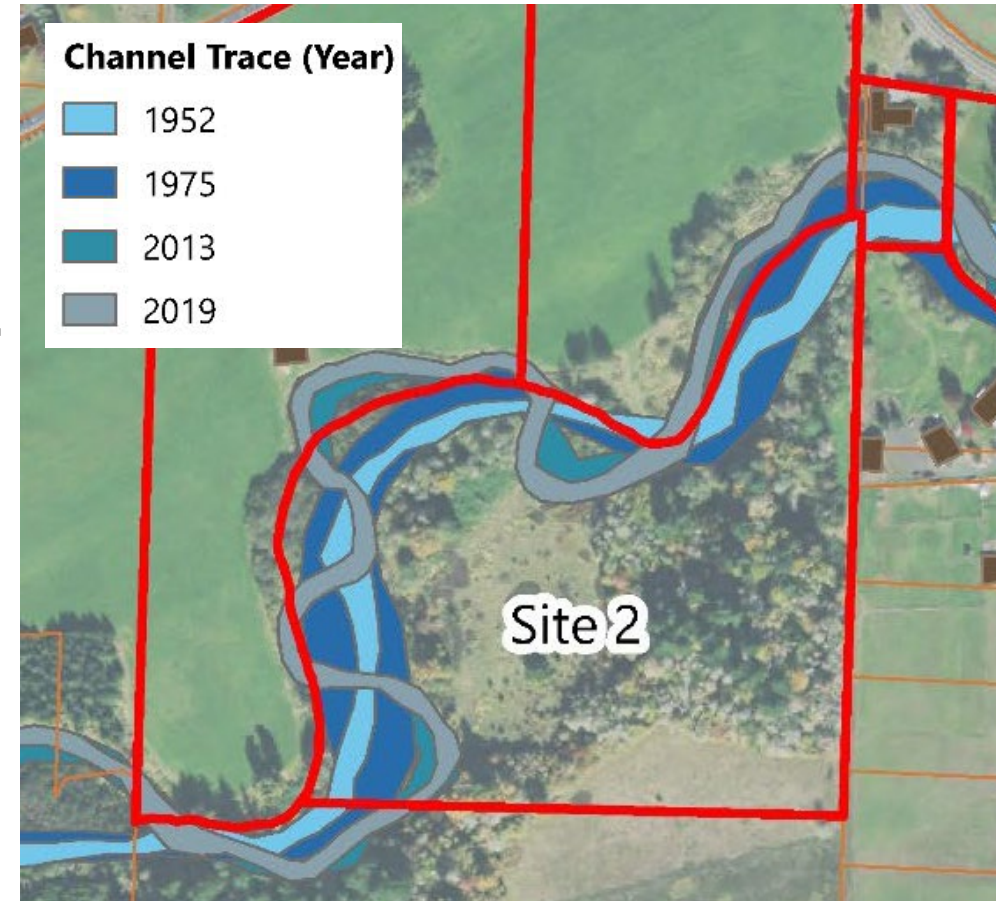
PRIORITIZED RESTORATION PLAN

Goal	Assessment Need	Objective
Establish a riparian buffer and initiate successional processes that will increase future stream shading, deliver wood, and filter nutrient runoff at the reach scale.	Assess 21.2 miles of stream channel for riparian restoration need/opportunity	Treat at least 10.5 miles of stream channel with riparian planting and invasive plant control methods as prescribed
Initiate or improve habitat forming processes and improve pool quality, floodplain connection, and gravel sorting at the reach scale	Assess 3.5 miles of stream channel for prime wood placement locations	Place wood over at least 1.7 miles of stream channel at densities per Fox and Bolton (2007)
Correct upstream passage for all species and all life stages of fish	Conduct alternatives analysis for correction of aged fish ladder	Restore upstream juvenile salmonid passage to 13.0 miles of stream
Total	24.7 miles	25.2 miles



NF NEWAUKUM LAWSON REACH: PROJECT OVERVIEW

- Opportunities and existing challenges identified through ASRP Project Development Grant, such as:
 - **High temperature**
 - **Lack of holding pools**
 - **Lack of side channels**
- (Completed) **Phase 1**: Concept designs developed for **four sites** with willing landowners
- **This grant would fund (both phases):**
 - **Phase 2**: Preliminary & Final Design for all four sites
 - **Phase 3**: Restoration implementation at all four sites:
 - Engineered log jam installation
 - Removing bank armoring
 - Reconnecting side channels
 - Riparian Planting + invasive control
 - Floodplain Wood installation

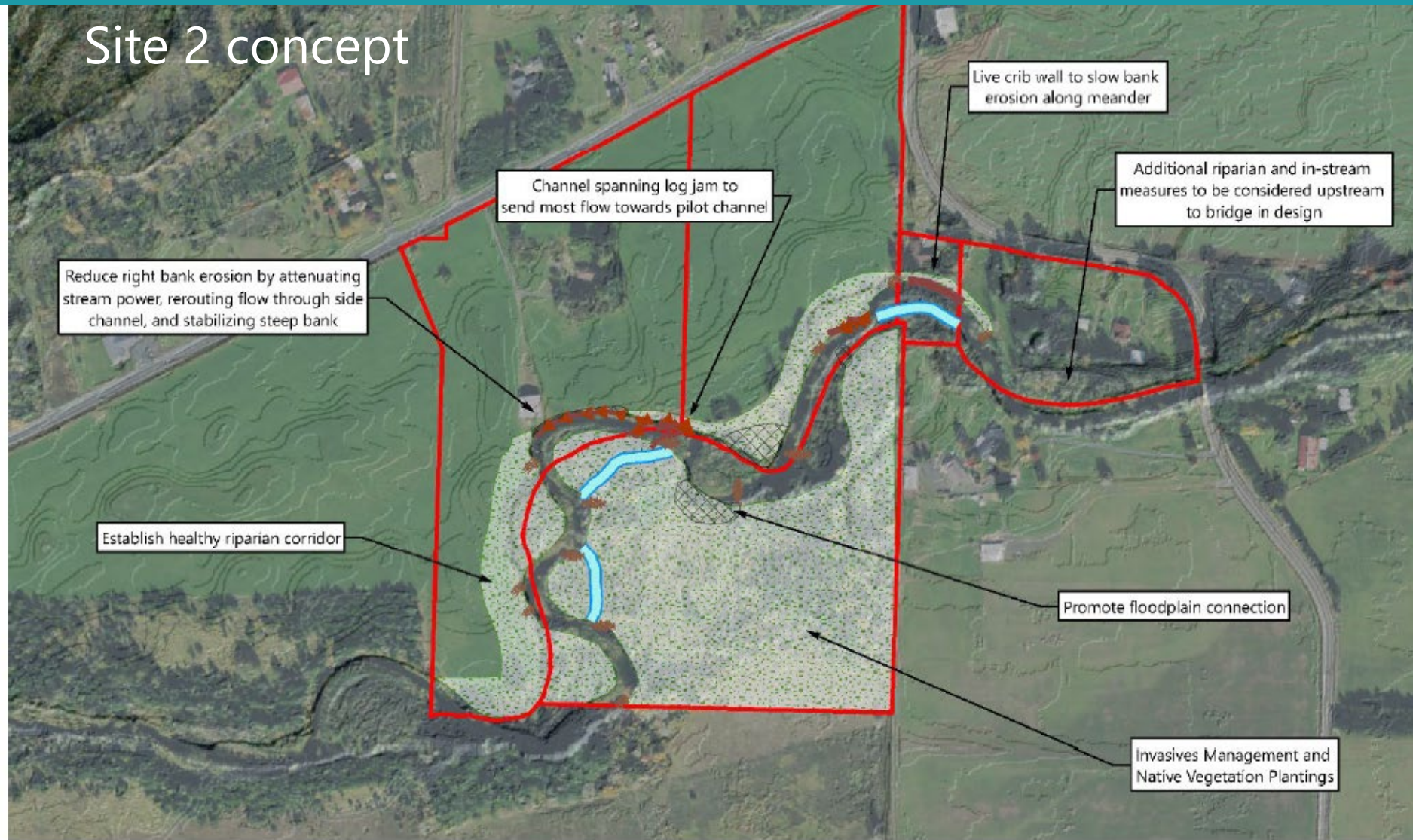


Example of site analysis funded through project development grant

ACTIONS/LIMITING FACTORS ADDRESSED

	Temperature			Habitat Diversity					Key Habitat			
	Water Temp	Groundwater Recharge	Deep Pools	In-channel Habitat Diversity	Off channel Habitat diversity	Flow Velocity	Wood recruitment	Food web	Off Channel Habitat quantity	Side Channels	High flow refugia	Cover
ELJs	↓	↑	↑	↑		↓		↑		↑	↑	↑
Remove bank armoring				↑		↓			↑		↑	
Winter Channels		↑			↑	↓			↑	↑	↑	
Plantings	↓	↑		↑	↑		↑	↑				↑
Invasive control	↓				↑							
Floodplain Wood					↑			↑			↑	

Site 2 concept



LEGEND:

- Restoration Site
- Bar Apex Engineered Log Jam
- Channel Spanning LWM Structure
- Bank Barb Engineered Log Jam
- Activate Channel
- Benching/Grading
- Invasives Management and Native Vegetation Plantings

TOTAL METRICS

Spatial Metric	Estimated Quantity
Acres of Floodplain/Riparian Zone Restored	30
Miles of Riparian Streambank Restored	1.25
Miles of Instream Habitat Treated	1.25
Number of Wood Structures Placed In-Channel	24
Number of Large Wood Pieces Placed In-Channel ¹	198
Linear Feet of Side Channel or Backwater Created	1,375

ASRP NF Newaukum
Goal:
15 miles of
"restoration"

Lead Entity NF
Newaukum Plan Goal:
10.5 miles of riparian
planting

PROJECT TIMELINE

- **Phase 1:**
 - Concept Design 2024 (Completed)
- **Phase 2:**
 - Design complete in early 2025
 - Permits complete in early 2025
- **Phase 3:**
 - Construction in 2025 and 2026
 - Riparian Planting following construction 2025 & 2026
 - Ongoing Maintenance- through 2030



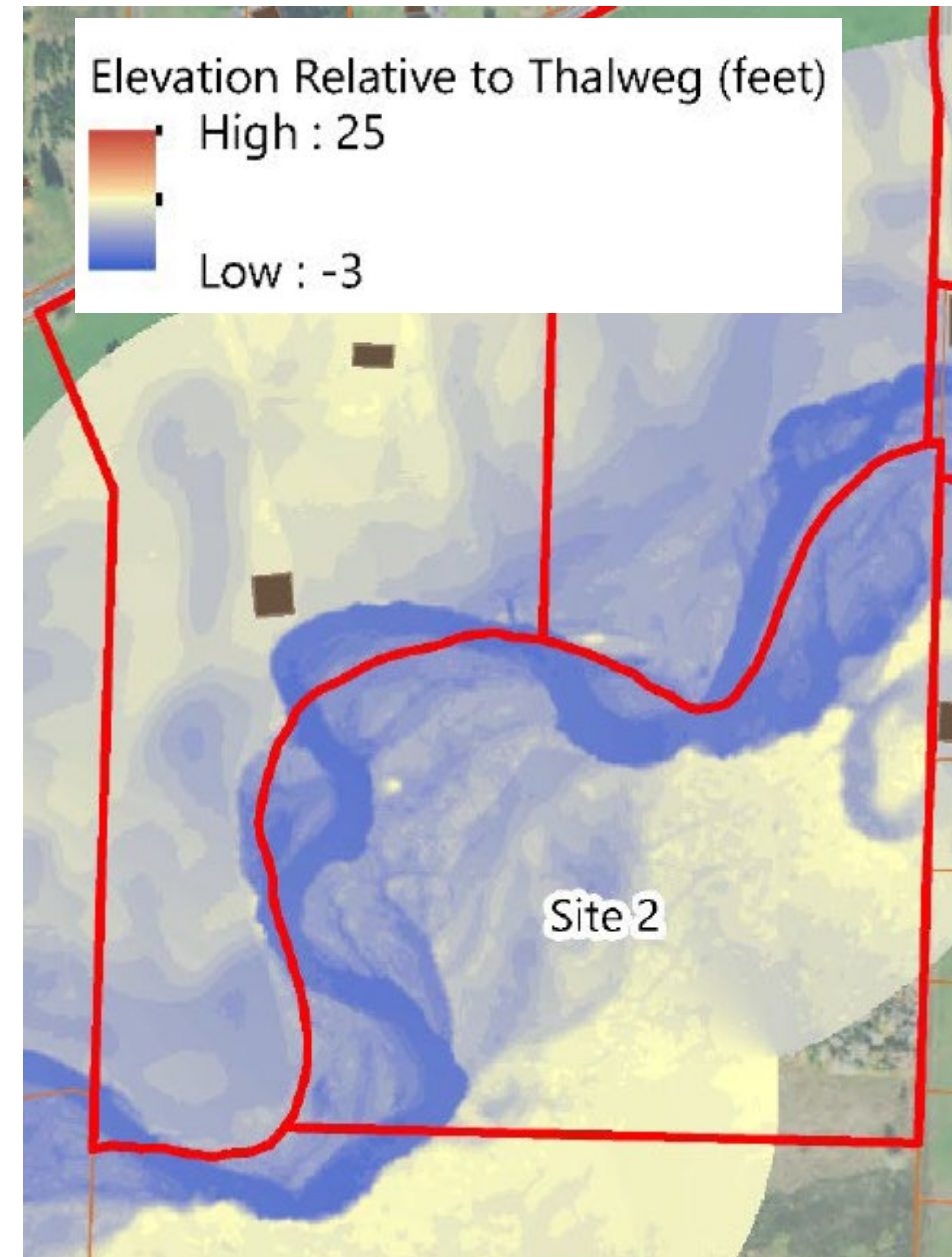
PROJECT BUDGET

- Project developed through \$40,000 ASRP grant and Washington State Conservation Commission operational funding in 2024 (*complete*)
- Lawson Reach is also part of the Chehalis Lead Entity's prioritized watershed plan for the upper Newaukum- currently seeking federal funding for other projects
- Likely to generate additional ASRP project opportunities in Newaukum and increase participation in the Strategy

Item	Cost
Construction	\$1,807,562
Design & Permitting	\$496,979
Management	\$486,277
Contingency	\$542,268
Tax + Indirect	\$195,653
Total	\$3,528,739

FEEDBACK

- Technical reviewers say:
 - Given landowner constraints and non-contiguous sites, project design features best practices for habitat restoration. This could serve as a demonstration project and eventually overcome landowner hesitancy
 - Project could create more cool-water holding pools, a locally-critical limiting factor for spring chinook in warm summer months



TASK: PROJECT DISCUSSION

- This project is asking for **\$3,528,739** for phases 2 (design) & 3 (construction) from ASRP Implementation Funding
 - Because this amount is greater than \$500,000, the Board must take action to approve funding request
- The Board will take action on this funding request at the **June 6, 2024 Board meeting**
- Please send any follow-up questions to Drew Mealor (Andrew.Mealor@dfw.wa.gov)