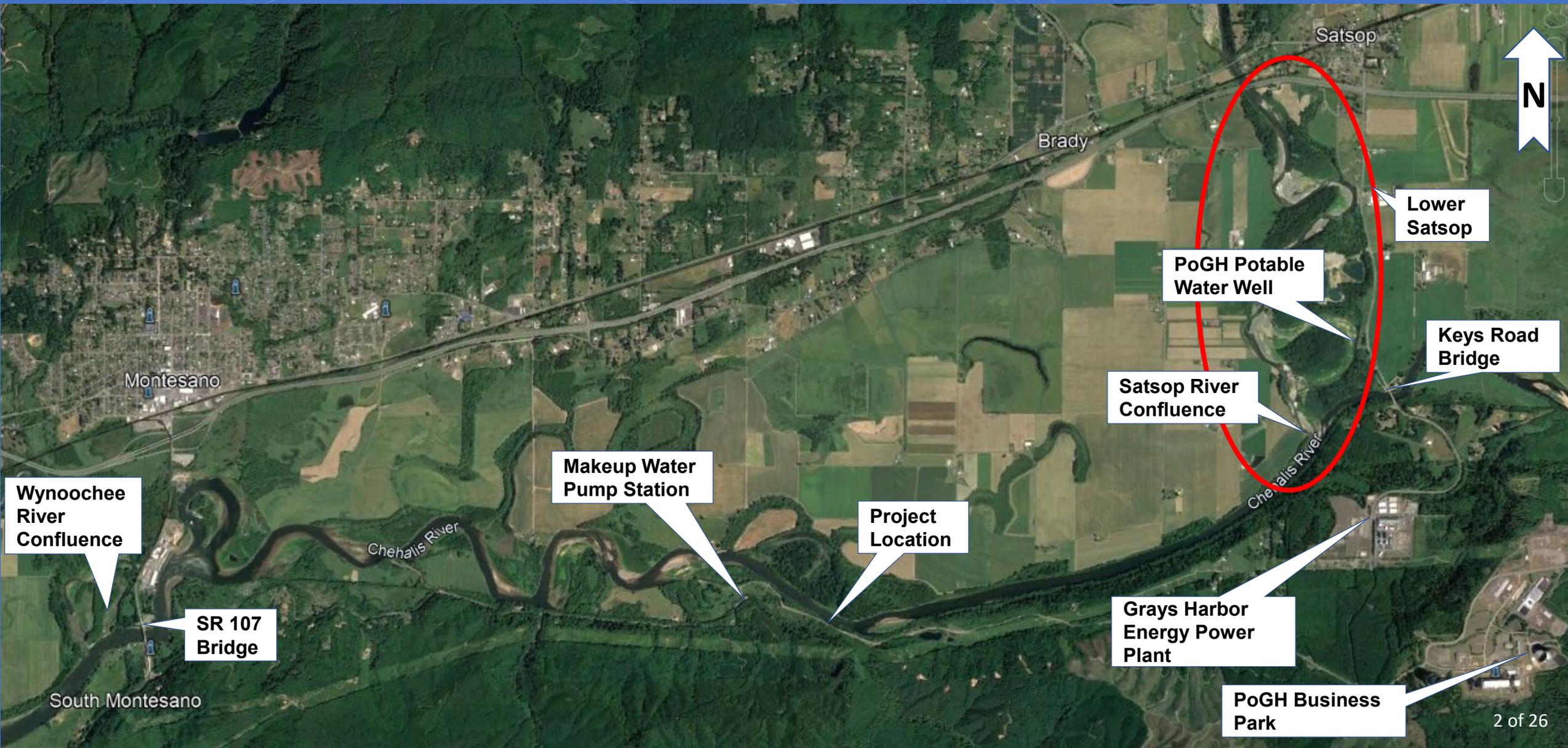


Keys Road to SR107 Reach Port of Grays Harbor Haul Road Erosion

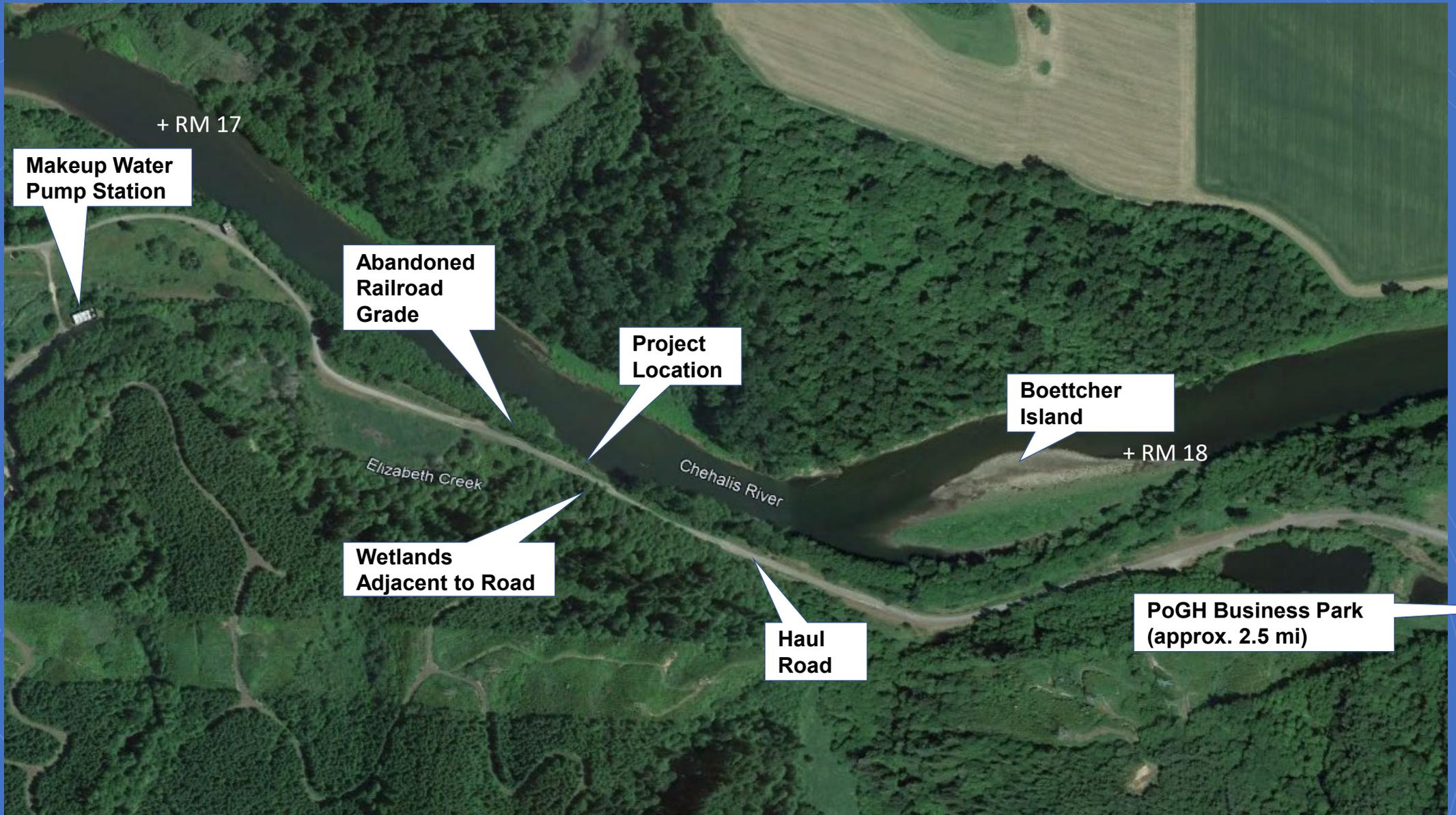
Lower Satsop Advisory Group
April 29, 2022



Project Location and Reach Context



Project Site



+ RM 17

Makeup Water Pump Station

Abandoned Railroad Grade

Project Location

Boettcher Island

+ RM 18

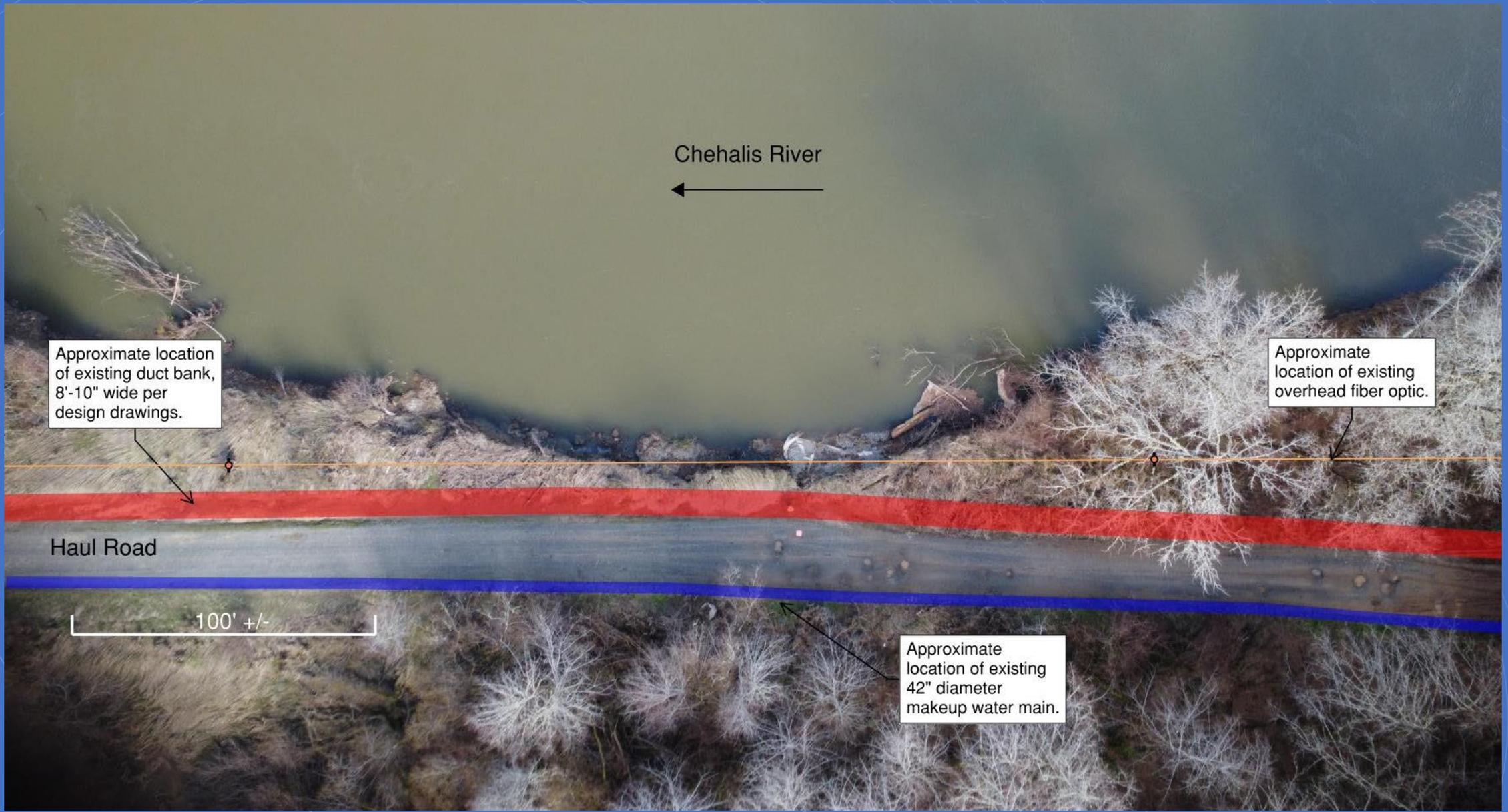
Wetlands Adjacent to Road

Haul Road

PoGH Business Park (approx. 2.5 mi)



Threatened Utilities



Erosion Progression



1/22/13

22 10:59AM

Erosion Progression



11/9/18

Erosion Progression



12/3/18

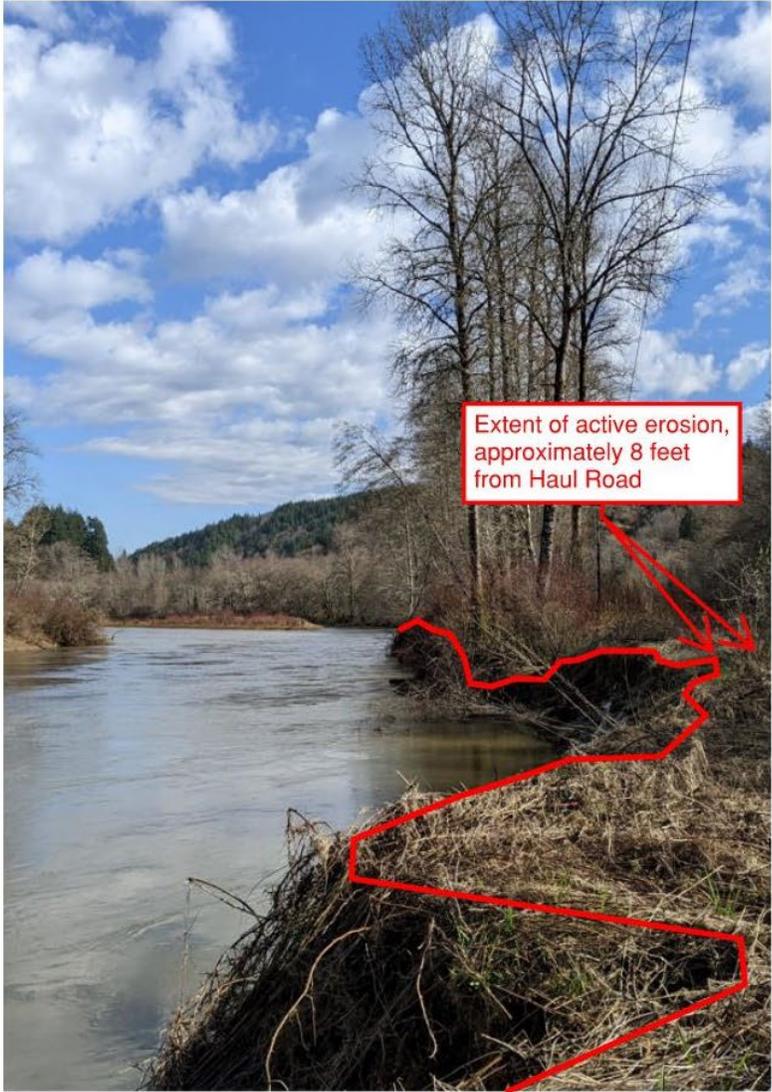
Erosion Progression



11/2/21

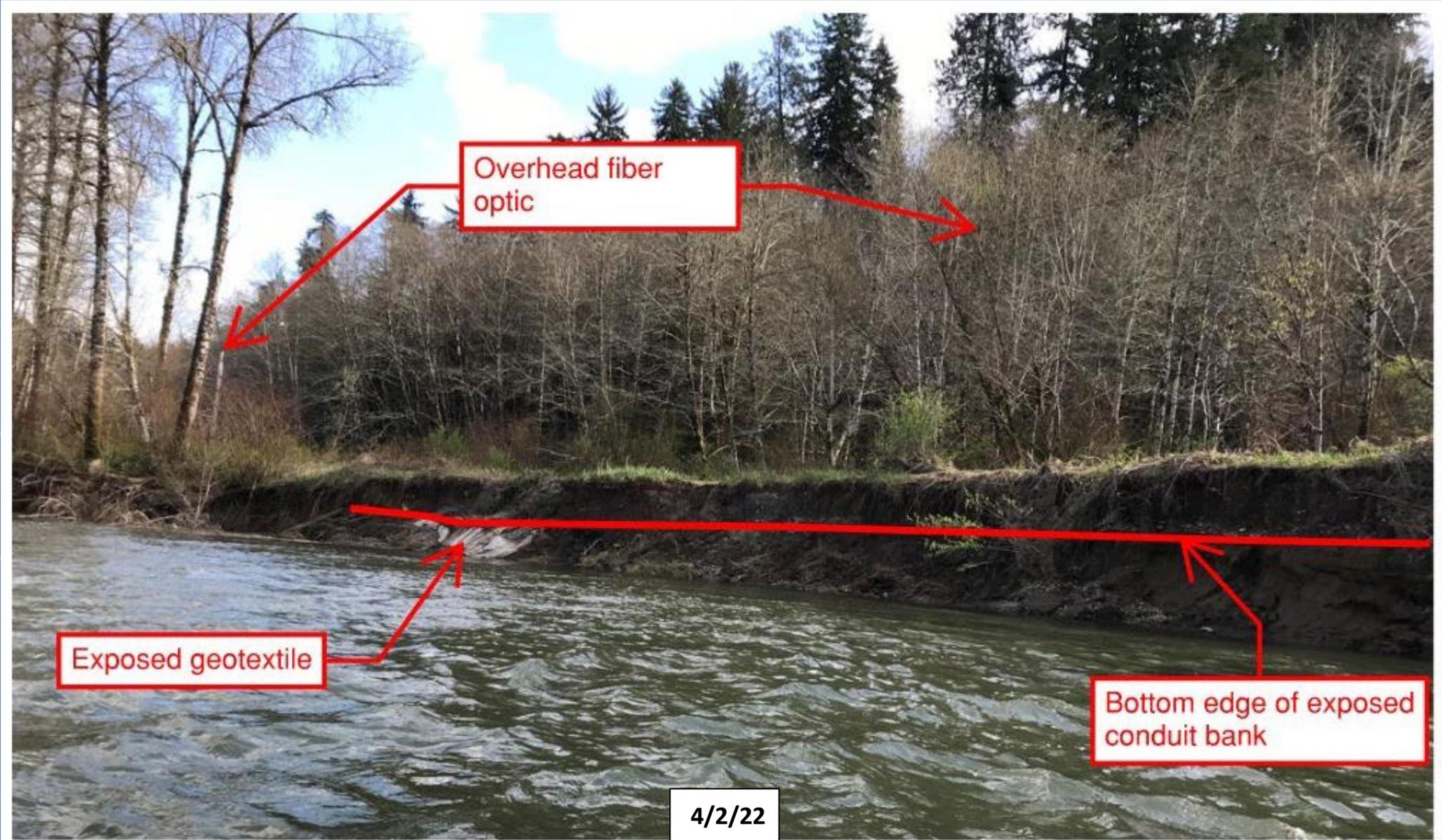


2/3/22



3/9/22

Erosion Progression



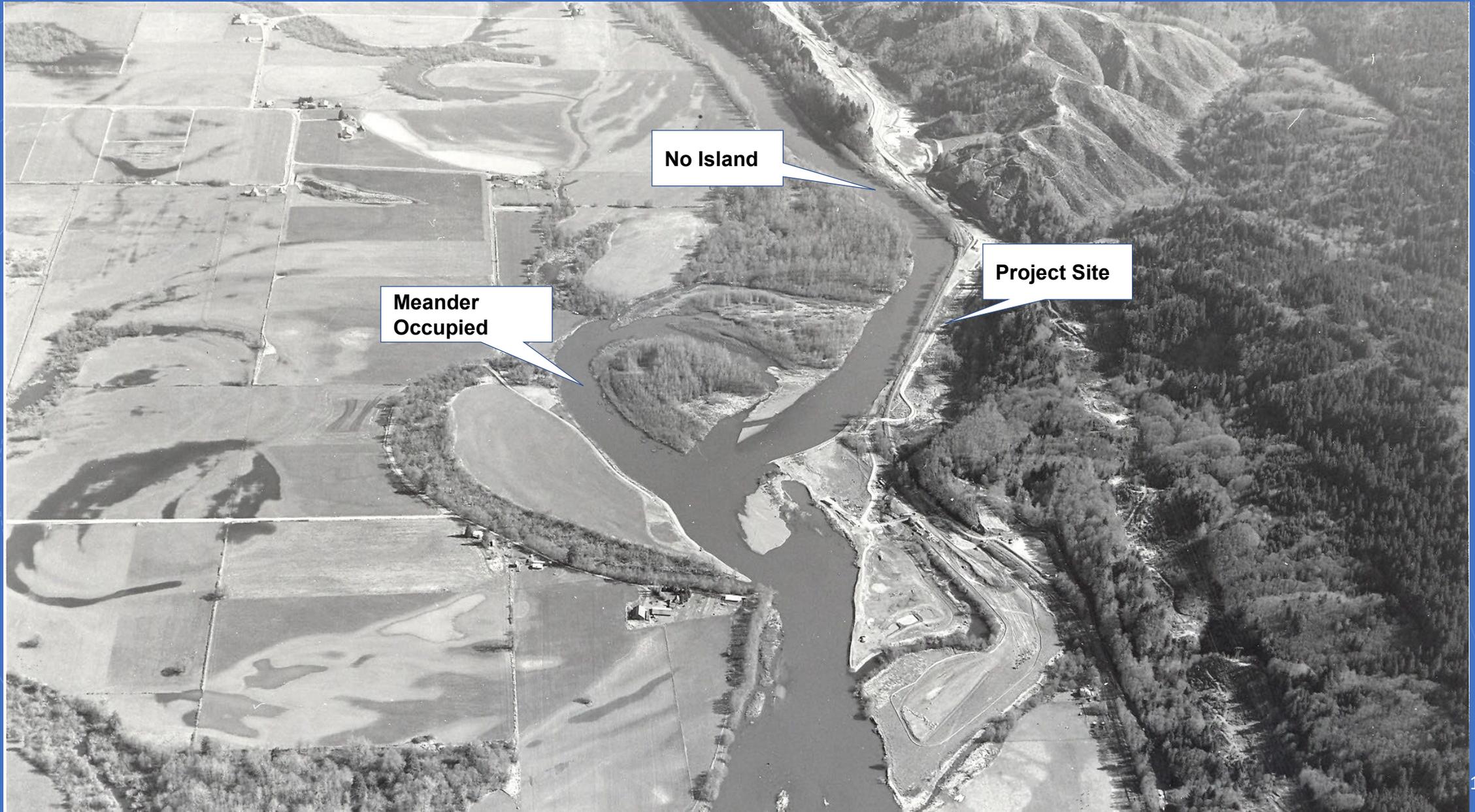
Aerial Video of Project Area

March 23, 2022

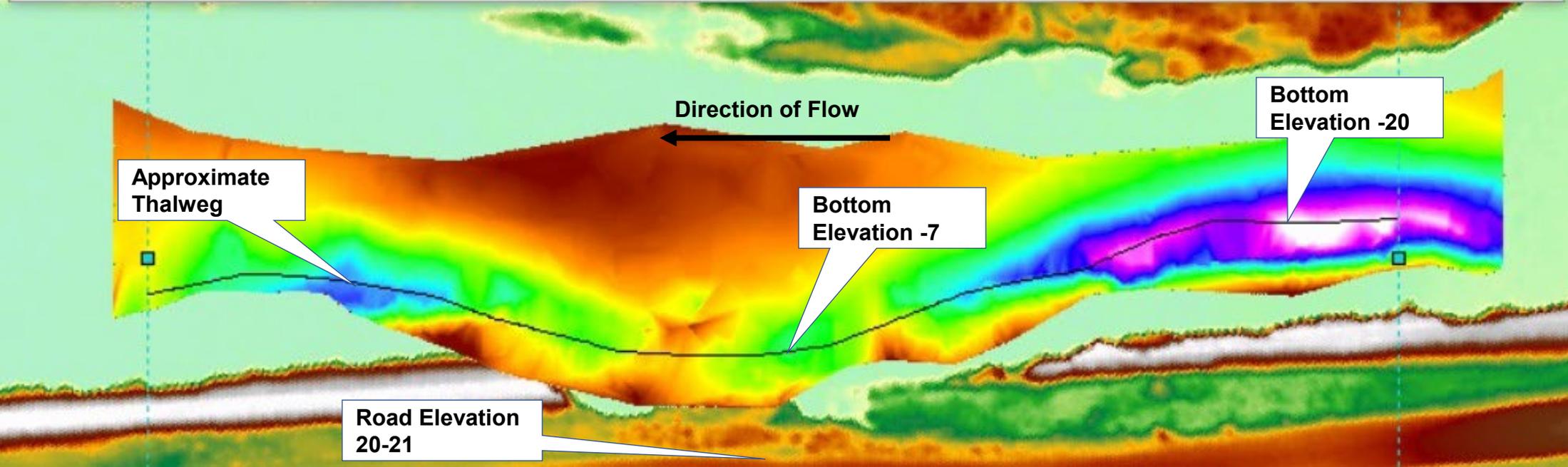
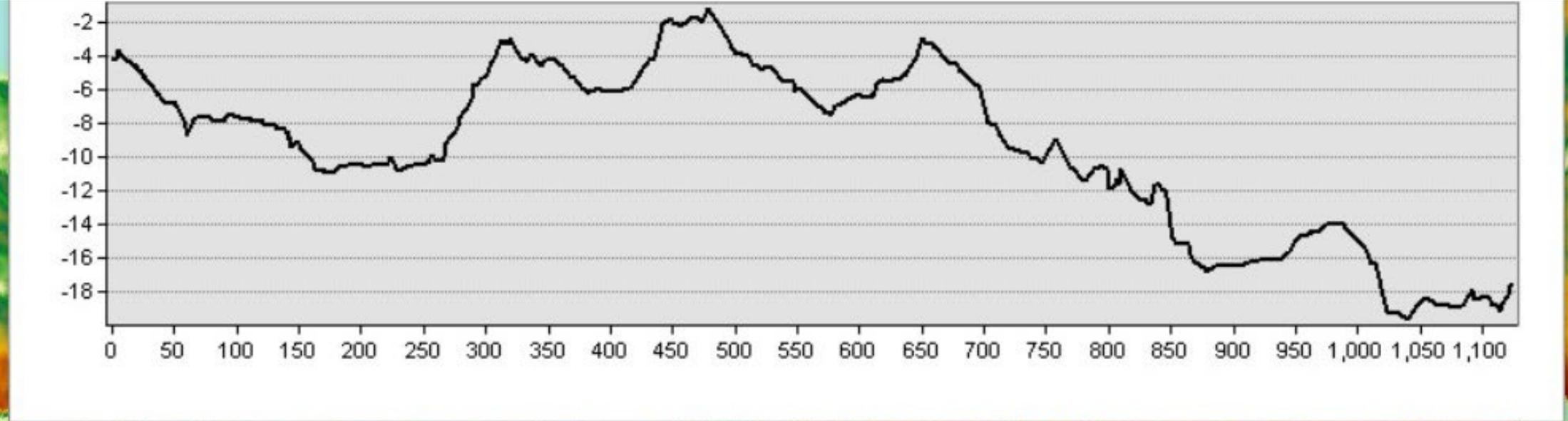


Aerial Photo of Project Area

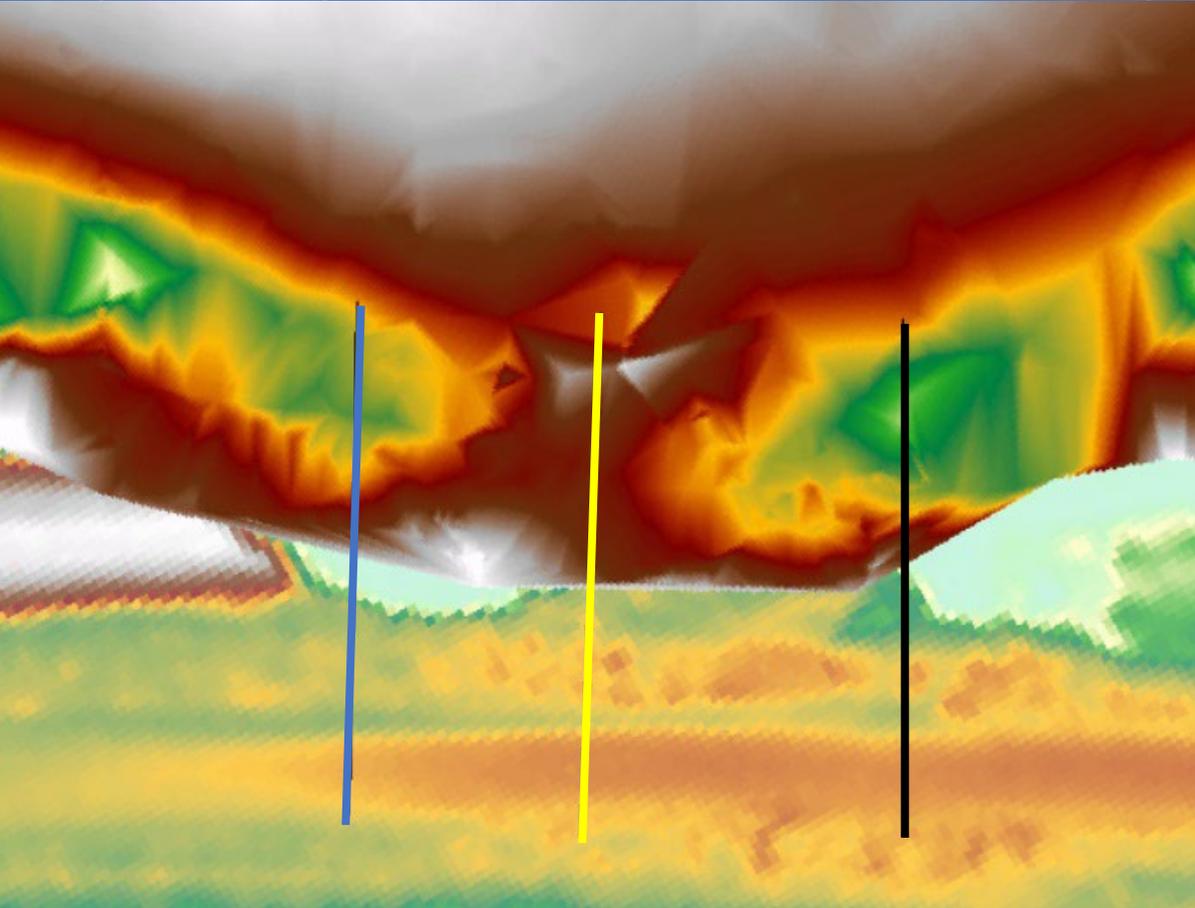
March 2, 1981



Bathymetry



Cross Sections



Timeline

- Circa 1892: Railroad grade completed, maintained for almost 100 years
- Circa 1981: Haul Road and utilities constructed
- Circa 1989: Railroad stops operating
- Circa 2011: Railroad embankment is fully breached in project area
- 1/1/2013: Port of Grays Harbor Acquires Property
- January 2013: Erosion documented at project site
- November 2018: Riparian plantings on site
- December 2018: Significant erosion on site
- 2020: Port contacts CRBFA with concerns for erosion at this site
- 2021: OCB develops Erosion Pilot Project
- 2021: Port applies for Erosion Pilot Project to explore reach scale solutions

Timeline (Continued)

- 1/7/22: Chehalis River flooding accelerates erosion at the site, significantly increasing the threat to critical and irreplaceable public infrastructure
- January 2022: County, State, and Federal governments all declare emergencies related to winter weather and flooding
- 2/14/22: Erosion Pilot Project under contract
- 2/16/22: Port asks when is emergency action warranted
- 2/16/22: Plan review reveals location of duct bank under immediate threat, Port begins exploring options for emergency project
- 2/23/22: Port meets on site with WDFW to discuss emergency options
- 3/7/22: Port meets with Grays Harbor Energy

Timeline (Continued)

- 3/8/22: Port recognizes magnitude of project cost exceeds available resources
- 3/9/22: Port engages CRBFA regarding project funding
- 3/25-3/31/22: Port engages affected utilities as potential funding partners (Grays Harbor Energy, Grays Harbor PUD)
- 3/24/22: Port meets with stakeholders and permitting agencies
- 4/7/22: Port introduces project to Chehalis Basin Board
- 4/18/22: Bathymetry data eliminates sheet pile options for emergency project
- 4/29/22: Port presents to Lower Satsop Advisory Group

Suggested Project Approach

- Construct an emergency project to protect the immediate area of the threatened utility and roadway infrastructure before the next flood season, ideally within the fish window
- Conduct reach-scale analysis (sponsored by GHCD) as envisioned by the Erosion Pilot Process, in parallel with emergency project design and construction
- Identify solutions to reach deficiencies, localized erosion over the larger project area, and mitigation for the emergency project as part of the reach-scale analysis
- Secure funding for the emergency repairs and mitigation

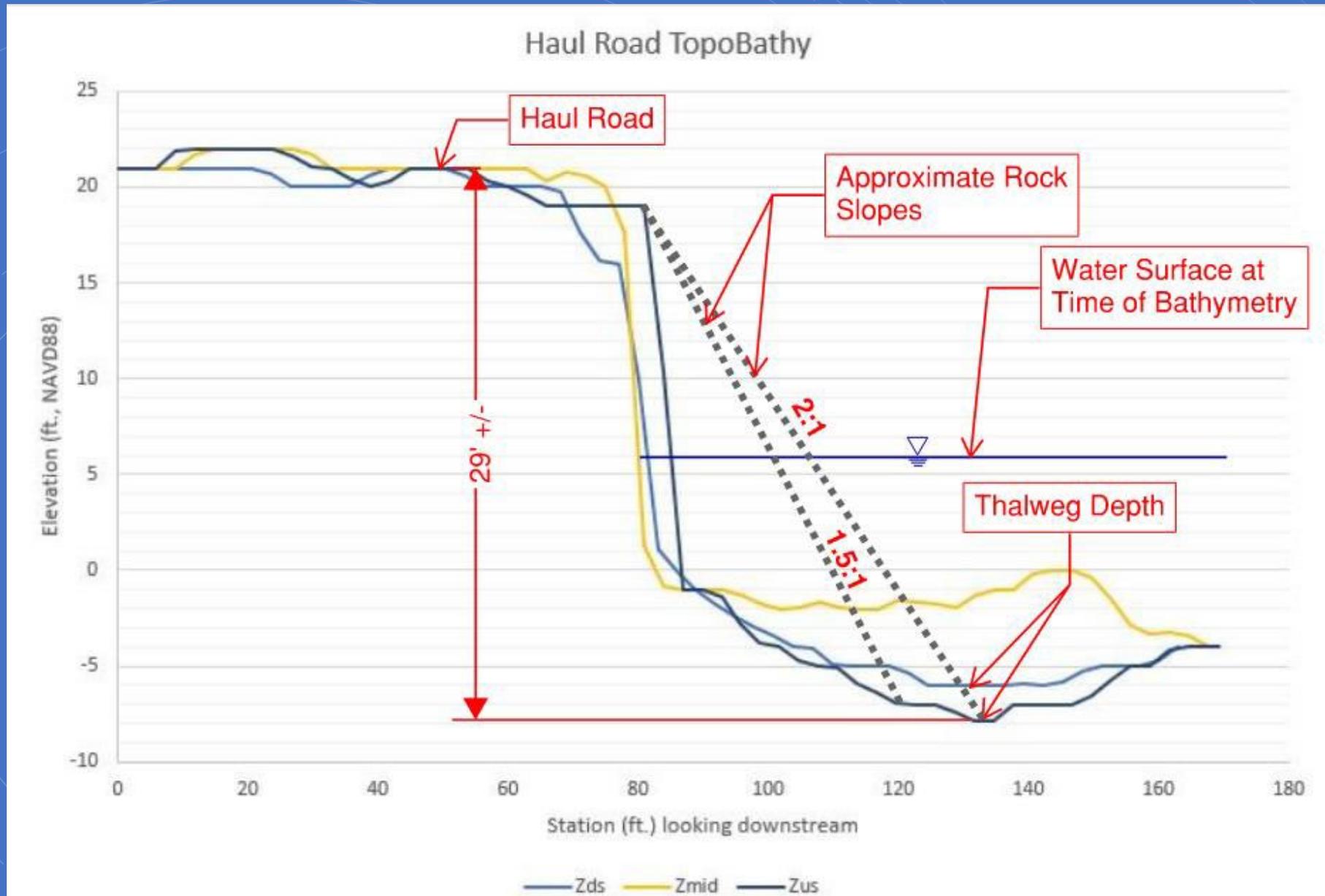
Emergency Project Options Considered

- **Relocation of Roadway and Utilities Landward**
 - Significant wetland impacts
 - Utility relocations require shutdown period(s) for the power plant
 - Susceptible to future erosion if root causes are not addressed
 - Appropriate pipe and fittings not readily available
 - Cannot be completed before next flood season
 - Most expensive option
- **Sheet Piling**
 - Requires in-water work
 - Depth well in excess of what is feasible for a sheet pile solution
 - Existing utilities would make tiebacks difficult
 - Large sheet pile not readily available
 - Cannot be completed before next flood season
 - Very costly
- **Rip Rap**
 - Requires in-water work
 - High impacts to habitat and channel migration
 - Could be constructed before next flood season
 - Lowest cost

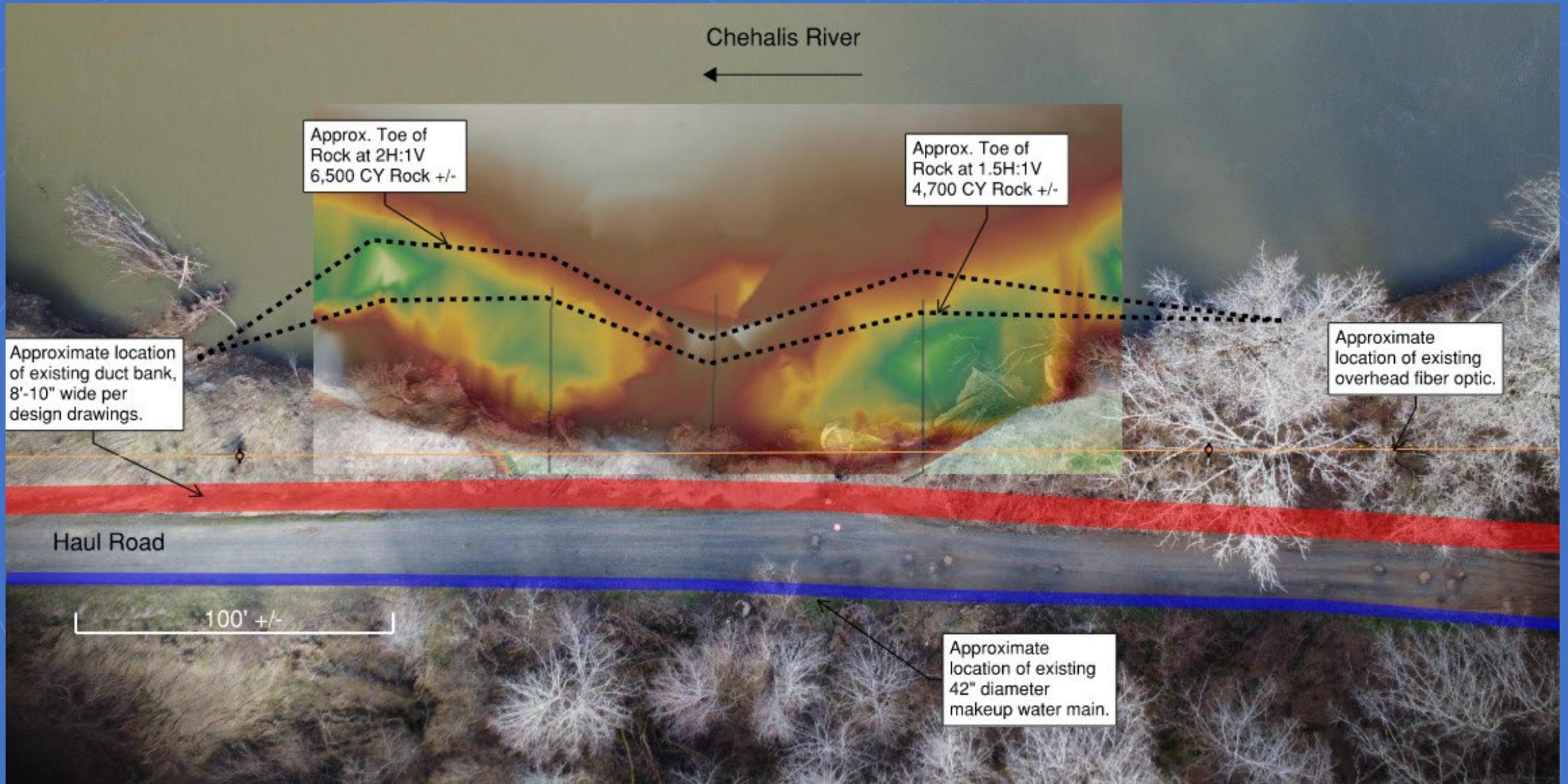
Emergency Project Concept

- Large rock is the only option identified that is constructable before next flood season and likely to successfully protect the project area with conditions present
- Slope rock at between 1.5:1 and 2:1 Horizontal : Vertical
- Consider incorporation of root wad logs in rock placement
- Consider vegetated rip rap
- Consider benching the rock to allow construction of habitat on top of the rock and/or a softer large wood solution for the upper bank

Emergency Project Concept



Emergency Project Concept



Natural Resource Considerations

- Critical areas: Wetlands above top of bank, floodplain, stream/fish & wildlife habitat conservation critical areas (need to check on CARA and any geologic hazard areas)
- Designated critical habitat for bull trout (USFWS)
- Reach utilized by juveniles and critical pass through migration area for salmon, steelhead, bull trout, and other fishes
- Shoreline designation for Chehalis River
- Cultural resources
- In-Water Work Window for Chehalis River in Grays Harbor County (Mouth to Porter Creek) to be verified:
 - i. WDFW – August 1 - August 31
 - ii. USACE – June 1 – October 31
 - iii. USFWS – Additional dates for bull trout?

Permits Required

- Federal
 - USACE Section 404 Nationwide or Individual Permit
 - NMFS and USFWS Section 7 ESA Consultation
 - DAHP Section 106
 - Ecology Coastal Zone Management Federal Consistency
 - NEPA with USACE as Lead Agency
- State
 - Ecology Section 401
 - Ecology NPDES Construction Activity (if >1 acre disturbed)
 - DNR Aquatic Use Authorization
 - WDFW Hydraulic Project Approval
 - DAHP Cultural Resources (EO 21-02)
 - Ecology Coastal Zone Management Federal Consistency

Permits Required (Continued)

- Local
 - SEPA Threshold Determination (Port as lead agency)
 - County Substantial Development or Conditional Use Permit
 - Shoreline Master Program
 - County Critical areas Protection
- **Key Question: With an immediate threat to critical public infrastructure and emergency declarations at the County, State, and Federal levels, is this project subject to emergency permitting?**

Next Steps

- Discuss suggested project approach in this meeting
- Discuss project concepts in this meeting
- Discuss permitting requirements and timelines in this meeting
- Present to OCB Board May 5
- Continue emergency project design



▼ Questions/Discussion