



# LOWER SATSOP RESTORATION AND PROTECTION PROGRAM

Protect, Preserve, Restore

\* Farmland \* Essential Infrastructure \* River/Floodplain Functions & Habitat

October 8, 2019



Grays Harbor  
Conservation  
District

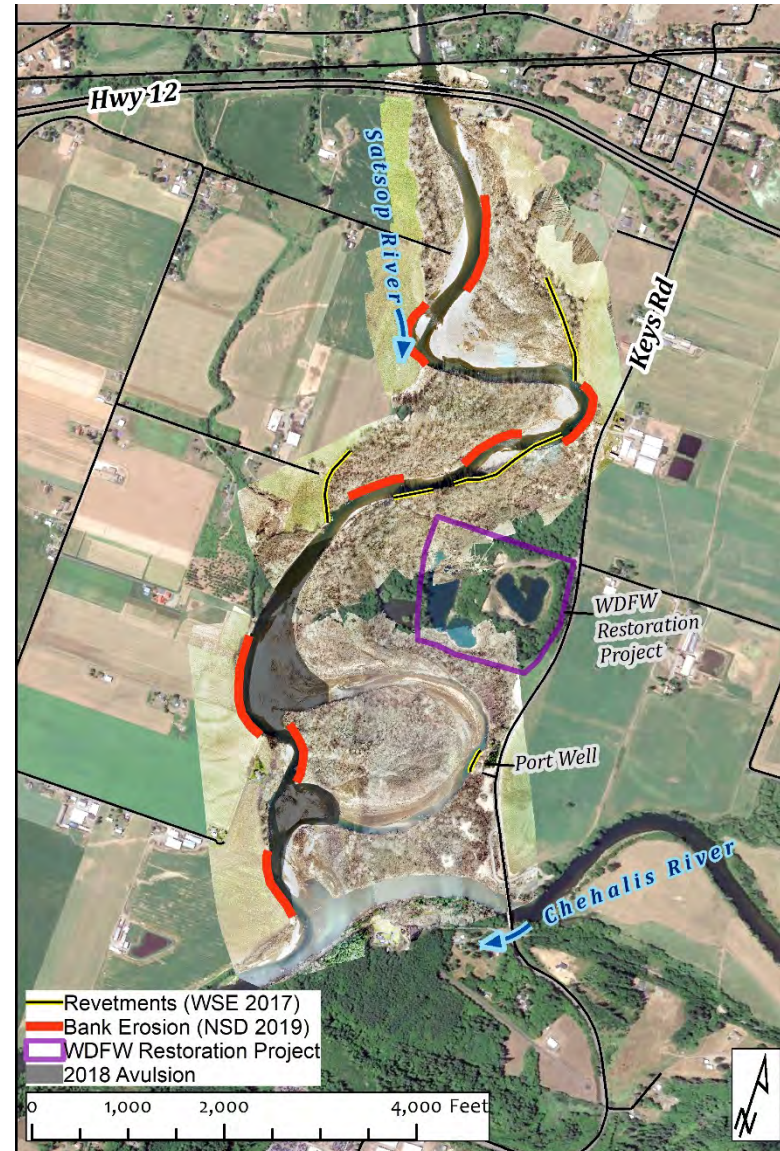
*your window to healthy lands*





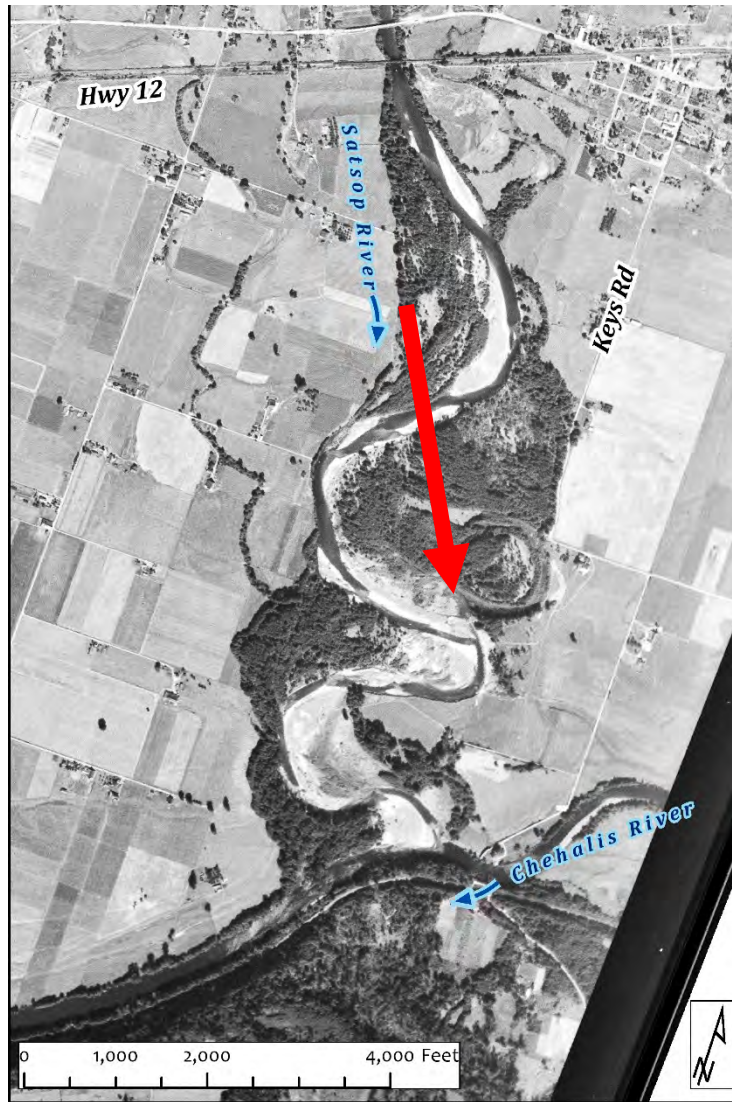
# Issues

- Bank Erosion
- Revetments
- Keys Road
- Port Well
- WDFW Restoration Project
- 2018 Avulsion



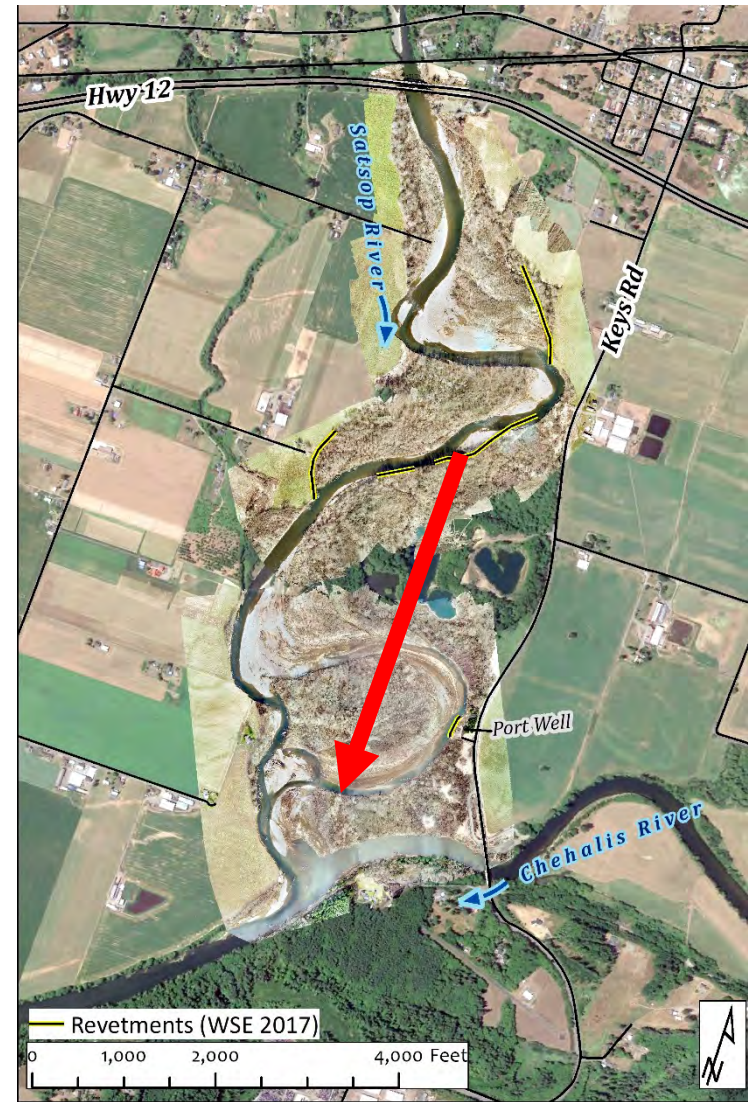


# Historical Context



2

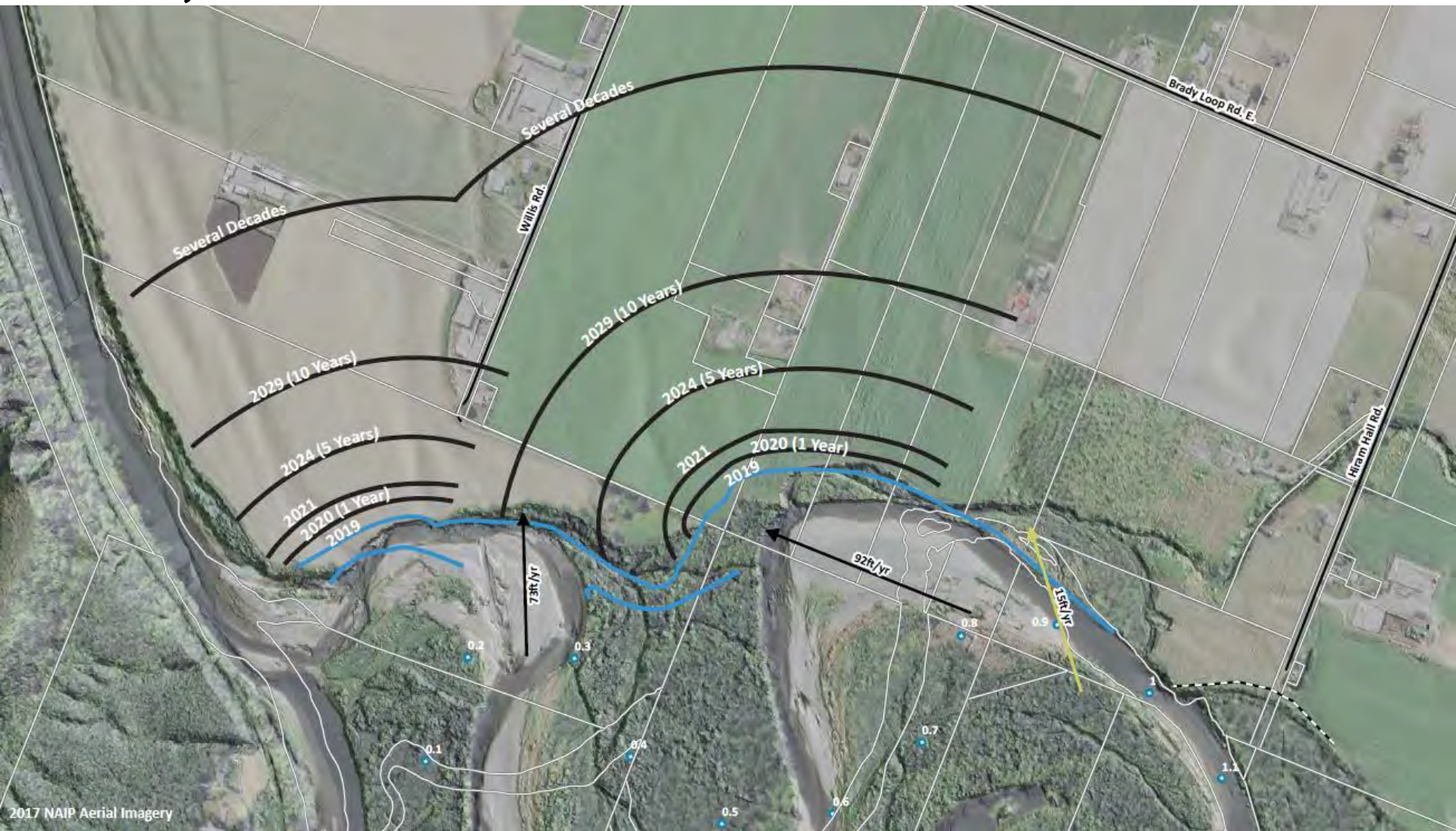
1953



2019



# Projected Erosion Without Treatment



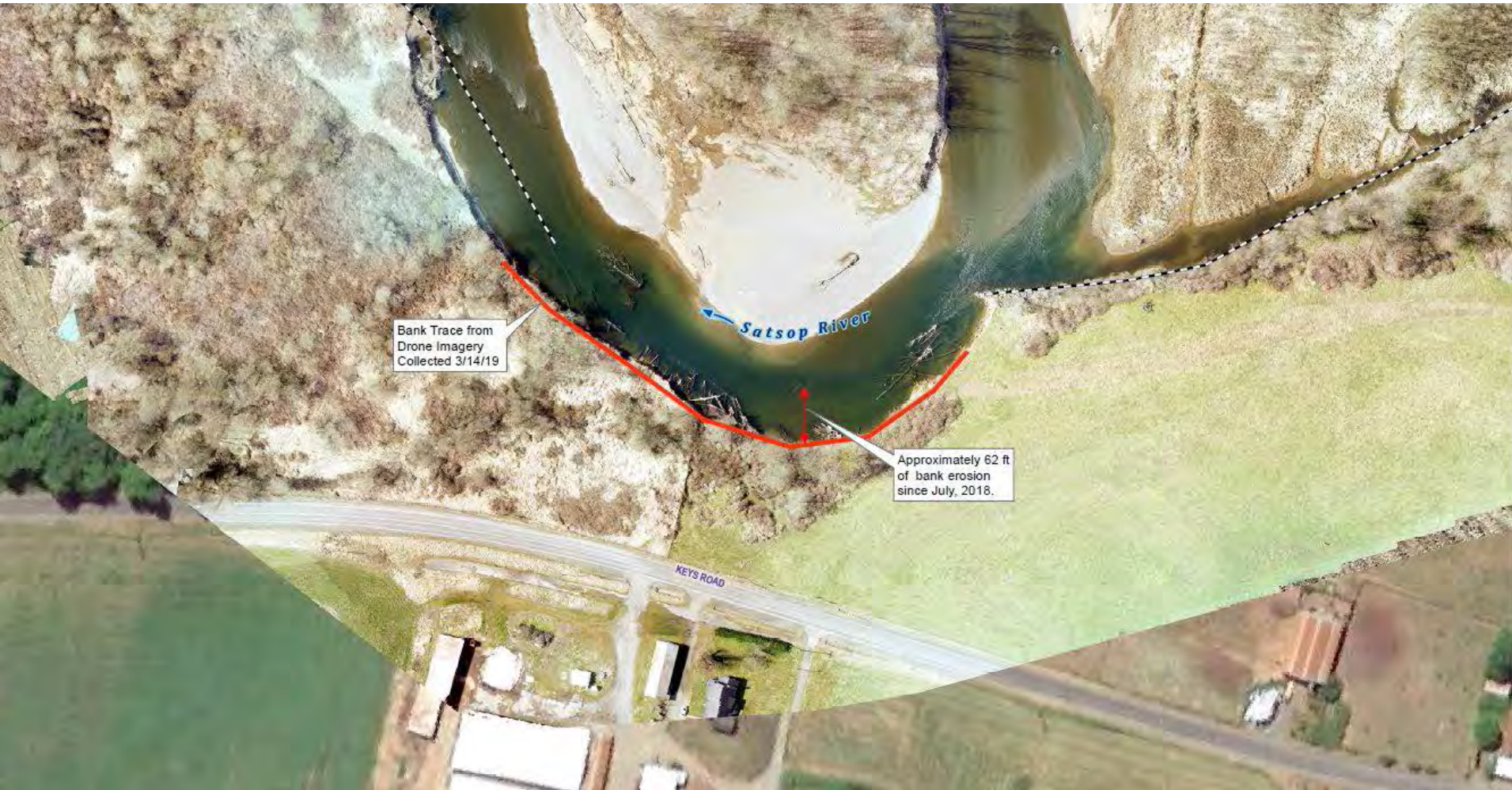


# Highly Erodible Agricultural Soils



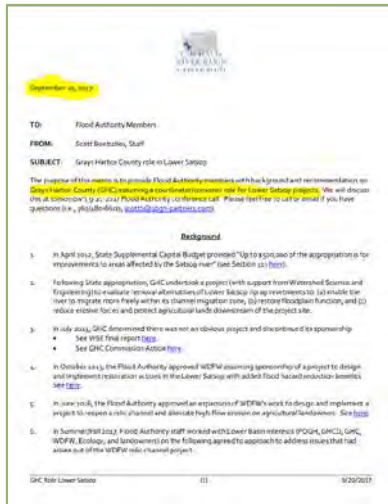


# Essential Infrastructure Threatened (e.g., Keys Rd.)





# Lower Satsop Restoration, Protection Program



“Organization Stage”  
9/2017 -- See [here](#).

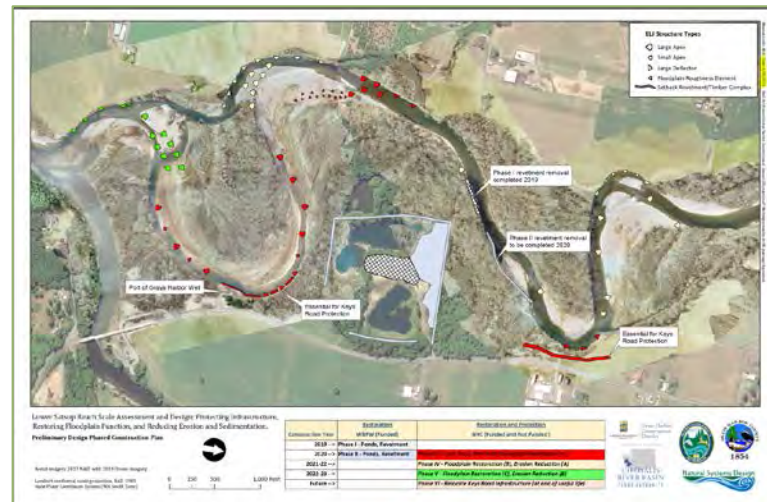


“Vision Stage”  
2/2019 -- See [here](#).



“Planning Stage”  
9/2019 -- See [here](#) and [here](#).

✓ Protect  
 ✓ Preserve  
 ✓ Restore



“Implementation Stage”  
9/2019 -- See [here](#).



# Implementation Stage (Plan)



Lower Satsop Reach Scale Assessment and Design: Protecting Infrastructure, Restoring Floodplain Function, and Reducing Erosion and Sedimentation.

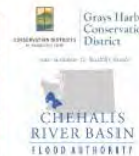
Preliminary Design Phased Construction Plan

Aerial Imagery 2017 NAIP with 2019 Drone Imagery

Lambert conformal conic projection, NAD 1983  
State Plane Coordinate System (WA South Zone)



CONSTRUCTION [Funded, Not Funded.]	WDFW "Restoration"	GHC "Restoration and Protection"
2019 -->	Phase I - Ponds, Revetment	
2020 -->	Phase II - Ponds, Revetment	Phase I - Keys Road, Port Well, Floodplain Restoration (A)
2021-22 -->		Phase II - Floodplain Restoration (B), Erosion Reduction (A)
2022-23 -->		Phase III - Floodplain Restoration (C), Erosion Reduction (B)
Future -->		Phase IV - Relocate Keys Road Infrastructure (at end of useful life)

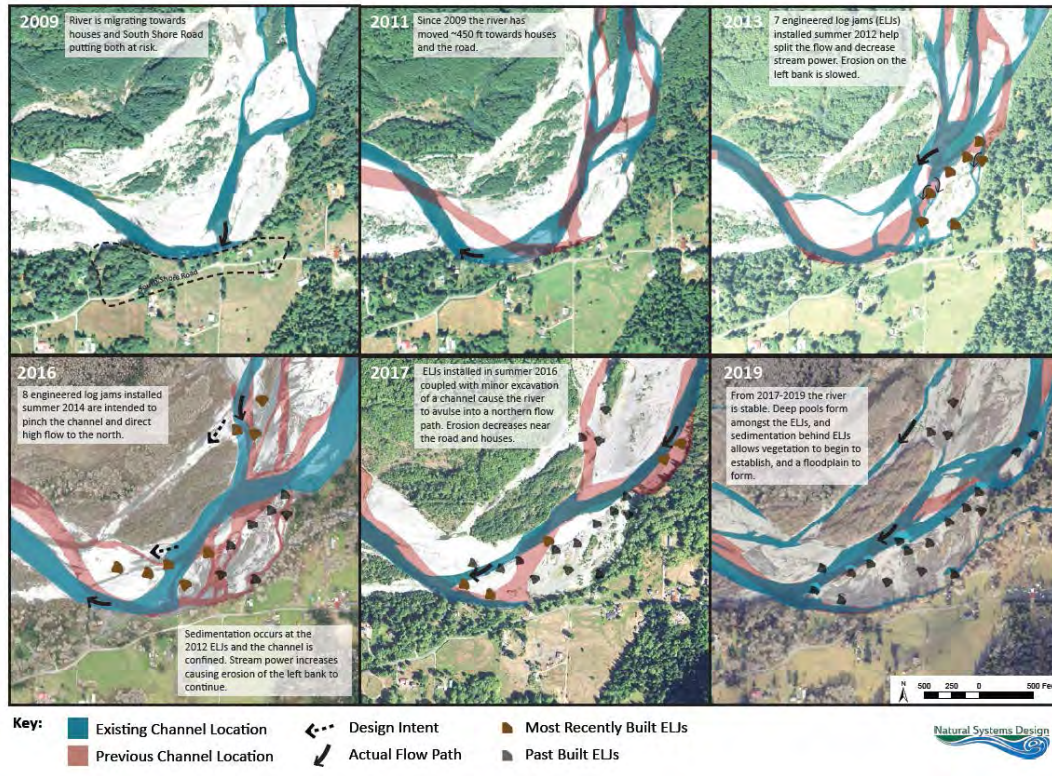




# Implementation Stage (Examples)

Timber complex →

Upper Quinault Channel Migration Lower PAS





# Apex Structure





# Deflector Structure





# Floodplain Roughness





# Implementation Stage (2019 - 2022/23)

	Cost	Status
<b>2019:</b>		
• Phase I (WDFW Construction) -- Ponds, Revetment	\$1,030,000 (WCRI)	Funded, Completed
• Phase I (GHC Design/Permitting) -- Keys Road, Port Well, Floodplain Restoration (A), 2020 construction season	\$100 to \$160K (FA)	Funded, Underway
<b>2020:</b>		
• Phase II, WDFW (Construction) -- Ponds, Revetment	\$1,429,000 (WCRI)	Funded, Scheduled
• Phase I (GHC Construction) -- Keys Road, Port Well, Floodplain Restoration (A)	\$4.0 to \$5.5M (**)	Partially Funded, Scheduling Pending
• Phase II (GHC Design/Permitting) – Floodplain Restoration (B), Erosion Reduction (A), 2021-22 construction season	\$200K to \$300K	Not Funded, Pending
<b>2021:</b>		
• Phase II (GHC Construction) -- Floodplain Restoration (B), Erosion Reduction (A)	\$2.5M to \$3.0M	Not Funded, Pending
• Phase III (GHC (Design/Permitting) – Floodplain Restoration (C), Erosion Reduction (B), 2022-23 construction season	\$100K to \$200K	Not Funded, Pending

\*\* Multiple funding sources: \$185K 2019-21 State Capital Budget (secured); \$640K FA reallocation (secured); \$400K GHC .09 funds (secured); \$TBD Rep. Blake member request (pending); \$TBD WDFW Phase II savings (potential).



# Implementation Stage (2019)



WDFW Ponds Restoration  
(remove spoils piles, shallow out ponds)



Lower WDFW Revetment  
(remove 200' rock toe, excavate 20' x 85' channel)



# Contacts

Organization	
Grays Harbor County	Rob Wilson 360/249-4222 <a href="mailto:RWilson@co.grays-harbor.wa.us">RWilson@co.grays-harbor.wa.us</a>
Grays Harbor Conservation District	Anthony Waldrop 360/249-8532 <a href="mailto:ghcdwater@gmail.com">ghcdwater@gmail.com</a>
WA Department of Fish and Wildlife	Michelle Cramer 360/902-2610 <a href="mailto:Michelle.Cramer@dfw.wa.gov">Michelle.Cramer@dfw.wa.gov</a>  Doris Small 360/902-2258 <a href="mailto:doris.small@dfw.wa.gov">doris.small@dfw.wa.gov</a>
Natural Systems Design	Miranda Smith 206/480-1127 <a href="mailto:miranda@naturaldes.com">miranda@naturaldes.com</a>
Chehalis River Basin Flood Authority	Scott Boettcher 360/480-6600 <a href="mailto:scottb@sbgh-partners.com">scottb@sbgh-partners.com</a>



# Resource

[https://www.ezview.wa.gov/site/alias\\_\\_1973/37263/library.aspx](https://www.ezview.wa.gov/site/alias__1973/37263/library.aspx)

Grays Harbor County - Lower Satsop Planning, Visioning, and Priority Setting Project

Overview Contacts Events Library

## Documents

File Name	File Size	Category	Date Added
Advisory Group -- Lower Satsop Update 9-30-2019.pdf	6.4 MB	9-30-2019 Advisory G...	09/30/19 10:50 AM
dot09 grant app figure v4.pdf	3.6 MB	9-30-2019 Advisory G...	09/30/19 10:47 AM
L Satsop Draft Preliminary Design.pdf	18.5 MB	9-30-2019 Advisory G...	09/30/19 10:47 AM
WDFW Lower Satsop Update 9-03-2019.pdf	9.8 MB	None	09/03/19 06:19 AM
WDFW Lower Satsop Update 9-03-2019.pptx	14.4 MB	None	09/03/19 06:19 AM
Initial Letter to WDFW Lower Satsop Restoration 8-21-2019.pdf	817.2 KB	None	09/02/19 12:07 PM
dot09 grant app figure V3.pdf	4.5 MB	None	09/02/19 12:06 PM
2019 Application Keys Road Protection.pdf	158.9 KB	None	09/02/19 12:06 PM
Lower WDFW Revetment Removal.pdf	13.2 MB	None	08/08/19 09:13 AM
2019 Application Keys Road Protection.pdf	158.9 KB	None	08/08/19 07:41 AM
Lower Satsop Update 7-25-2019.pptx	18 MB	None	07/25/19 11:24 AM
Lower Satsop Update 7-25-2019.pdf	7.2 MB	None	07/25/19 11:23 AM
Lower Satsop Funding 2019-2021.pdf	151.4 KB	None	05/25/19 08:07 AM
Keys Road Threat Mile 1.5 to 1.6 (5-25-2019).pdf	14.7 MB	NSD	05/25/19 07:27 AM
Preliminary DRAFT Cost Estimates Action Areas I-IV (5-25-2019).pdf	107.1 KB	NSD	05/25/19 07:26 AM
L Satsop Geomorphic Action Areas (5-25-2019).pdf	12.8 MB	NSD	05/25/19 07:25 AM
PROPOSED-CONDITIONS-v2 5-16-2019.pdf	8.8 MB	5-16-2019 Flood Auth...	05/20/19 09:47 AM
NSD Chehalis Basin Flood Authority Meeting 5-16-19.pdf	6 MB	5-16-2019 Flood Auth...	05/20/19 09:47 AM
L Satsop v3 Apr Concept Binder.pdf	7.8 MB	NSD	04/19/19 02:59 PM
Lower Satsop Advisory Group Meeting 4-17-19.pdf	8.7 MB	NSD	04/16/19 02:02 PM
L Satsop v2 Apr Concept Binder.pdf	7.8 MB	NSD	04/16/19 02:02 PM



# Question/Discussion

## 1. Upcoming Meetings/Briefings:

Date	Time	Location	Audience
9/30/2019	1 p.m.	Montesano, WDFW Regional Office	Lower Satsop Advisory Group
10/1/2019	10:30 a.m.	Montesano, Grays Harbor County Admin Building	Grays Harbor County Commissioners
10/3/2019	1:15 p.m.	Centralia, Train Depot	Chehalis Basin Board
10/8/2019	9:00 a.m.	Aberdeen, Port of Grays Harbor	Port of Grays Harbor
10/9/2019	10:30 a.m.	Olympia, tbd	The Nature Conservancy
tbd	tbd	Olympia, OFM	Governor's Exec. Policy (Chris Davis)
tbd	tbd	Brady Firehall	Lower Satsop Community Members

## 2. JARPA = late-November/early-December 2019.