Lower Satsop RM 0-2 Phase 2 Restoration: Construction

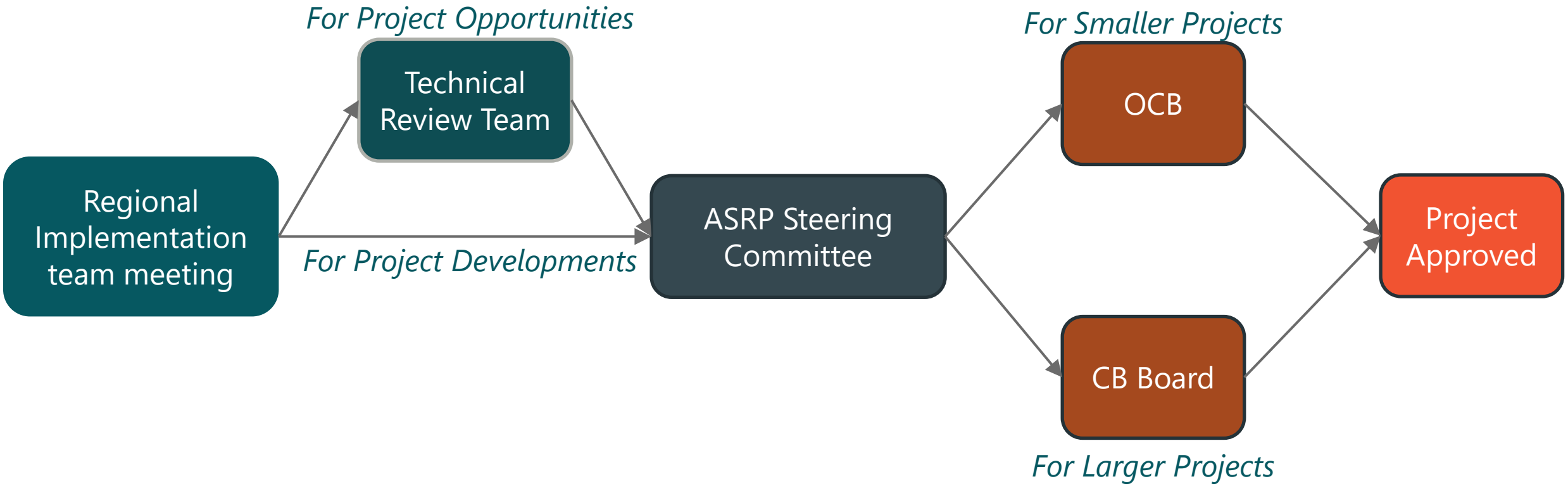
Drew Mealor, WDFW; Anthony Waldrop GHCD

11/2/23

CHEHALIS BASIN STRATEGY

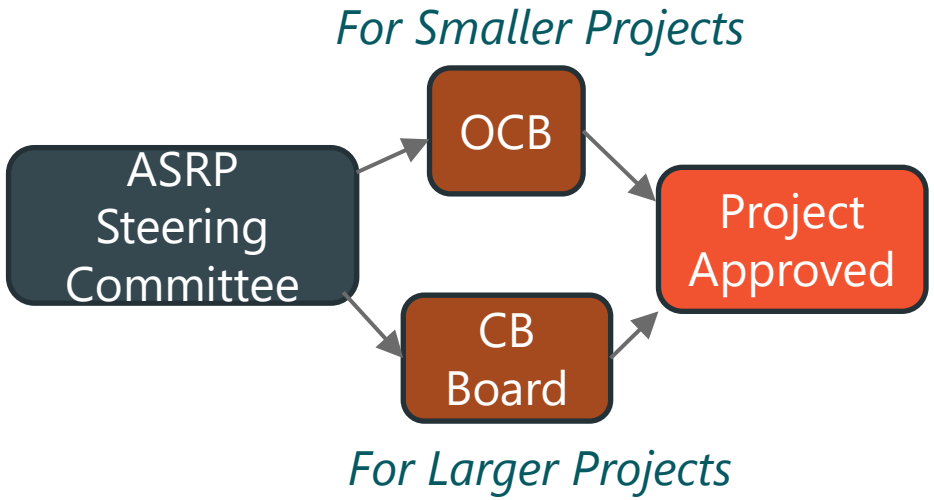
DEPARTMENT OF ECOLOGY State of Washington
OFFICE OF CHEHALIS BASIN

HOW DO WE APPROVE PROJECTS?



CHEHALIS BASIN STRATEGY

ASRP PROJECT FUNDING APPROVAL



Project approval process:

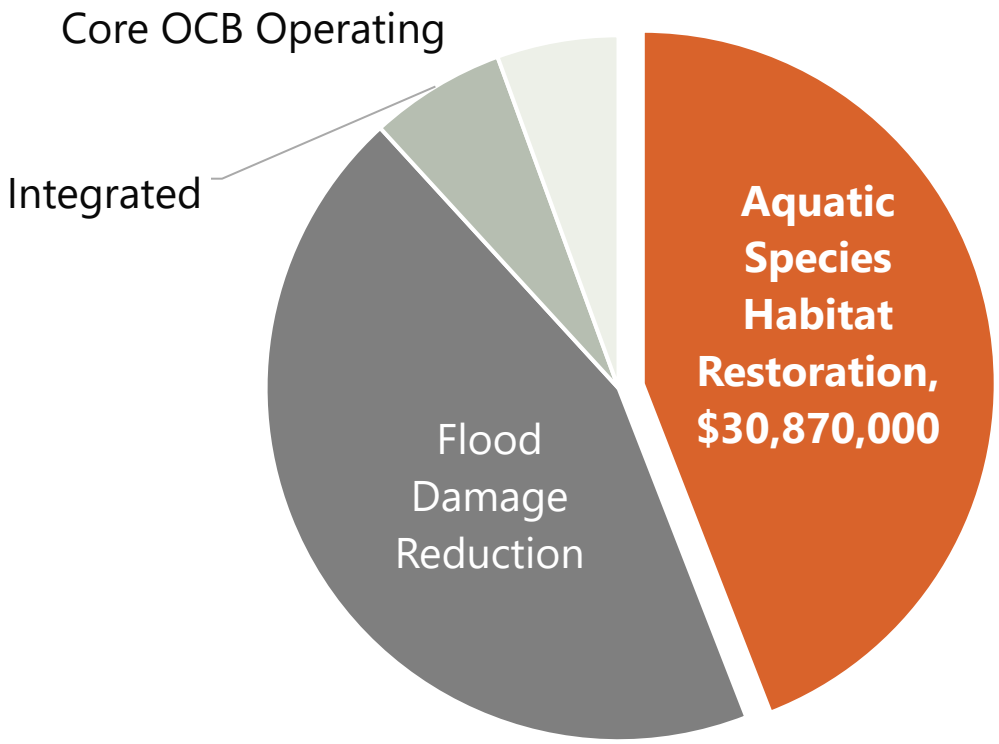
- Board approval needed for project funding requests exceeding $500,000
- Two-part approval process
  - ***First meeting – project introduction***
  - Second meeting – decision/vote to approve (or not approve) project for funding

ASRP BUDGET STATUS

- Lower Satsop RM 0-2 Phase 2 Restoration, Construction
- Sponsor: Grays Harbor Conservation District
- Seeking: $3,000,000 (of a total $9,301,084)

	As of 11/2/2023	With proposed project
Funding Amount (implementation)	$0	$3,000,000
Remaining 23-25 Unobligated	$20,400,000	$20,400,000
Remaining 21-23 Unobligated (Implementation)	$4,332,107	$1,332,107

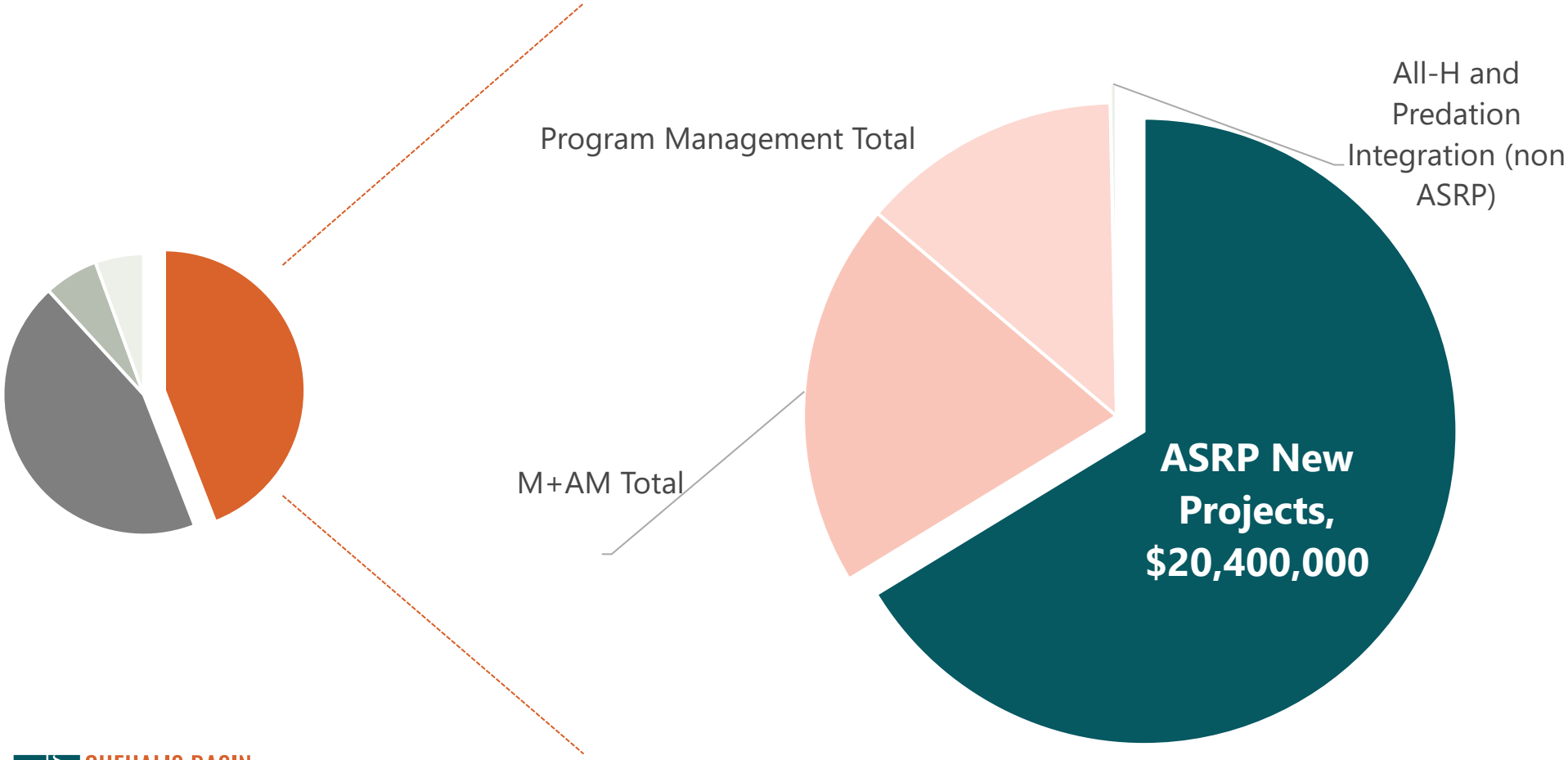
CONNECTION TO CHEHALIS BASIN STRATEGY



2023-2025 Chehalis Basin Strategy Budget

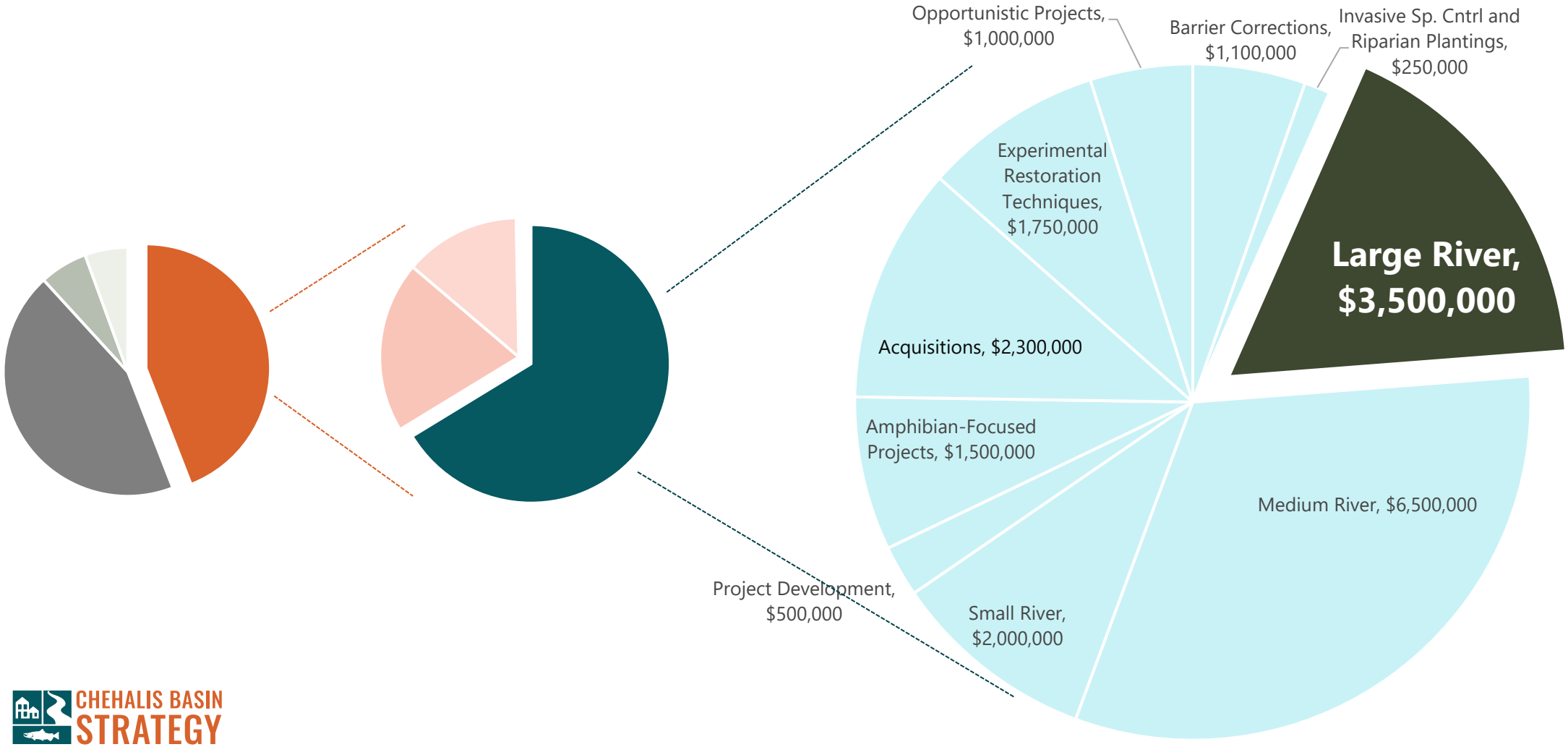
CHEHALIS BASIN STRATEGY

CONNECTION TO CHEHALIS BASIN STRATEGY



2023-2025 Aquatic Species Habitat Budget

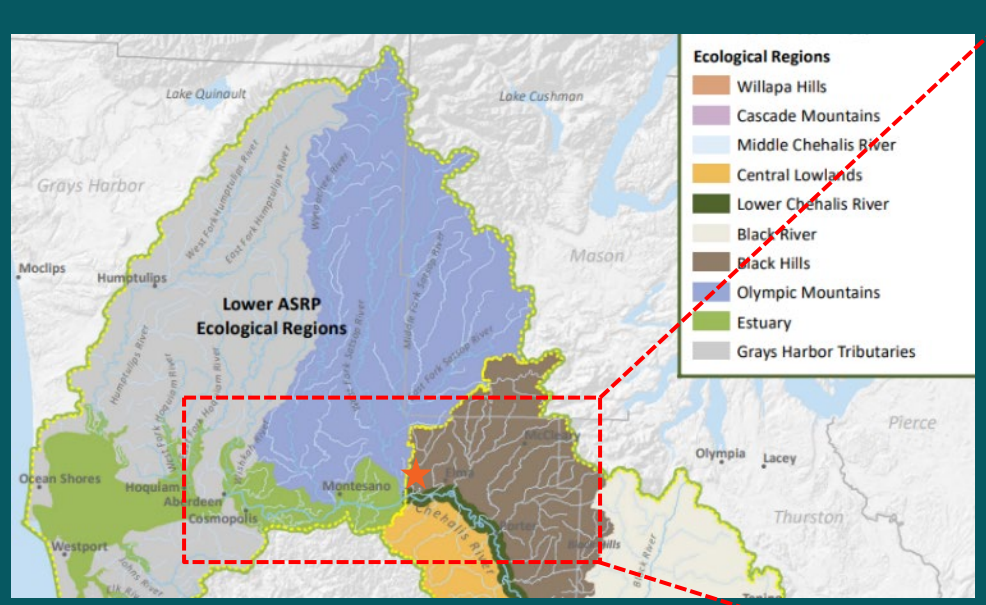
CONNECTION TO CHEHALIS BASIN STRATEGY

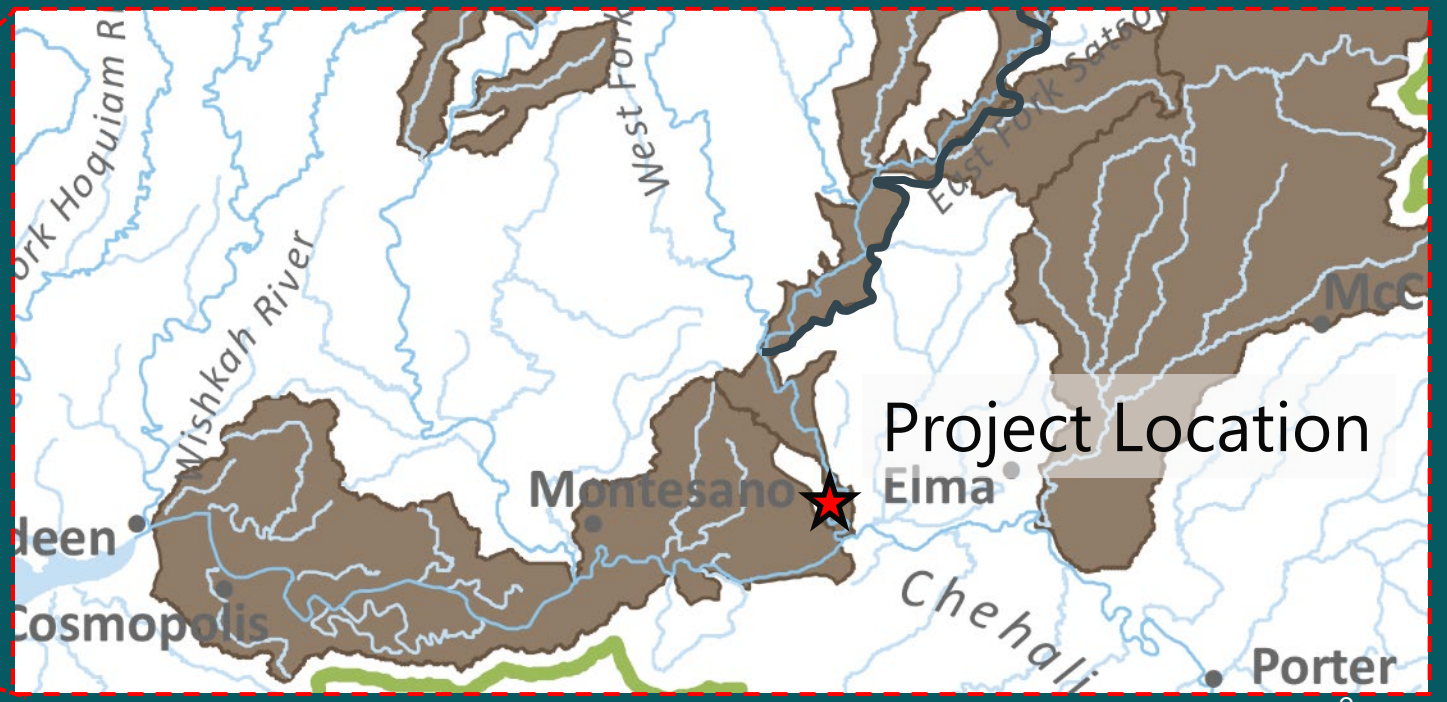


CHEHALIS BASIN STRATEGY

2023-2025 ASRP Project Implementation Budget

SATSOP RM 0-2 PHASE 2 RESTORATION: CONSTRUCTION





CHEHALIS BASIN STRATEGY

SATSOP RM 0-2 PHASE 2: CONSTRUCTION

- **Sponsor/Budget**: GHCD **/ $3,000,000 ASRP + $6,276,084 NCRF ($9,301,084 total)**
- **Location:** Grays Harbor County; Lower Satsop MS GSU (**Near-Term Priority Area**)
- **Landowner:** Multiple Private Agricultural; WDFW; Port of Grays Harbor
- **Scope**: Implement around two miles of restoration, including **large wood, riparian plantings, side channel development**
- **ASRP Priority Limitations Addressed By Project: Key Habitat, Temperature, Habitat Diversity**, Channel Stability, Sediment Load
- **ASRP Priority Actions Addressed by Project: Place Large Wood (High), Riparian restoration (high),** reconnect/restore floodplain (medium)
- **Species Present:** Coho, Steelhead, Fall Chinook, Chum

	Restoration Actions								
Geospatial Unit	Place Large Wood	Remove Fish Barriers	Reconnect/ Restore Floodplain	Riparian Restoration	Beaver Ponds/ BDAs	Wetland Restoration	Acres of OSF* Habitat Protection/ Restoration	Priority Species or Habitat Focus	Limiting Factors From Highest Priority to Lowest
Lower Satsop MS GSU	●		●	●				(H) High Priority Core Habitats (R) Early Riparian Restoration	**Key Habitat, Temperature, Habitat Diversity,** Channel Length, Channel Stability, Predation, Flow, Sediment Load

CHEHALIS BASIN STRATEGY

PROJECT DESCRIPTION

- Synopsis
  - Reach Scale restoration of **2 miles along the Satsop River** including engineered log jams (ELJs), riparian restoration, and invasives management.
  - ELJ complexes:
    - Key habitat features for salmon
    - Increase habitat diversity
    - Increase side channel flow
    - Increase channel stability along rapidly eroding banks
    - Capture sediment
  - Riparian plantings and invasive management:
    - Increase cover to reduce temperature
    - Increase channel stability
    - Increase habitat diversity
    - Increase long term habitat diversity by providing large wood material inputs.

INTENDED BENEFITS

- Long term outcomes:
  - Increased floodplain connectivity
  - Reduced channel migration to allow for riparian forests to mature
  - Substantial increase in stable large wood throughout the reach
  - Multiple channels
  - Increased Shade

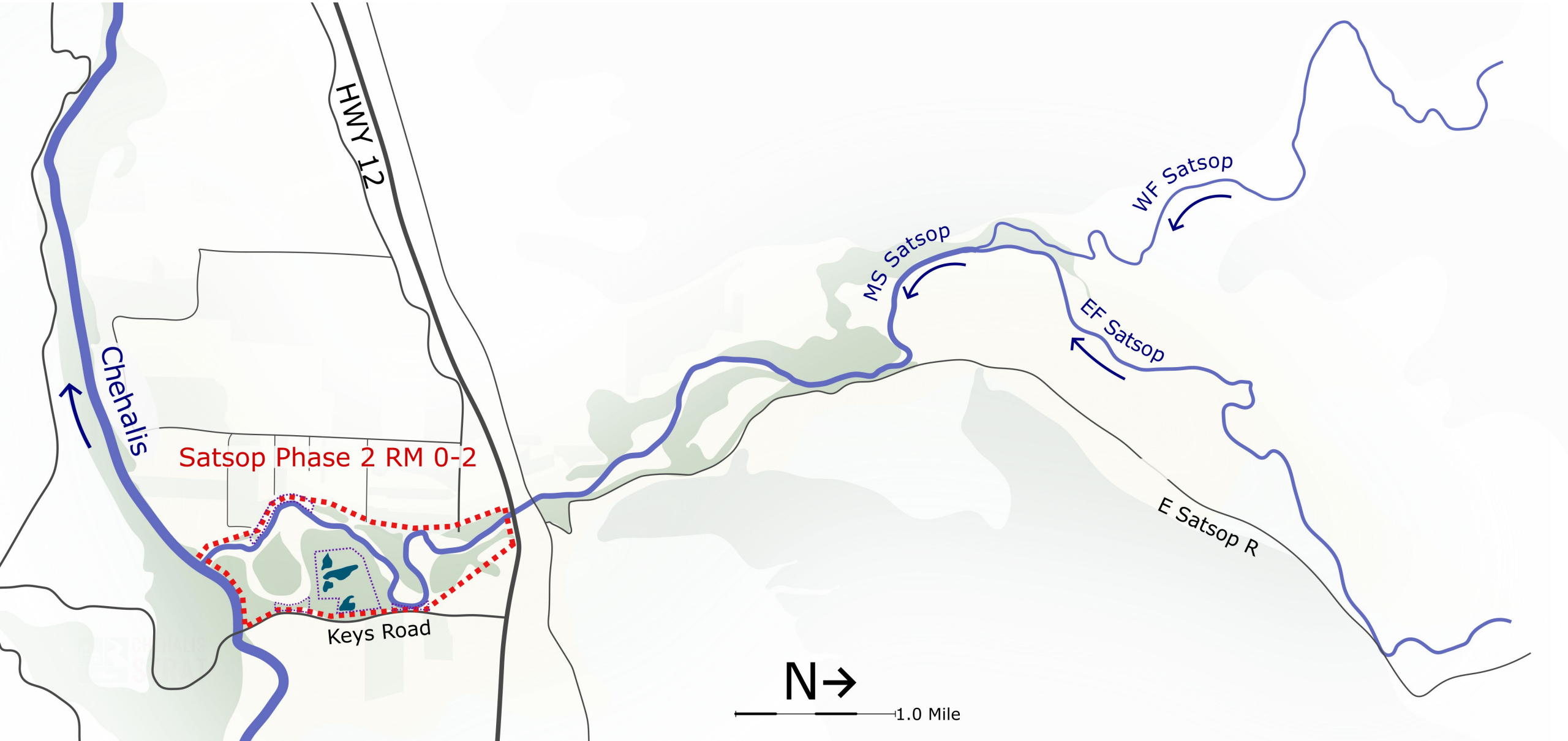
- Near(er) Term Outcomes
  - Substantial increases to quantity and quality of fish habitat due to increased pools, side channels, large wood cover, and food web enhancement.
  - Bank erosion reduction with ELJs and riparian plantings reduces risk to farmland, homes, and downstream infrastructure from rapid channel migration

CHEHALIS BASIN STRATEGY

PROJECT METRICS/OUTCOMES

- Outcomes (Funded by this project):
  - **2 miles of large river restoration**
  - **46 ELJs**
  - **374 acres of riparian enhancement** including conifer underplanting and invasive species treatment
  - **248 acres of riparian buffer establishment** including dense riparian plantings and invasive species treatment

RELATED WORK AND PREVIOUS FUNDING



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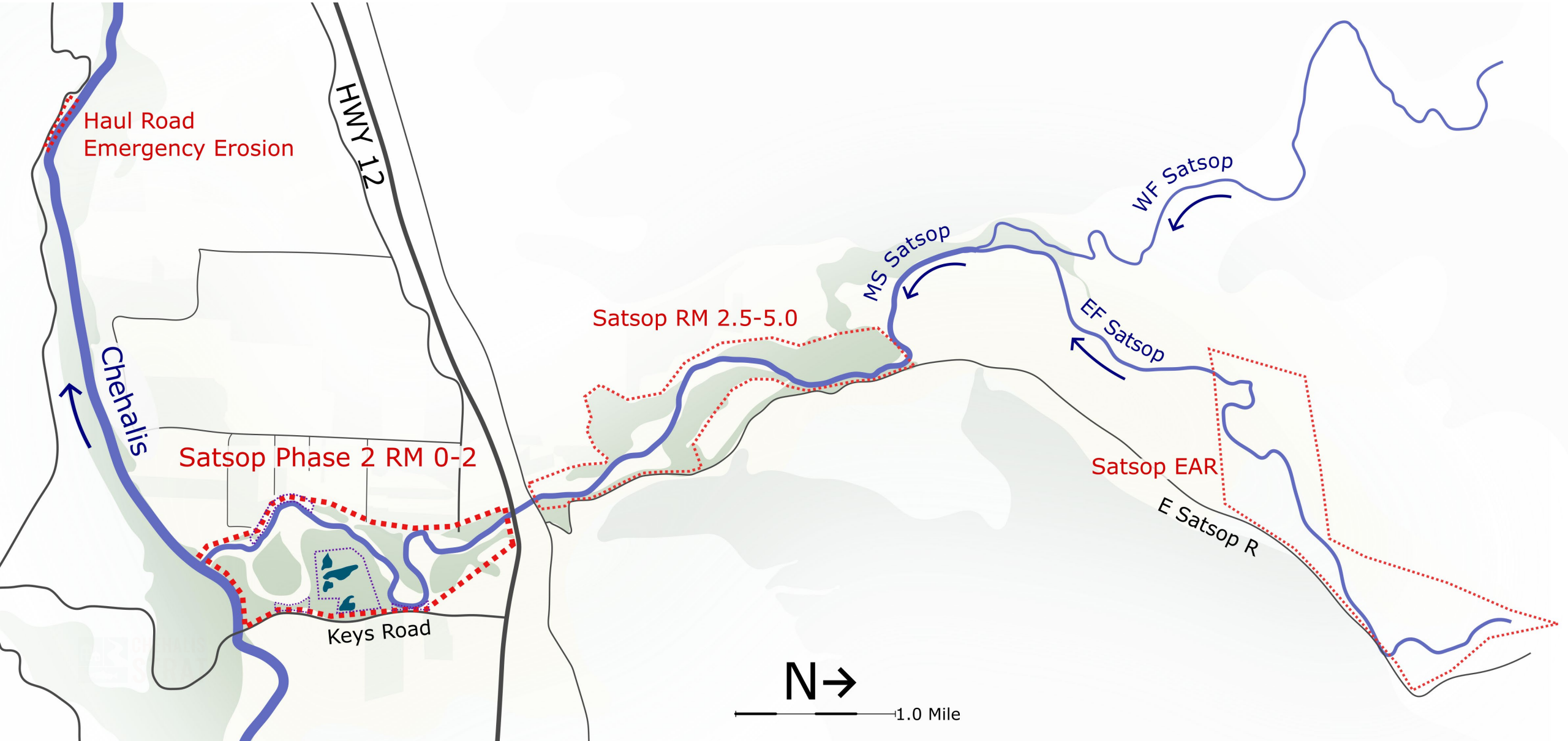

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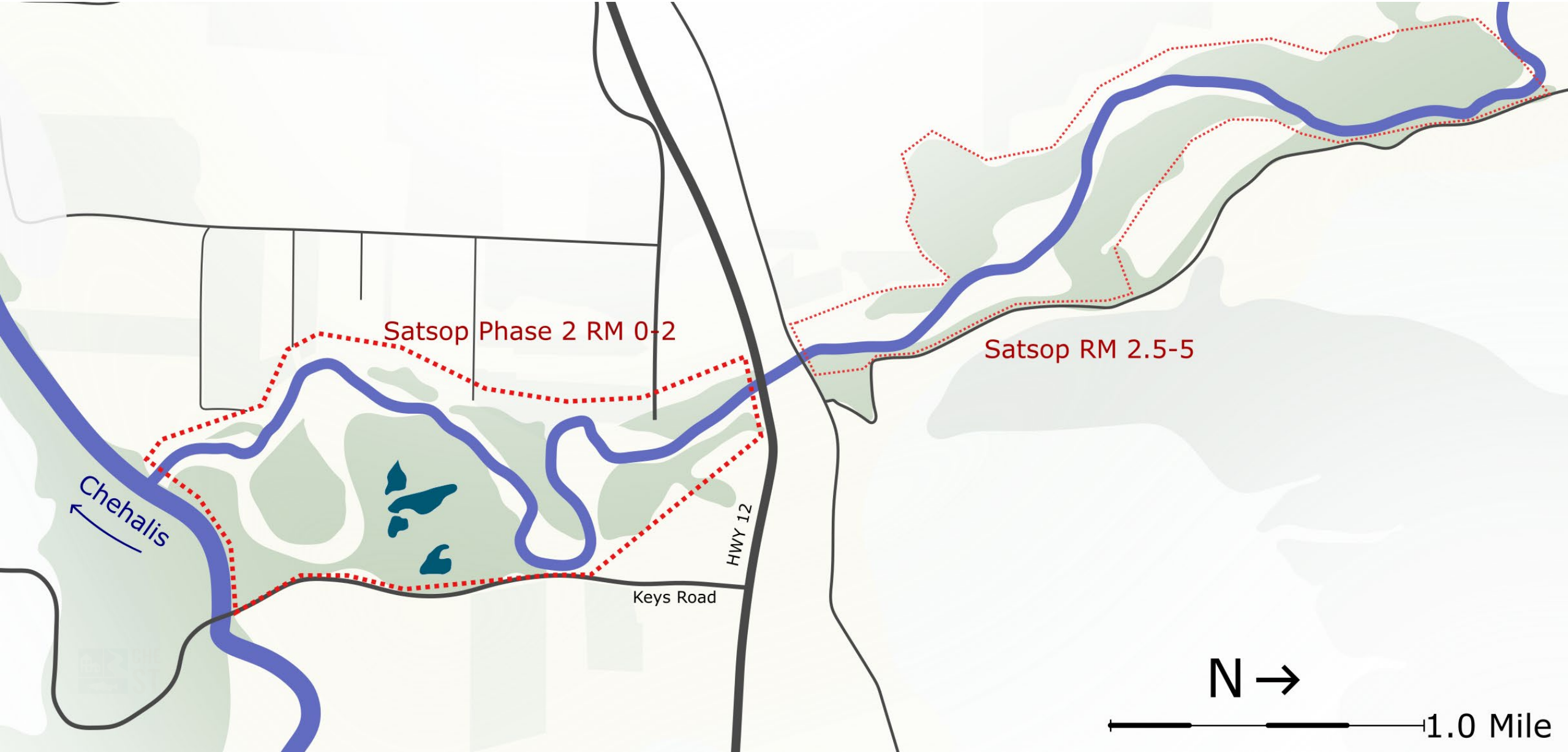

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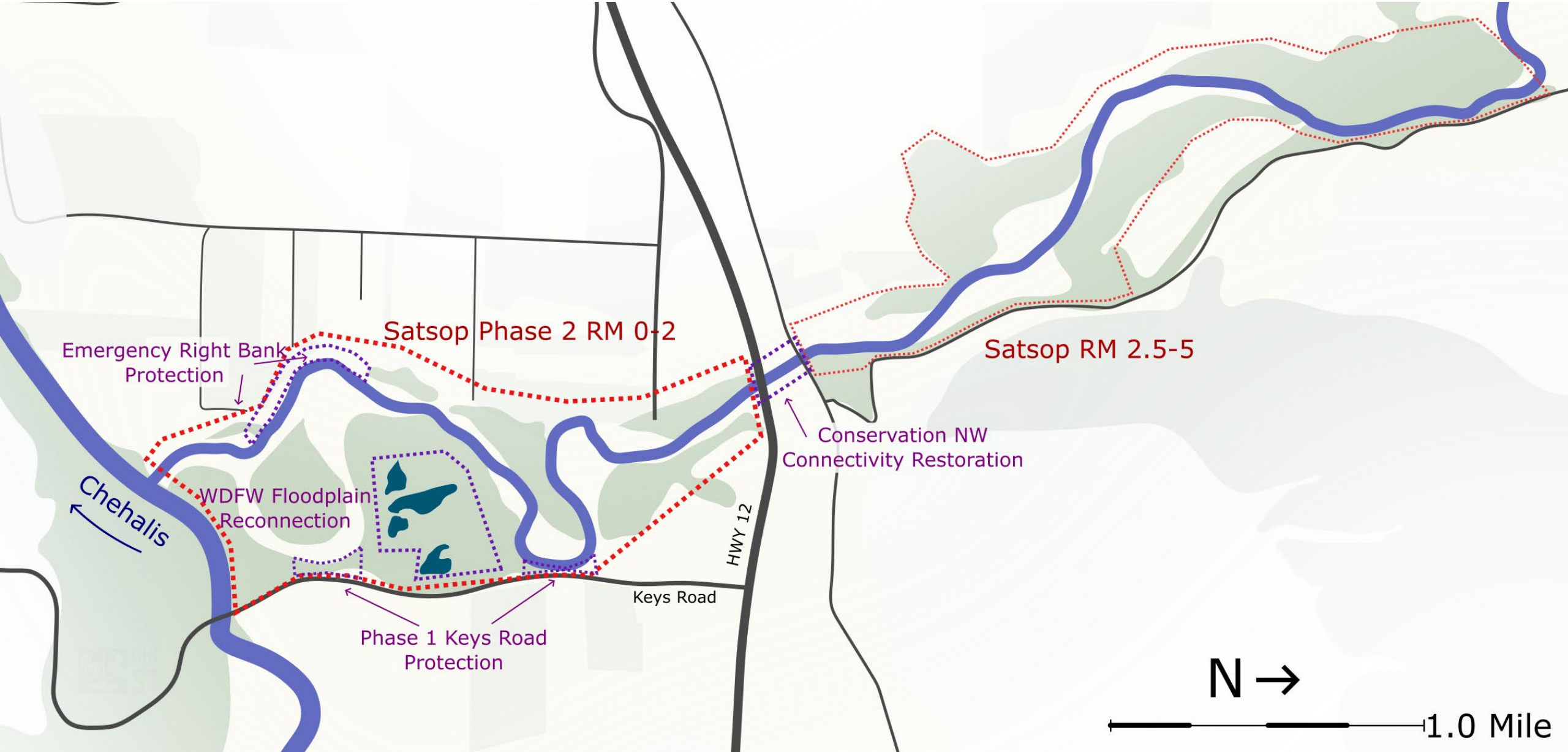
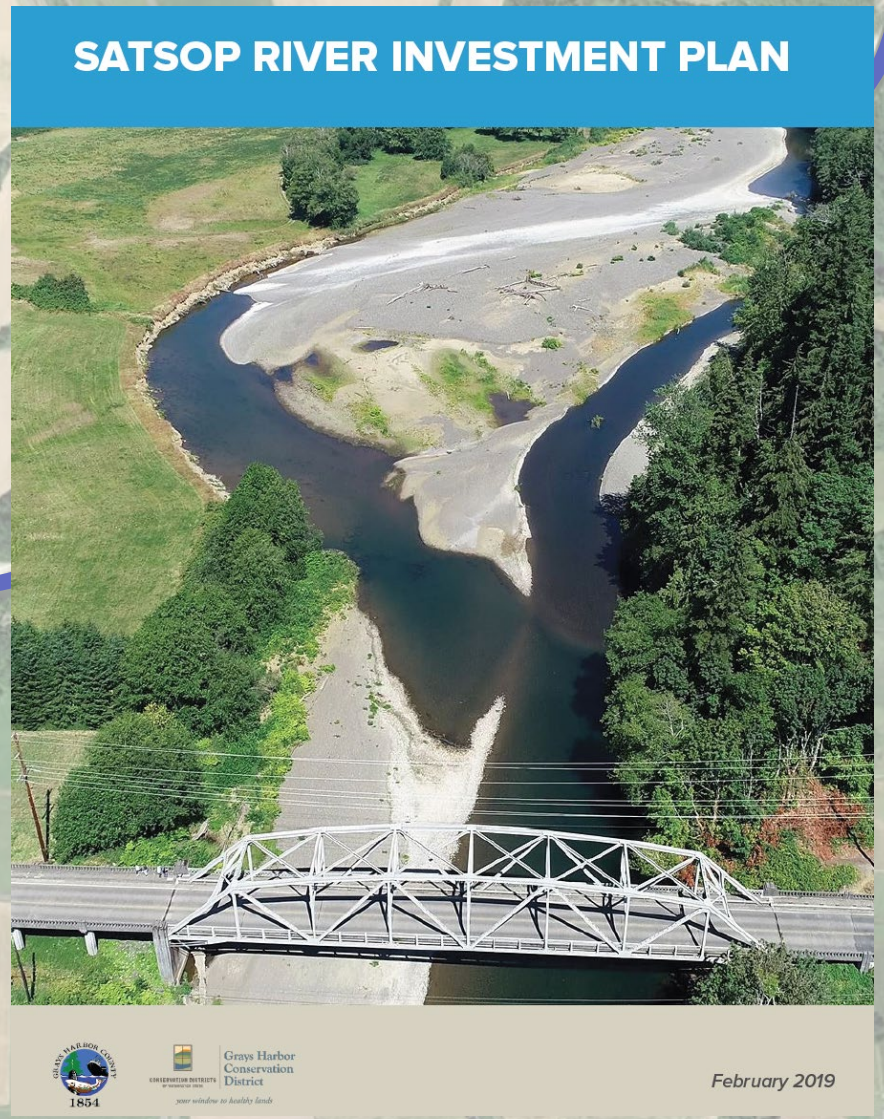


SATSOP: 2017

SATSOP: 2017

SATSOP: 2017

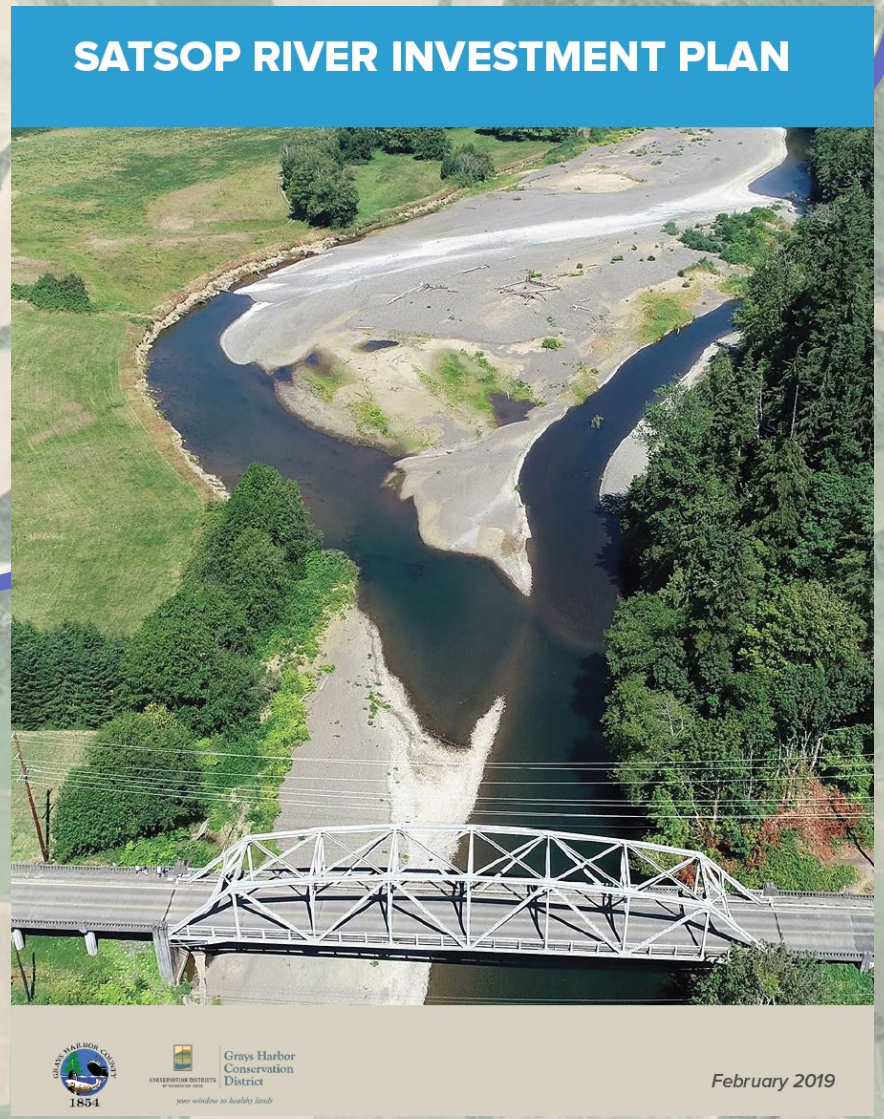
Port of Grays Harbor Well, threatened by river migration



Community outreach, Developed 2018-19

PROJECT (LEAD AGENCY)	NEAR-TERM 2019-2020	MEDIUM-TERM 2021-2025	LONG-TERM 2026-2045	FUNDING SOURCE
Large Woody Debris in Upper Watershed (GHCD) *Slow river velocity to reduce erosion and enhance habitat*	Design & Construct Pilot *$350K*	Design & Construct (3-5 mi) *$425K - 725K*	Design & Construct (15-20 mi) *$2 M - $3 M*	WQ Grants, WCRI, CRBFA
Engineered Log Jams on East Fork of Satsop River (GHCD) *Bank stabilization and habitat enhancement*	Design & Construct *$6.8 M*			Chehalis Basin Strategy
Keys Road Soft Armoring (GHC) *Protection of key public infrastructure while minimizing environmental impact*	Coordinated Design *$200K - $400K*	Construction *$2 M - $2.5 M*		CRBFA, GHC
Engineered Log Jams on Lower Satsop River (GHCD) *Bank stabilization and habitat enhancement*	Construction Initial Phase *$1M - $1.5M*	Construct *$1M - $2M*		WCRI, WWRP, CRBFA, FbD, GHC, DNR
Infrastructure and Long-Term Asset Planning (GHC) *Evaluate options for changes in coordination with eventual bridge replacement*			Plan for and Implement Modifications *$TBD*	GHC
Gravel Ponds, Phase 1 (WDFW) *Increase floodplain connectivity and enhance habitat*	Construct *$1 M*			WCRI
Gravel Ponds, Phase 2 (WDFW) *Increase floodplain connectivity and enhance habitat*		Construct *$1.7 M*		WCRI
Engineered Log Jams — Other Locations (GHCD) *Address bank erosion to protect farm land and infrastructure, including bridges*		Feasibility Study *$150K - $250K*		CRBFA, FbD, WCRI, WWRP, SRFB
Land Conservation (Multiple Agencies) *Increase flood plain connectivity and enhance habitat*	As Opportunities Arise with Willing Sellers			CRBFA, FbD, WCRI, WWRP, SRFB

Prioritized by community and advisory group



SATSOP: 2021

SATSOP: 2021

SATSOP: 2021


2021 main channel
2018 Avulsion
2017 main channel
N
3000 ft
Google Earth

Lower Satsop Restoration and Protection Phase 1

2020-2021

Protection of Keys Road using log structures

Google Earth

Emergency Right Bank Conservation Project

2021-2022

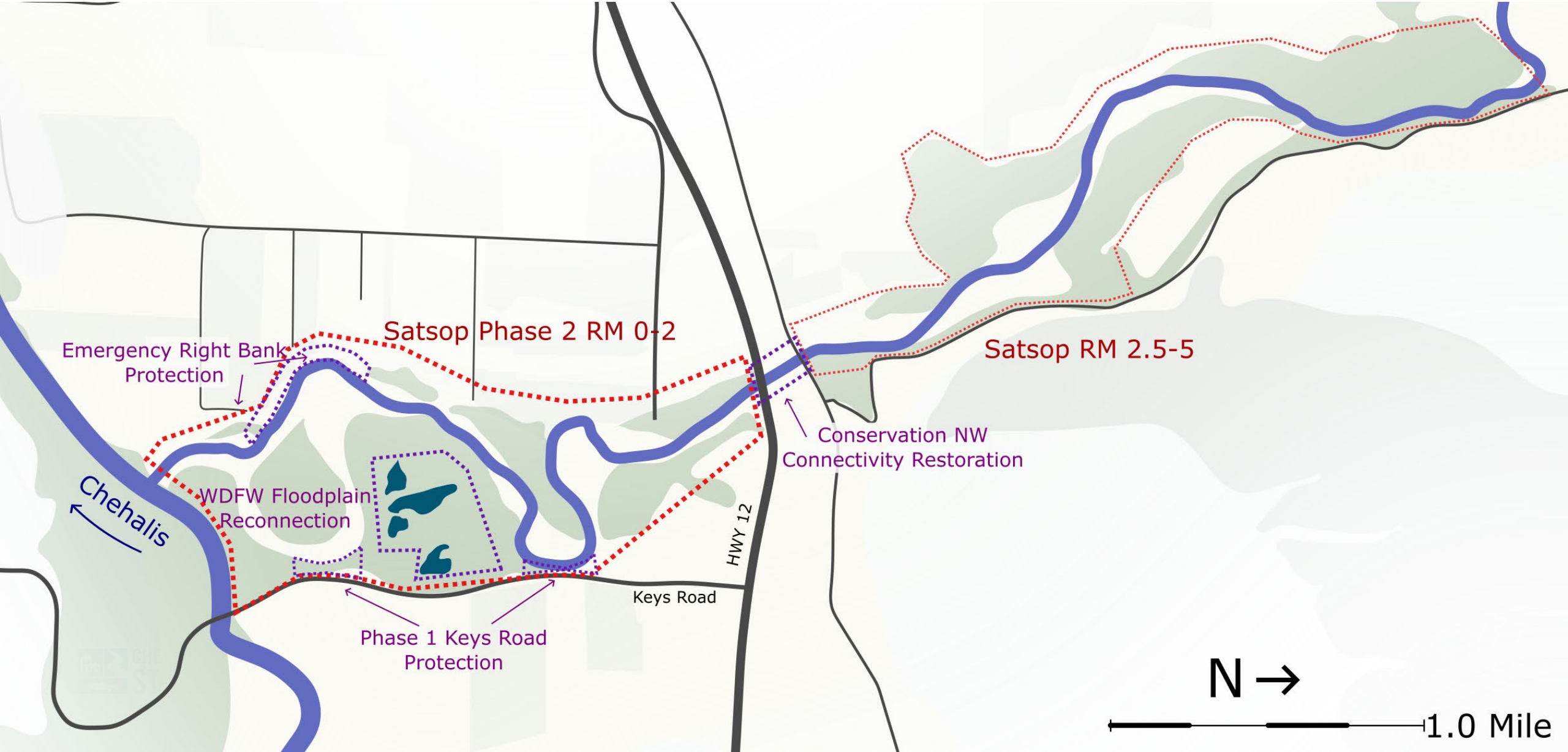
Reducing threat of erosion to farmland and structures

WDFW Gravel Ponds Floodplain Reconnection Project

2018-2023

Creating off-channel habitat and increasing connection to Satsop

RELATED WORK AND PREVIOUS FUNDING



SATSOP RIVER MILE 0-2 RESTORATION - PHASE 2

Bank grading, engineered log jams, scour path grading - reduce erosion, provide habitat complexity, create scour pools, allow riparian veg establishment (shade), floodplain reconnection

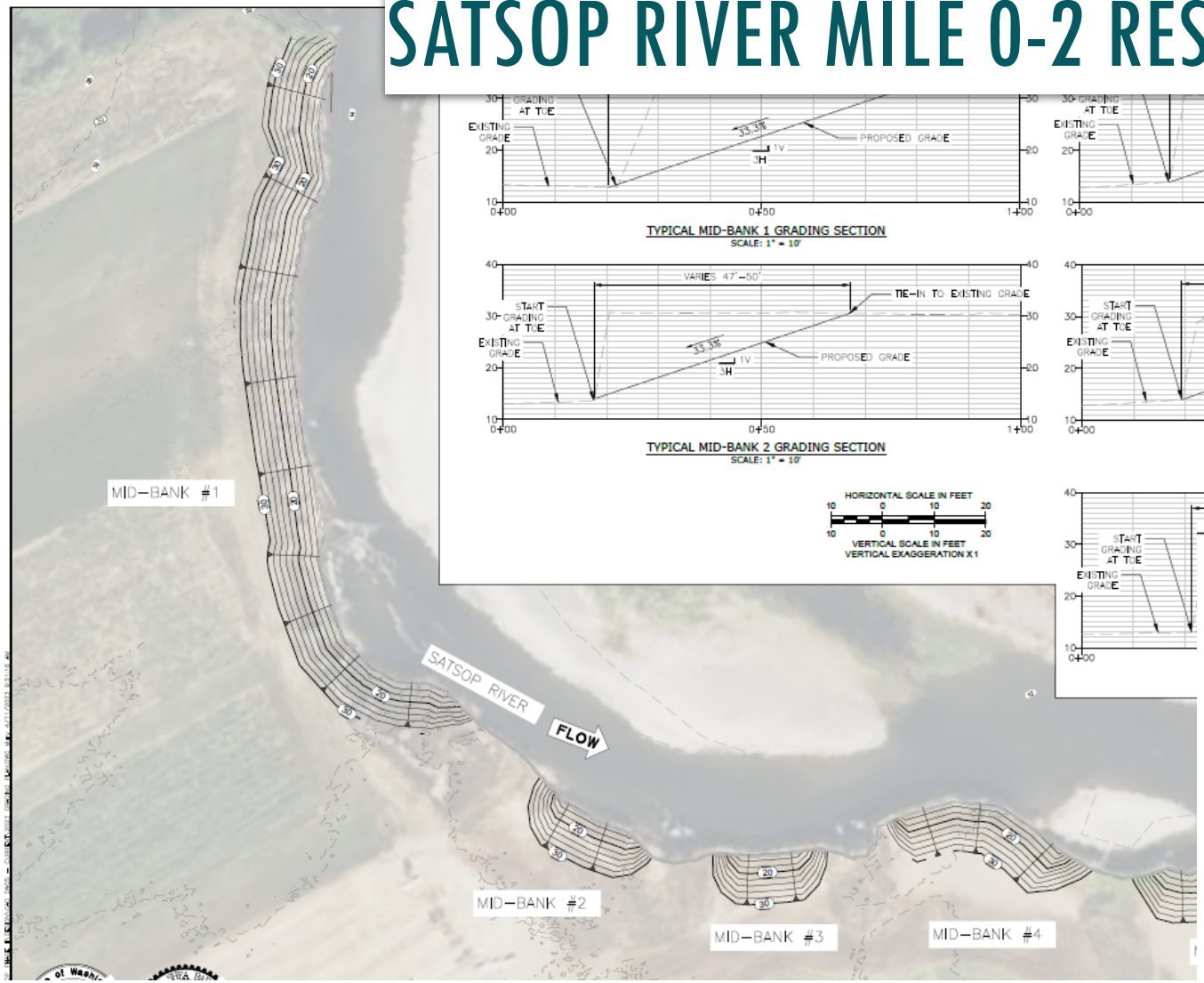
SATSOP RIVER MILE 0-2 RESTORATION - PHASE 2

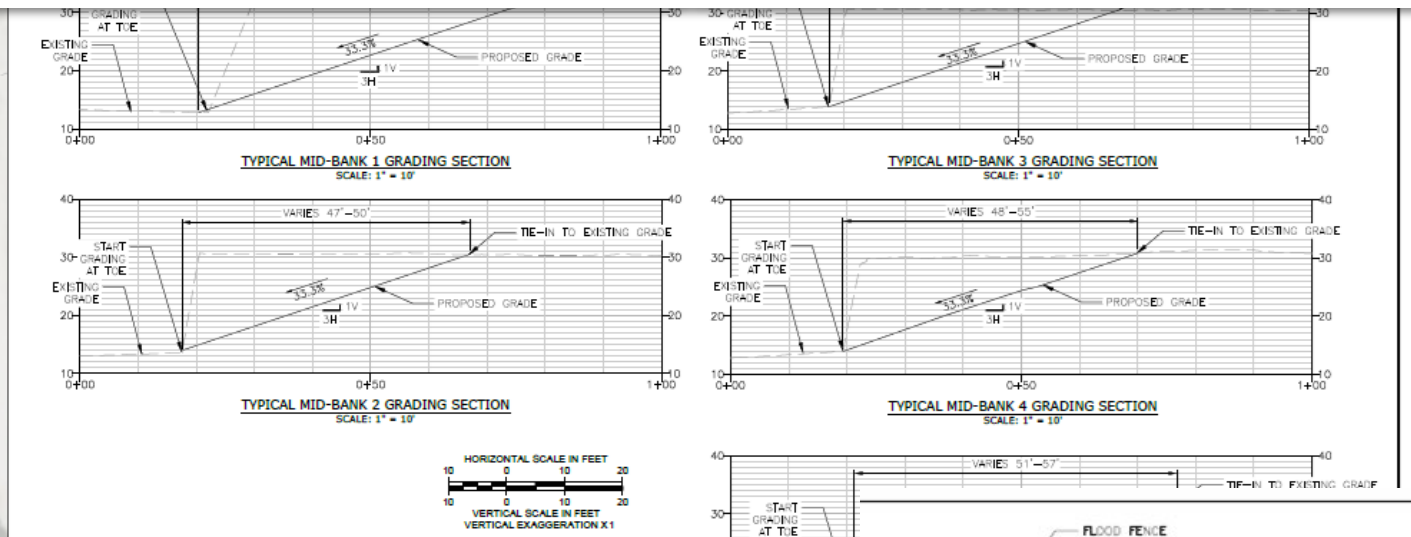
Bank grading and engineered log jams, scour path grading - reduce erosion, provide habitat complexity, create scour pools, allow riparian veg establishment (shade), floodplain reconnection

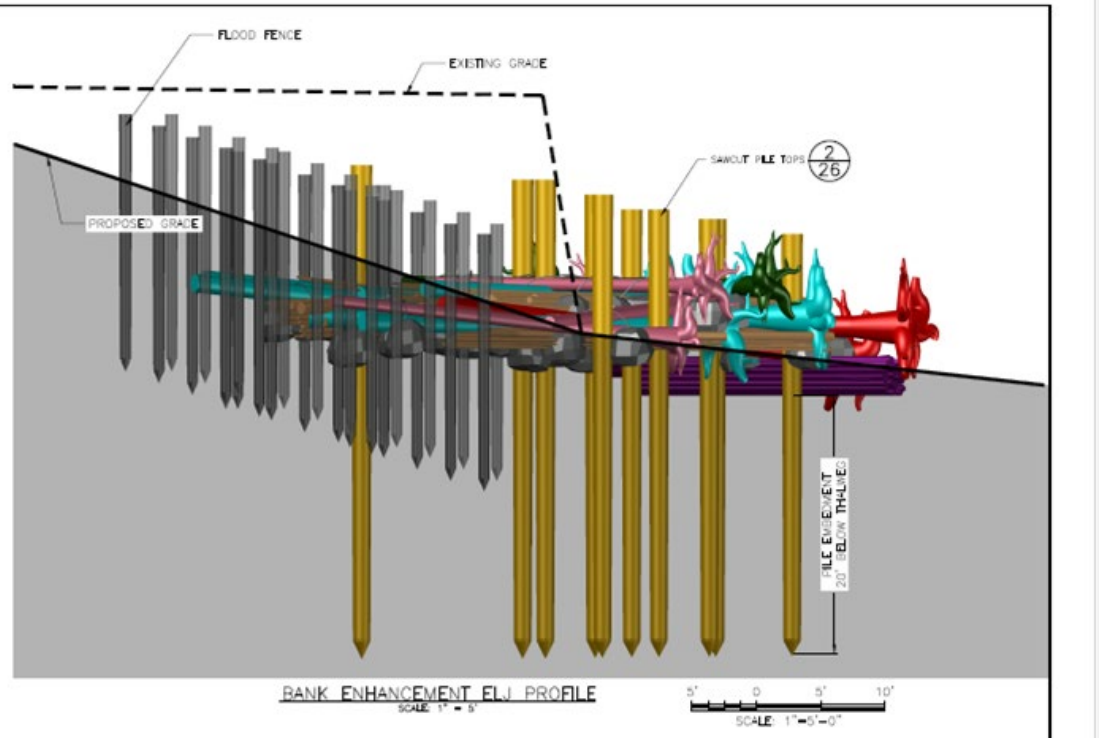
NEAR-TERM ASRP PRIORITY AREAS AND ACTIONS

Ecological Region	Geospatial Unit	Restoration Actions: Place Large Wood	Remove Fish Barriers	Reconnect/ Restore Floodplain	Riparian Restoration	Beaver Ponds/ BDAs	Wetland Restoration	Acres of OSF* Habitat Protection/ Restoration	Geospatial Unit Information: Total Number of Barriers	Length of Primary River (miles)	Percent of Primary River Length Proposed for Restoration	Proposed Protection/ Restoration (miles)	Priority Species or Habitat Focus	Limiting Factors From Highest Priority to Lowest
	Lower Satsop MS GSU	●		●	●				0	6.6	50%	3	● High Priority Core Habitats ● Early Riparian Restoration	**Key Habitat, Temperature, Habitat Diversity,** Channel Length, Channel Stability, Predation, Flow, Sediment Load

SATSOP RIVER MILE 0-2 RESTORATION - PHASE 2







CHEHALIS BASIN STRATEGY

SATSOP RM 0-2 PHASE 2: BUDGET

Design (already funded):

- Chehalis ASRP design funding for Lower Satsop Phase II: $320,000
- Chehalis Basin Flood Authority Design Funding for Lower Satsop Phase II: $96,902

Implementation (seeking funding):

- Total Budget: **$9,301,084**
- Sources:

Funding Source	Amount	Status
National Fish and Wildlife Foundation National Coastal Resilience Fund:	$6,276,083.75	Awaiting decision (Nov 2023)
Grays Harbor County (Planting)	$25,000	Recieved
Washington State Conservation Commission Riparian Funding	$100,000	Waiting for application period to open
Chehalis ASRP	**$3,000,000**	**Awaiting Board action**

SATSOP RM 0-2 PHASE 2: TIMELINE

- Final Design Complete - Fall 2023
- Permits and Bids- Fall 2023 to Spring 2024
- River Mile 0 to 1 Construction - Summer 2024
- River Mile 1 to 2 Construction - Summer 2025
- Invasive Plant Management and Riparian Planting - 2024 to 2026

Timeline dependent on permits and provision of implementation funding

All remaining phases would be funded by this project

SATSOP RM 0-2 PHASE 2: FEEDBACK

- Supported by peer organizations, Satsop workgroup
- WDFW Habitat Biologist: Project has very high potential for habitat uplift
- Many letters of support in NFWF grant
- Review Team
  - Would like to see project success metrics re-formatted in documents to more easily compare project goals to ASRP priorities
  - Working with project team, ASRP, and DFW to devise project effectiveness survey protocols

TASK: REVIEW FUNDING INCREASE REQUEST

- This project is asking for Phase 2 construction funding of $3,000,000
  - 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 **Dec 7, 2023 Board meeting**
- Please send any questions to Drew Mealor (Andrew.Mealor@dfw.wa.gov)