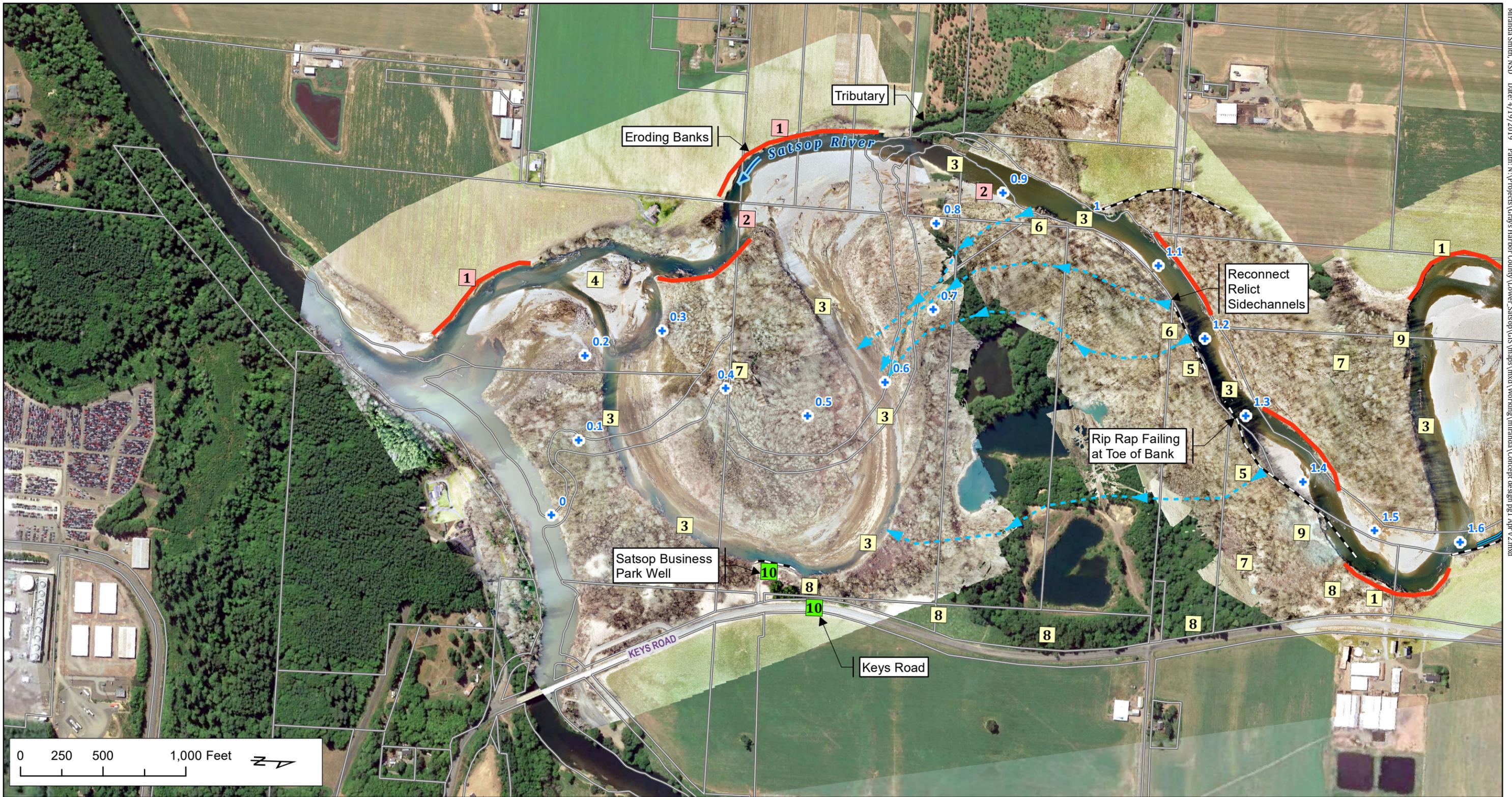


APPENDIX A

Reach Scale Conceptual Design

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Lower Satsop River Reach Assessment and Design

Concept Design: Sheet 1

4/19/2019 DRAFT

Aerial imagery 2017 NAIP
River Miles are from the National Hydrography Dataset
Parcels from Grays Harbor County GIS

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

Proposed Action Time Frame

- 1 Priority Actions, 2019-2020
- 1 Short Term, 2020-2023
- 1 Long Term, 2030-later
- Potential Avulsion Path
- Eroding Banks
- Revetments (WSE, 2017)

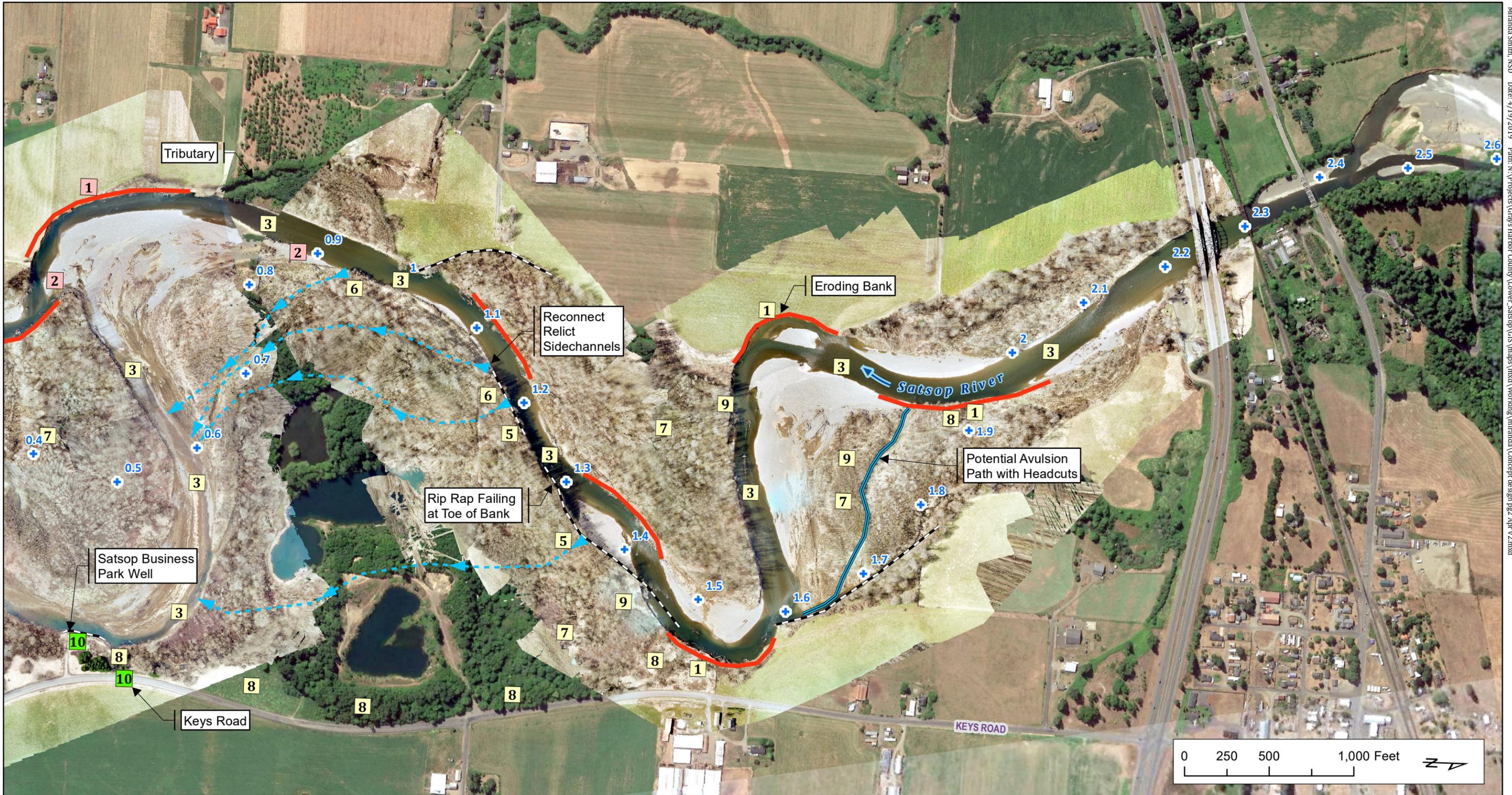
Project Objective

1. Reduce erosion and protect infrastructure.
2. Reduce erosion and protect infrastructure.
3. Improve floodplain connectivity and stream habitat.
4. Improve floodplain habitat for wildlife.
5. Improve floodplain connectivity.
6. Improve floodplain connectivity.
7. Improve floodplain habitat for wildlife.
8. Reduce erosion and protect infrastructure.
9. Reestablish riparian function and improve habitat.
10. Improve floodplain connectivity.

Concept Design Element:

1. Install wood structures at toe of bank in conjunction with laying back the bank and planting riparian vegetation.
2. Install wood structures to encourage river to re-engage with abandoned meander.
3. Install in channel structures to increase pool quantity, provide cover, and sort gravel.
4. Salvage existing wood accumulations for use as racking in new structures.
5. Remove bank hardening and selectively breach rock revetment.
6. Install left bank structures to reconnect relict side channels and floodplain.
7. Riparian forest enhancement with conifer interplanting.
8. Install timber complex or setback revetment to protect infrastructure as appropriate.
9. Install floodplain roughness or floodplain fencing to re-establish productive riparian function.
10. Remove and/or relocate infrastructure on floodplain (Keys Road and Satsop Business Park Well).





Lower Satsop River Reach Assessment and Design

Concept Design: Sheet 2

4/19/2019 DRAFT

Aerial imagery 2017 NAIP
 River Miles are from the National Hydrography Dataset
 Parcels from Grays Harbor County GIS

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

Proposed Action Time Frame

- 1 **Priority Actions, 2019-2020**
- 1 **Short Term, 2020-2023**
- 1 **Long Term, 2030-later**
- Potential Avulsion Path**
- Eroding Banks**
- Revetments (WSE,2017)**

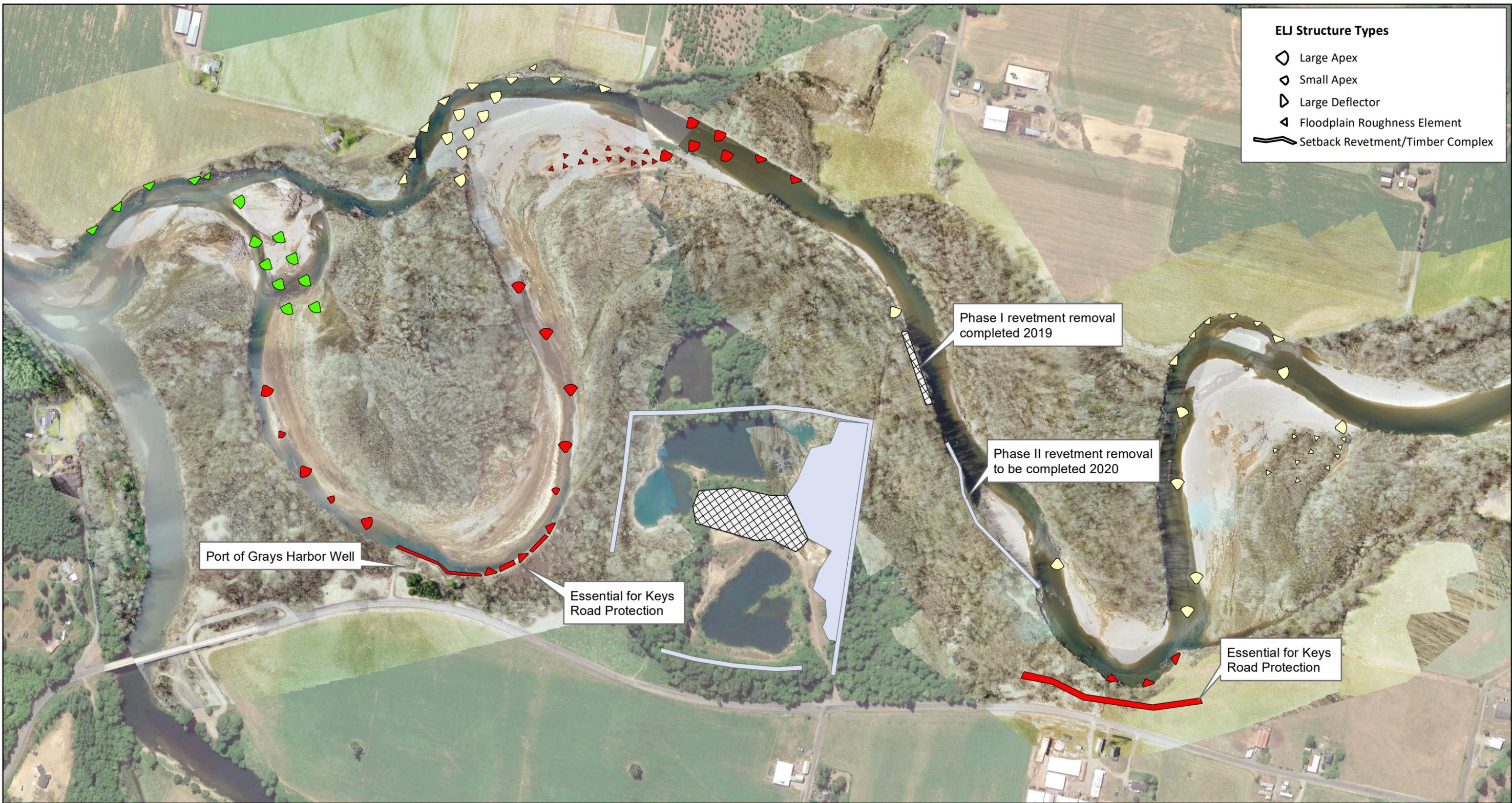
Project Objective

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4. Salvage existing wood accumulations for use as racking in new structures.
5. Remove bank hardening and selectively breach rock revetment.
6. Install left bank structures to reconnect relict side channels and floodplain.
7. Riparian forest enhancement with conifer interplanting.
8. Install timber complex or setback revetment to protect infrastructure as appropriate.
9. Install floodplain roughness or floodplain fencing to re-establish productive riparian function.
10. Remove and/or relocate infrastructure on floodplain (Keys Road and Satsop Business Park Well).



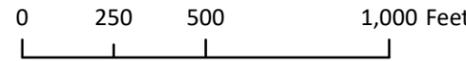


Lower Satsop Reach Scale Assessment and Design: Protecting Infrastructure, Restoring Floodplain Function, and Reducing Erosion and Sedimentation.

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)

