

# Old Fort Fish Habitat Enhancement

April 7, 2022



# Meeting objective

- To provide an update on fish habitat enhancement near Old Fort.
  - Revised scope
  - What to expect
- To provide insight into our engineering stability assessment.
- To listen and respond to your questions.

# Why are we building fish habitat enhancement?

- Regulatory obligations (Fisheries Act).
- To mitigate the effects of Site C on fish and fish habitat.



# Fish Habitat work near Old Fort - timeline

- **2015:** Constructed fish habitat at damsite per Early Works Fisheries Act Authorization.
- **2016-2017:** Engaged with north bank waterfront property owners directly affected by fish habitat enhancement works.
- **2018:** Old Fort landslide. Paused north bank fish habitat enhancement work due to landslide, geotechnical risks, and partial infeasibility of originally designed offset.
- **2019:** completed south bank fish habitat work in 2019.
- **Late 2020 – present:** Revised design to smaller footprint fish habitat offset on north bank limited to the mainstem.

# Regulatory Approvals for 2022 Work

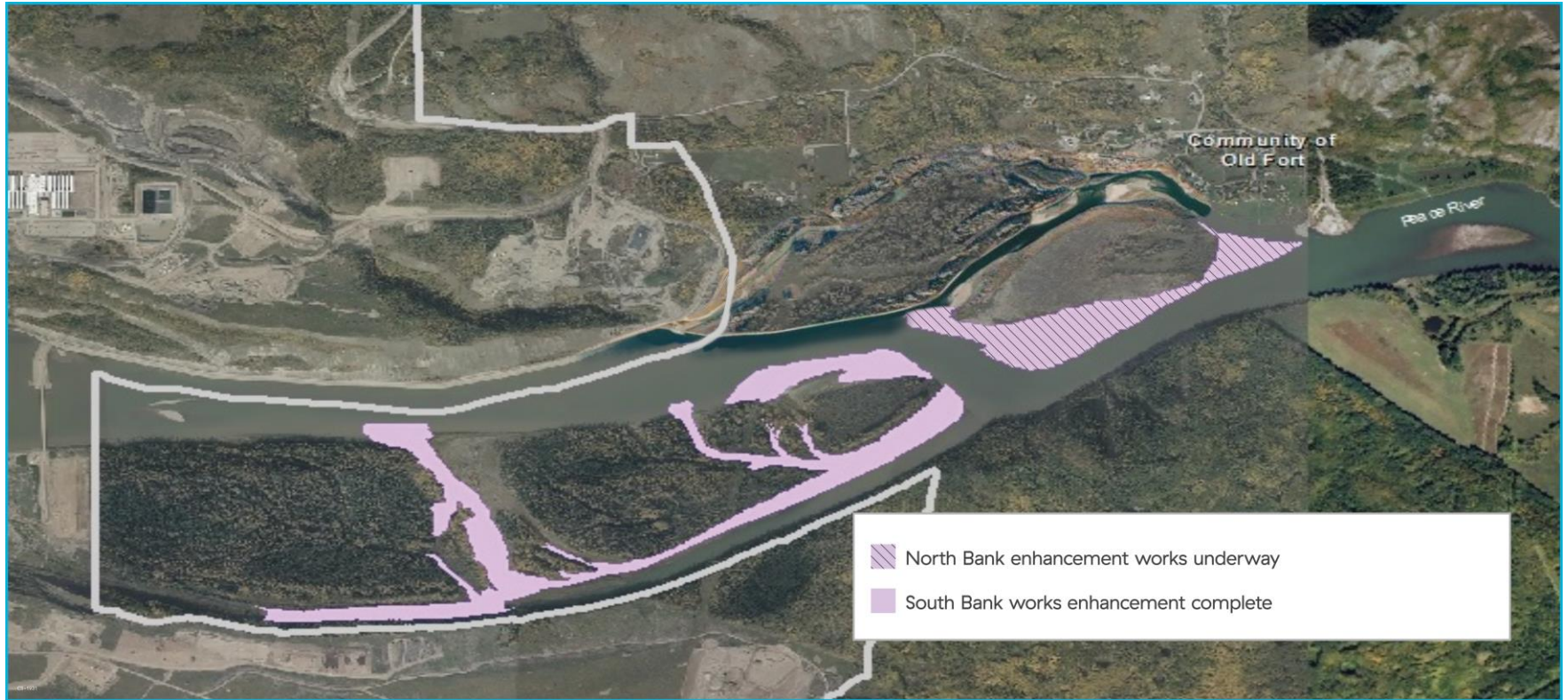
Agency	Permit/Approval	Permitted Activity	Status
Ministry of Forests	Land Act Licence of Occupation	Land tenure to carry out activities	Permit issued*
	Forest Act Occupant Licence to Cut	Clearing vegetation	Permit issued
	Conditional Water Licence	Withdrawing water for dust suppression purposes	Licence issued
	Water Sustainability Act Approval for Instream Works	Excavating in Peace River	Permit issued*
	Water Sustainability Act Approval for Instream Works	Fording equipment across back channels until bridges are constructed	Permit Issued
	Water Sustainability Act Approval for Instream Works	Constructing bridges over two backchannel crossings	Application submitted
Transport Canada	Canadian Navigable Waters Act Approval	Approval for construction of bridge over navigable backchannel	Application submitted
	Canadian Navigable Waters Act Approval	Approval for in-river excavation activities	Permit issued
Dept. of Fisheries and Oceans (DFO)	Works are required as a condition of the Project's Fisheries Act Authorization. No additional Fisheries Act Authorizations are required. BC Hydro has submitted a Notification to DFO regarding the updated design of the works in accordance with Project's FAA.		

\*Amendment information submitted to reflect updated design.

# Old scope (2016)



# New scope (2022)



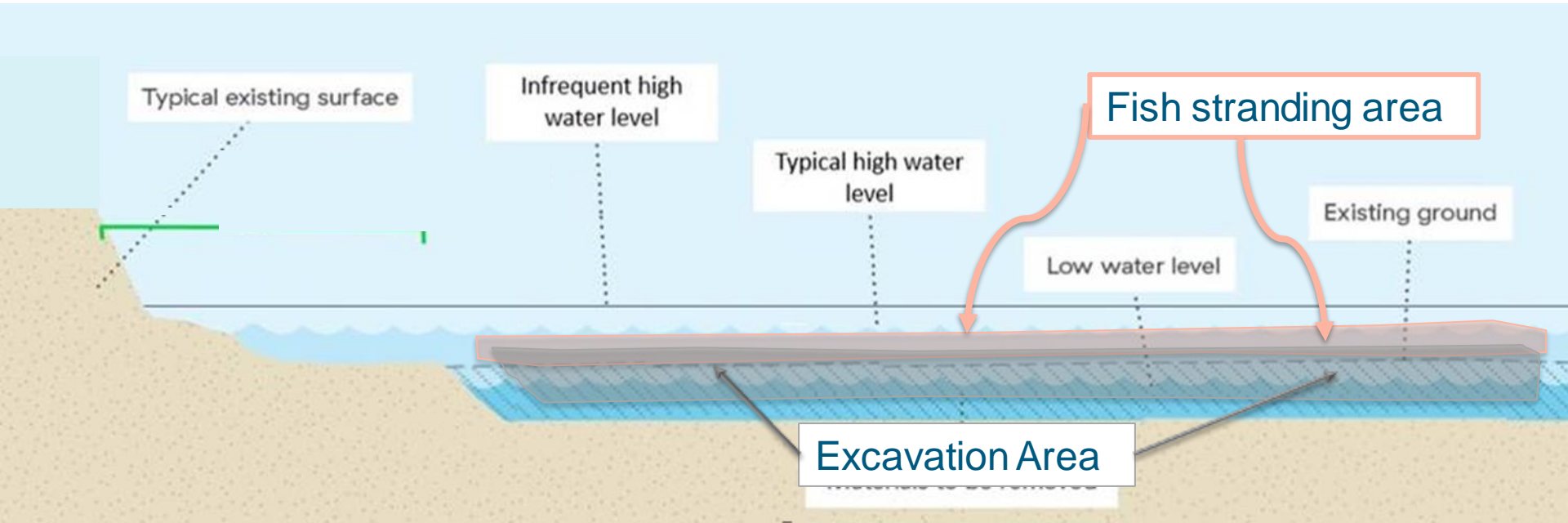
# 2022 Scope for Fish Habitat Works

- New footprint avoids side (back) channel.
- No impact to waterfront access for boaters and residents.
- No work on north side of island.
- No riparian rights needed from waterfront property owners.
- Work limited to gravel bar deepening on south, east and west sides of island.



# Why is gravel bar excavation a fish offset?

- Reduces fish stranding/mortality risk.
- Deeper habitat types are beneficial for most species.



# Geotechnical review of the proposed work

- We recognize landslides are common in the region, so slope stability reviews were conducted.
- Excavations at the base of slopes could cause instability.

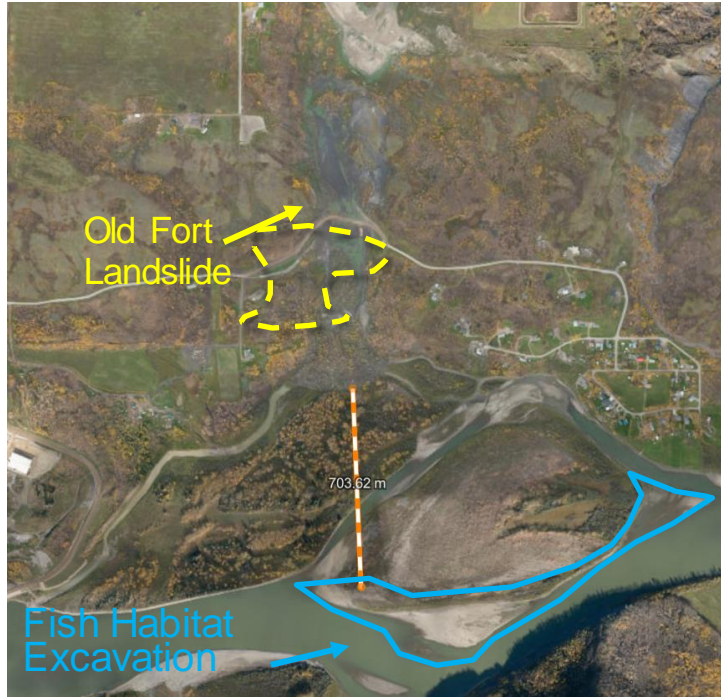


Orange areas –  
landslides from the  
2012 landslide  
inventory

# Geotechnical considerations for the slope stability review

- Slope stability reviews were completed in 2017, 2020, and 2022 (updated based on changes to the proposed work, particularly after the 2018 Old Fort Landslide).
- Key question in the reviews: would the proposed work have impacts to the stability of shoreline slopes?
- Reviews used knowledge of local landslides and geology (landslide inventory) and results from ongoing monitoring combined with the excavation plans to evaluate any concerns around the excavation.

# Downstream excavation relative to the 2018/2020 landslide



- The proposed works are 700 m from the toe of the 2018/2020 landslide.
- The excavation is no deeper than the current depth of the river.

# Slope stability review results

- The fish habitat mitigation works are not expected to negatively affect slope stability around Old Fort, including the Old Fort Landslide.
- Downstream shorelines will be monitored post-construction.



# Timeline for upcoming offset work

- **April:** Clearing and stripping access road and island stockpile site.
- **May:** Instream excavation work starts at same time as road and bridge construction.
- **June:** Completion of road construction and continuation of in-river excavation.
- **July:** Begin hauling excavated material from stockpile site to dam site.
- **August-October:** Continue excavation and hauling.
- **October-December:** Stockpile area is reclaimed, remove bridge and access road.

# What to expect

- In-river excavation during daylight hours.
- Security guards and signage for safety.
- No increase to local traffic (all hauling will take place on site).
- Equipment: feller buncher, skidder, processor, log loader, excavators, grader, dozers, rock trucks, front end loaders, highway gravel trucks.
- Hauling will occur 24/7 at certain times, similar to dam site.





# Examples of past gravel bar extraction



# Example view from Old Fort



Approximate extent of in-river excavation

# Reducing dust and noise

The Project's Environmental Protection Plan has the following mitigations:

## Air

- Spraying water on haul roads and gravel areas.
- Minimizing material drop heights.
- Minimize idling.
- Regular monitoring by BC Hydro and contractor's environmental monitors.

## Noise

- Shrouding around any generators used early or late in the day.
- Keeping a vegetative strip between the community and work site.
- Using ambient sound back-up alarms on heavy equipment.

# Air quality monitoring

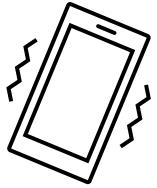
- We follow the ambient air quality objectives set out by the province.
- Site C project has five air quality stations, one of which is in Old Fort. They measure:
  - Smoke and pollen particulate matter (PM<sub>2.5</sub>)
  - Dust particulate matter (PM<sub>10</sub>)
  - Exhaust: nitrogen dioxide (NO<sub>2</sub>), Sulphur dioxide (SO<sub>2</sub>) and carbon monoxide (CO)
  - Wind speed and wind direction are also measured to determine the source of the contaminants
- Data is available online at [www.env.gov.bc.ca/epd/bcairquality/readings/find-stations-map.html](http://www.env.gov.bc.ca/epd/bcairquality/readings/find-stations-map.html)

# Noise monitoring

- If you are bothered by construction noise, please contact us.
- We will investigate and may visit your property to deploy a mobile noise monitoring station (may require power supply).
- Results will be shared with Homeowner. Mitigation implemented if possible.



# Contact us



Toll-free: 1 877 217 0777



Email: [sitec@bchydro.com](mailto:sitec@bchydro.com)

# Discussion and questions





**BC Hydro**

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