



# Boise Creek Restoration at City of Enumclaw Golf Course

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April 18, 2022



# Project Partners

- Russ Ladley – Puyallup Tribe Fisheries
  - Developed 30% Design in ~2009
- Jeff Parsons – Herrera Environmental Consultants
  - Final Design and Permitting (2020 CWM Grant)



# Boise Creek - Upside

- Historically – highly productive tributary to the White River in Enumclaw
  - Spring Chinook, Steelhead, Coho, Pink and Fall Chinook Salmon
- Hosts rare Spring Chinook run
  - Deemed Critical to Recovery of this ESA listed species



# Boise Creek - Downside

- Very limited riparian cover/thermal protection
- Narrow channel, high velocities, limited woody debris
- Routinely overflows the banks
- Recent high flow events have seen an increase from 30 cfs to roughly 1000 cfs
  - Bed scour and standing of eggs/fish on the golf course
- Chappel Creek Fish Passage Barrier





Highly Modified  
Channel Routing -  
Established by  
historic recreational  
and agricultural  
purposes







View West (multiple fairways). Existing Boise creek through Golf Course with limited thermal protection, riparian habitat and separation from golfer disturbances to spawning salmon.





No 10 Fairway. Existing Boise creek through Golf Course with no thermal protection, riparian habitat or separation from golfer disturbances to spawning salmon.





Portion of existing Boise creek channel through Golf Course with riprap streambank prohibiting natural geomorphic processes.





Channel scour leads to standing of eggs and fish on golf course (18<sup>th</sup> Fairway February 2022 High Flow Event)





Various Fairways  
February 2022 High  
Flow Event





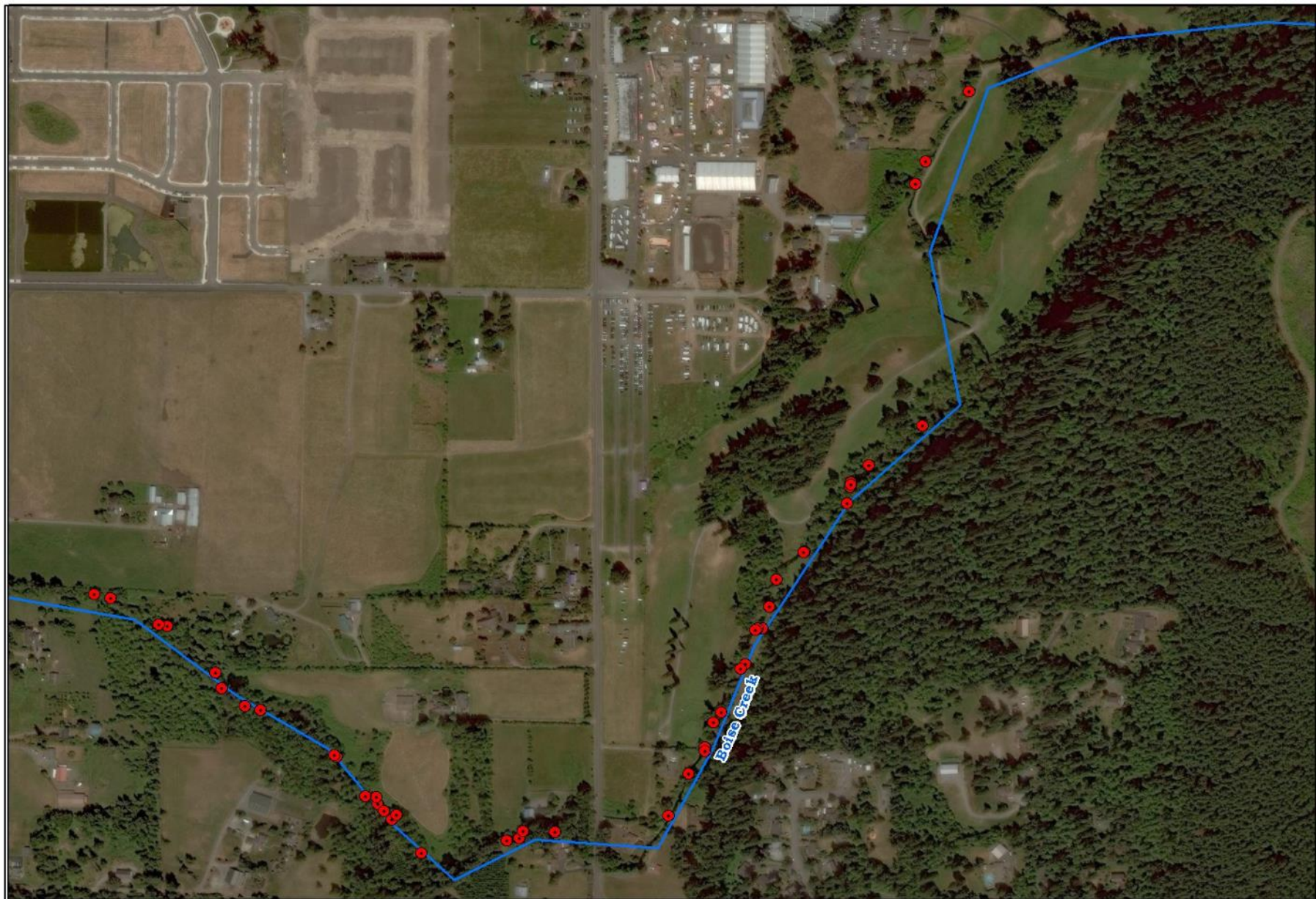
Extensive re-deposition of streambed from February 2020 flooding



Existing  
Chappel Springs  
(tributary to  
Boise Creek)  
culvert inlet at  
the golf course.



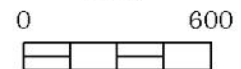




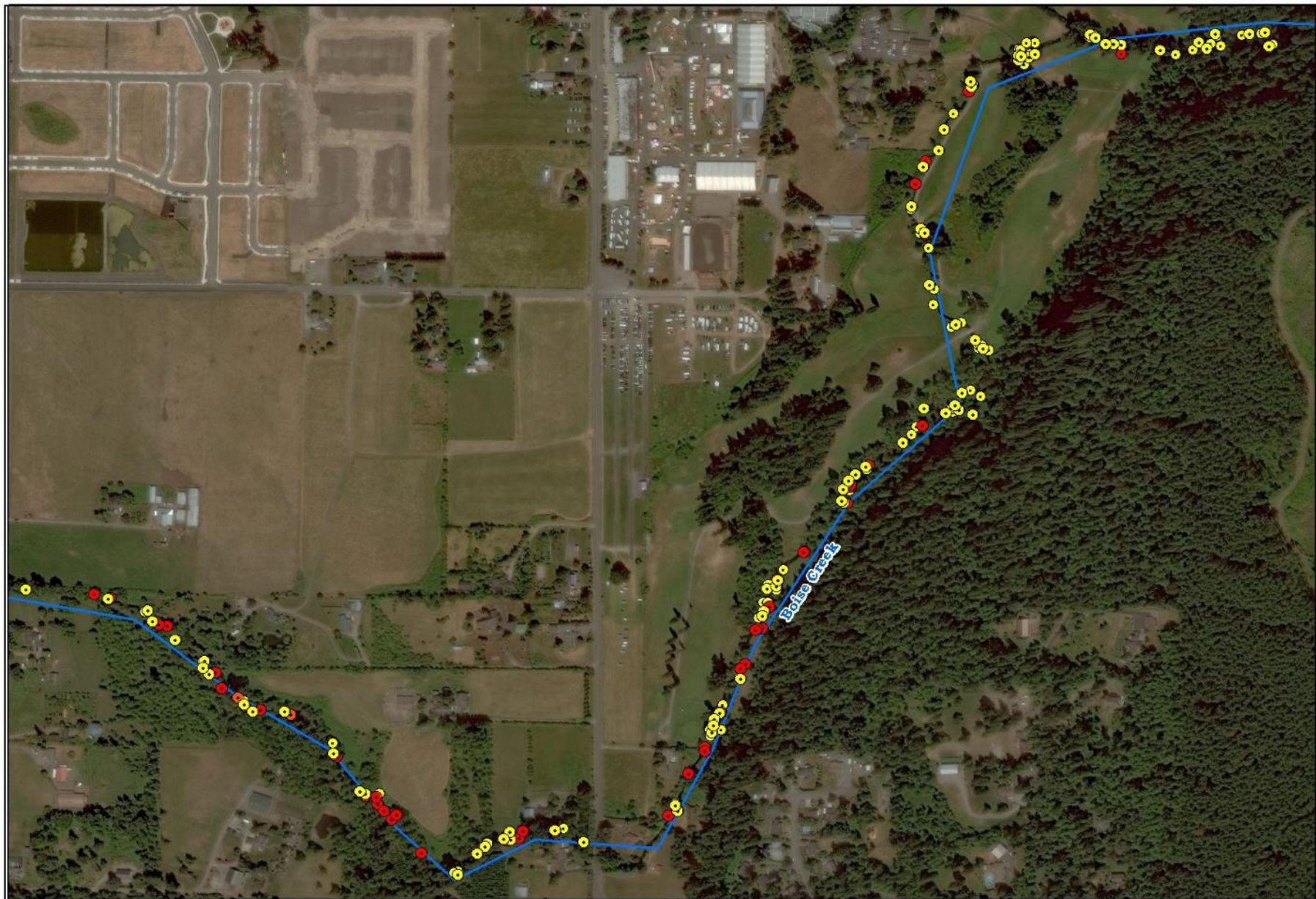
Boise Creek  
Chinook Spawning Locations (2012-2017)



Feet





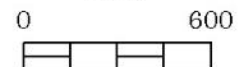


Boise Creek

- Steelhead Spawning Locations (2016-2019)
- Chinook Spawning Locations (2012-2019)



Feet

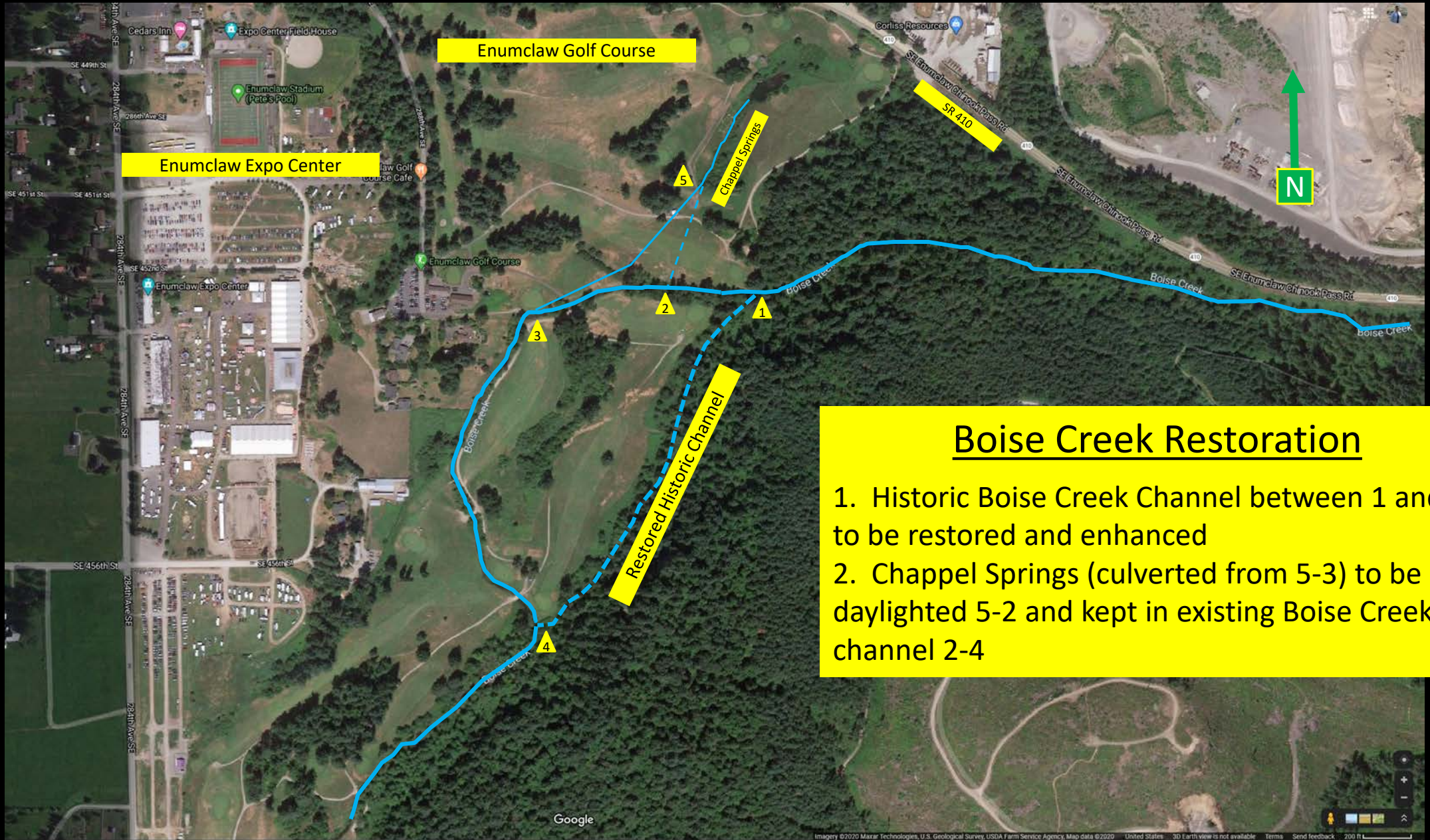


# Proposed Solution

- Restore an historical channel of Boise Creek outside the golf course field of play
  - Located at the base of a mature forested hillside
  - Provide riparian plantings along the restored channel
  - Add instream woody habitat
  - Separate from course with earthen embankment
- Daylight and restore Chappel Creek in existing channel







## Boise Creek Restoration

1. Historic Boise Creek Channel between 1 and 4 to be restored and enhanced
2. Chappel Springs (culverted from 5-3) to be daylighted 5-2 and kept in existing Boise Creek channel 2-4





View North. Stream would be relocated to the tree line on the east at the base of the cliff.





Existing large trees and natural boulder habitat features will be available to Boise Creek in the restored channel floodplain area





Northern extent of project –  
point at which creek would be  
redirected due south along base  
of steep wooded slope.



# Summary of Benefits

- Improved riparian habitat
- Improved spawning habitat
- Reduced water temperatures
- Daylighting and planting Chappel Creek
- Separating golf course activities and spawning salmon (particularly Chinook)





# Current Status

- Design is >60% complete
- All permits acquired except USACE Individual Permit
- Cultural Resources Survey Completed
- The Hunt for Funding Continues
  - ~\$785,000 acquired (2021 CWM, 2021 FCG)
- Tentatively Planning Construction in 2023





# Questions?

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Eric Palmer

Project Manager