

# Virtual Information Session

## Site C Reservoir filling

May 9, 2023

# Virtual Meeting Etiquette



- Keep the conversation respectful by focusing on ideas, not the person
- Stay curious about new ideas
- Share the air time – ensure everyone gets heard
- To minimize distractions, keep yourself on “mute”
- We’ll not be recording these sessions, and ask for others not to record
- We will take notes and provide a summary report

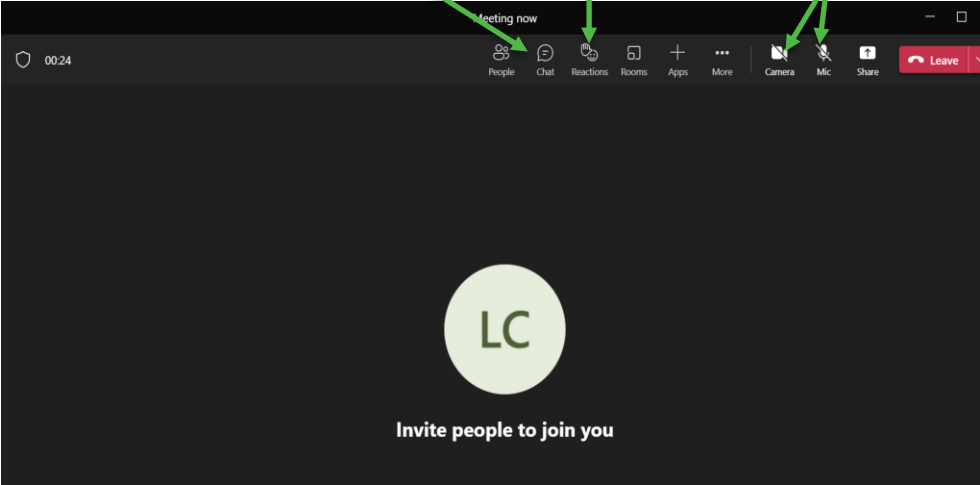
# Microsoft Teams Reminders

We'll be using a few basic tools

use chat to type a question or comment

raise your hand if you'd like to speak

turn camera and mic on/off



# Agenda

- Safety
- Site C overview
- How we fill a reservoir
  - Shoreline protection
  - Slope stability
- Boating and recreation
- Protecting the environment
- Questions and answers

**Safety is our top  
priority as we fill the  
Site C reservoir**

# Dam safety at BC Hydro

**BC Hydro has been safely operating hydro-electric dams for a century.**

- We currently manage 85 dams in 42 locations throughout B.C.
- Rigorous dam safety program based on provincial regulations, Canadian Dam Association, and international best practice.
- B.C. Emergency Management Program responds to emergencies.
- Thousands of monitors, regular inspections and audits.



# Dam safety at Site C

Built in accordance with the highest international and Canadian safety practices

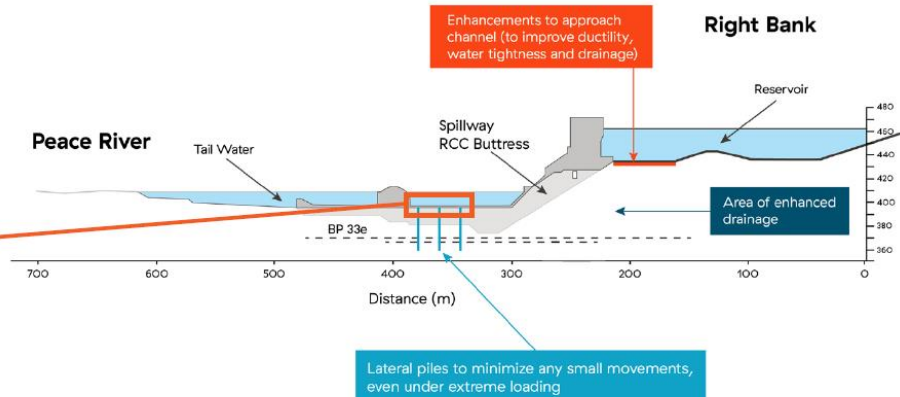


- Designed to withstand unlikely extreme earthquakes and floods
- Will have a dam safety engineer and two dam safety technologists working out of Fort St. John
- L-shaped design improves stability and seismic performance

# Right bank foundation enhancements

We're improving the stability of the right bank structures by:

- Enhancing the approach channel liner and improving drainage
- Installing 96 piles (large steel pipes filled with concrete) 46 metres into the stronger rock below





# Site C overview



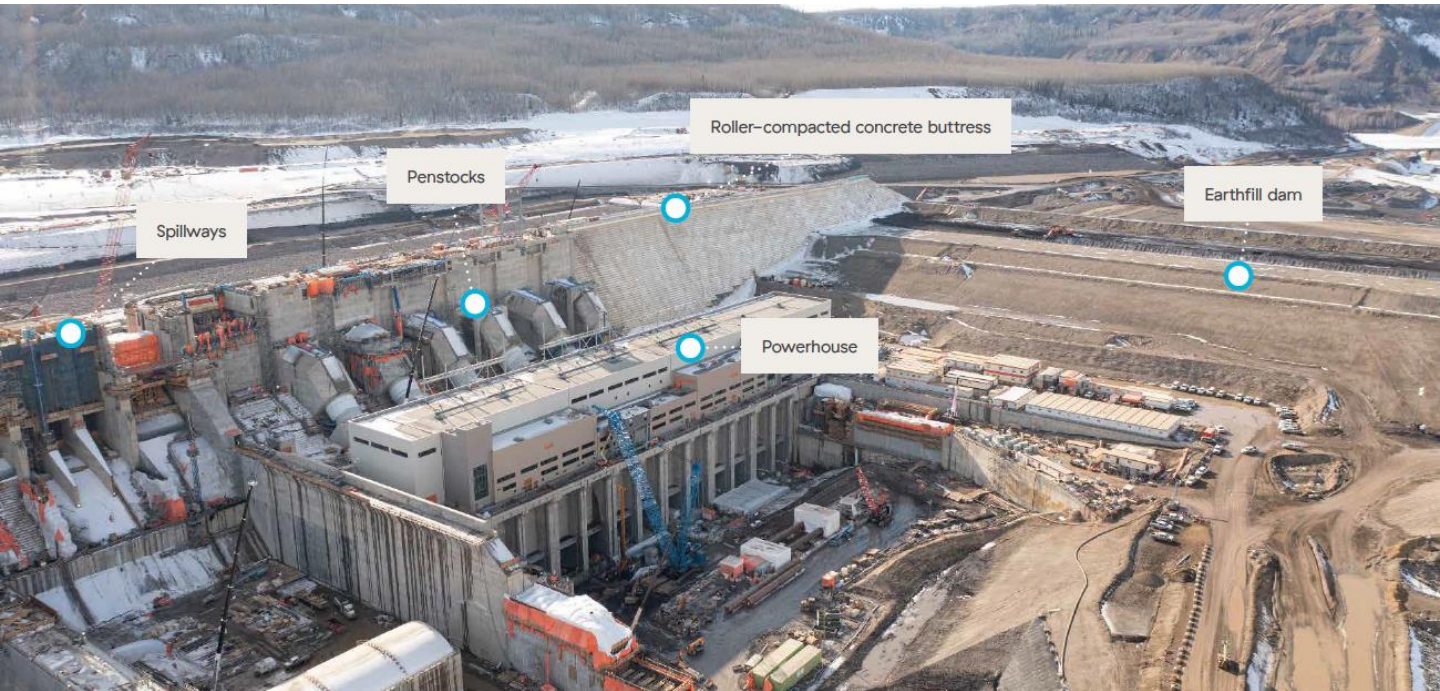
Diversion tunnel outlet

Powerhouse

Earthfill dam

Roller-compacted concrete buttress

Approach channel



Roller-compacted concrete buttress

Penstocks

Earthfill dam

Spillways

Powerhouse

# How we fill the reservoir

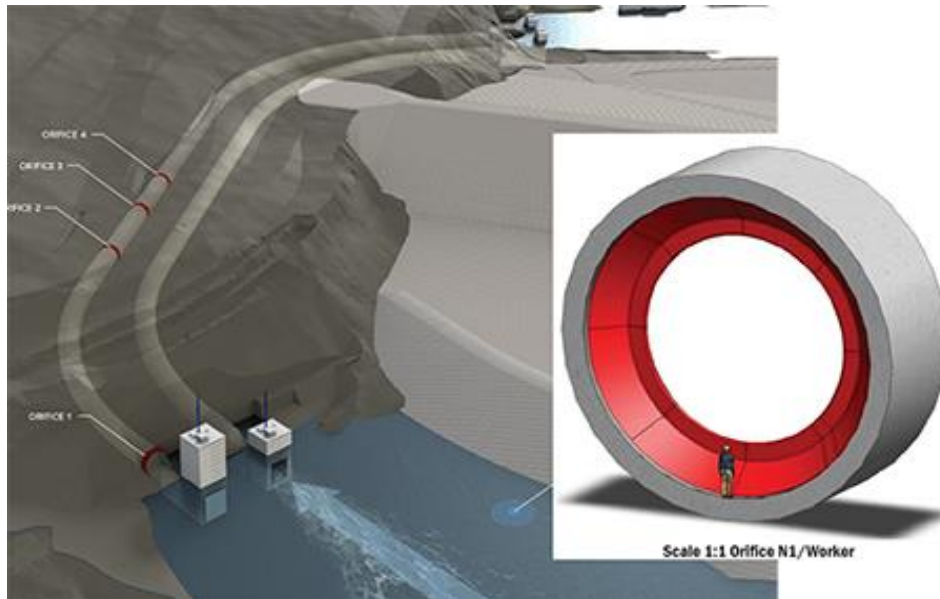


## Reservoir details

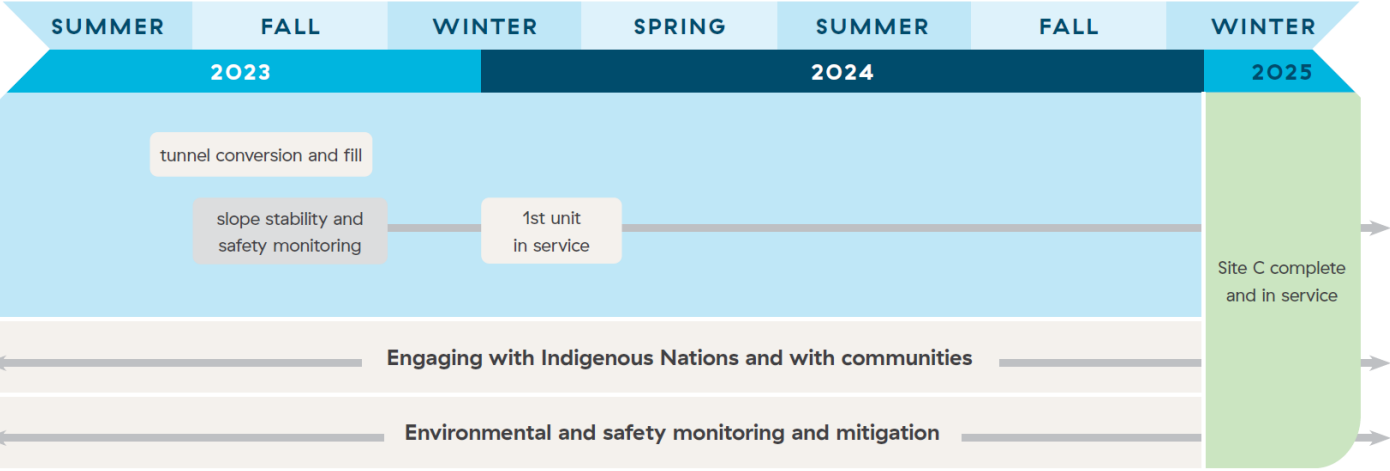
- 83 kilometres long
- 2 to 3 times (on average) current width of Peace River
- Water levels will rise 0.3 to two metres/day
- Filling will take about four months
- Reservoir depth:
  - 52 metres close to the dam
  - 36 metres at Halfway River
  - 18 metres near Hudson's Hope

# Tunnel conversion (closure)

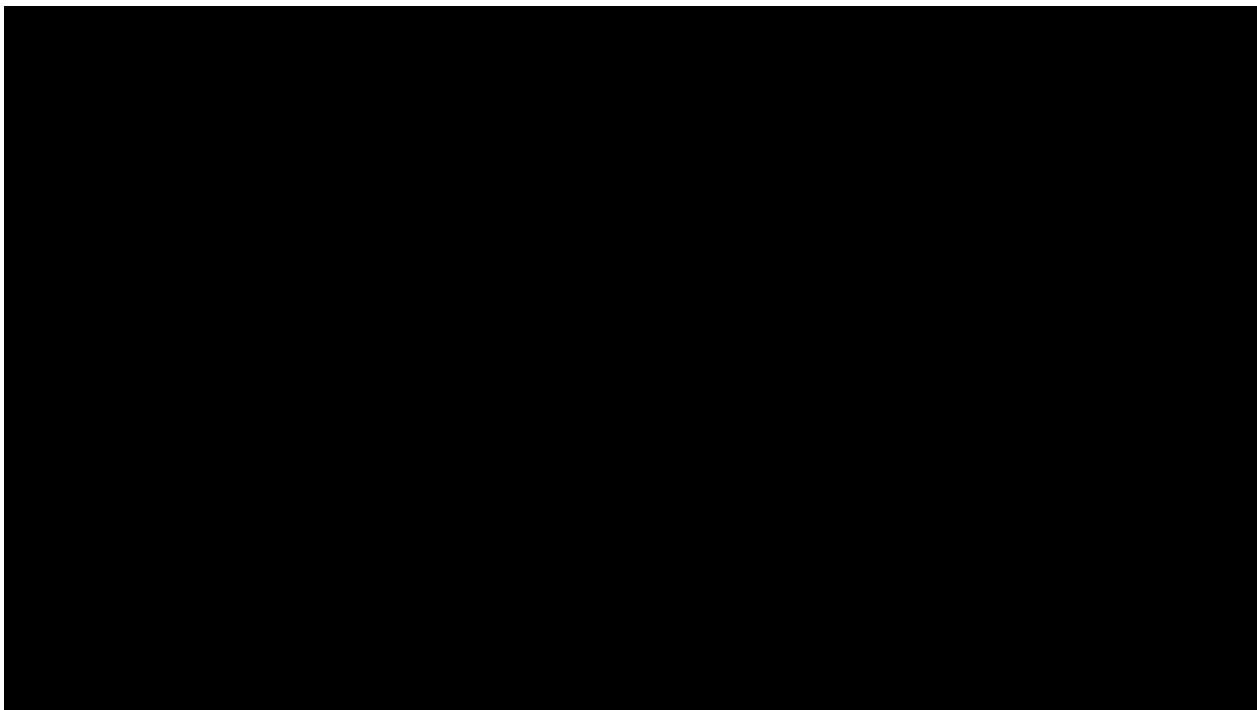
- Diversion tunnels must be closed prior to reservoir filling
- Conversion work must occur between June and October



# Timeline



# Video





# Slope stability

# Slope stability and erosion during reservoir filling

- Erosion will occur, but the impacts will vary by area.
- Steep slopes are more prone to sudden sloughing (when soil falls off the banks), which may cause waves in the reservoir.
- Please use caution, look for signs of active erosion and slope movements, and maintain a safe distance.
- BC Hydro will conduct reservoir-wide shoreline monitoring and surveillance.



Power smart

# Protecting the shoreline



## Hudson's Hope berm

- 2.6 km shoreline protection berm to reinforce shoreline and protect it from erosion

## Highway 29 berms

- Eastern Cache Creek segment
- Cache Creek bridge
- Halfway River bridge
- Eastern Lynx Creek segment
- West end of Lynx Creek bridge

# Highway 29



- 30 km of new highway
- 5 new bridges
- Safer, straighter roadway
- Wider lanes and shoulders

Power smart

# Boating and recreation

# Recreational access

For safety reasons, the reservoir will be inaccessible for at least one year after filling while we monitor for slope stability.

## This summer:

- The Halfway River boat launch will remain open via a gravel access road from Highway 29 for the 2023 season.
- The D.A. Thomas and Lynx Creek boat launches are currently inaccessible. These areas will stay closed this summer.

# D.A. Thomas recreation area – Hudson's Hope

- Small craft launch (canoes, kayaks)
- Day use area with picnic tables and washroom

# Lynx Creek boat launch



- Day use area
- Double-wide concrete boat ramp with 10-15% grade
- Safe turnaround area for trailered, motorized boats longer than five metres
- Parking for vehicles with trailers



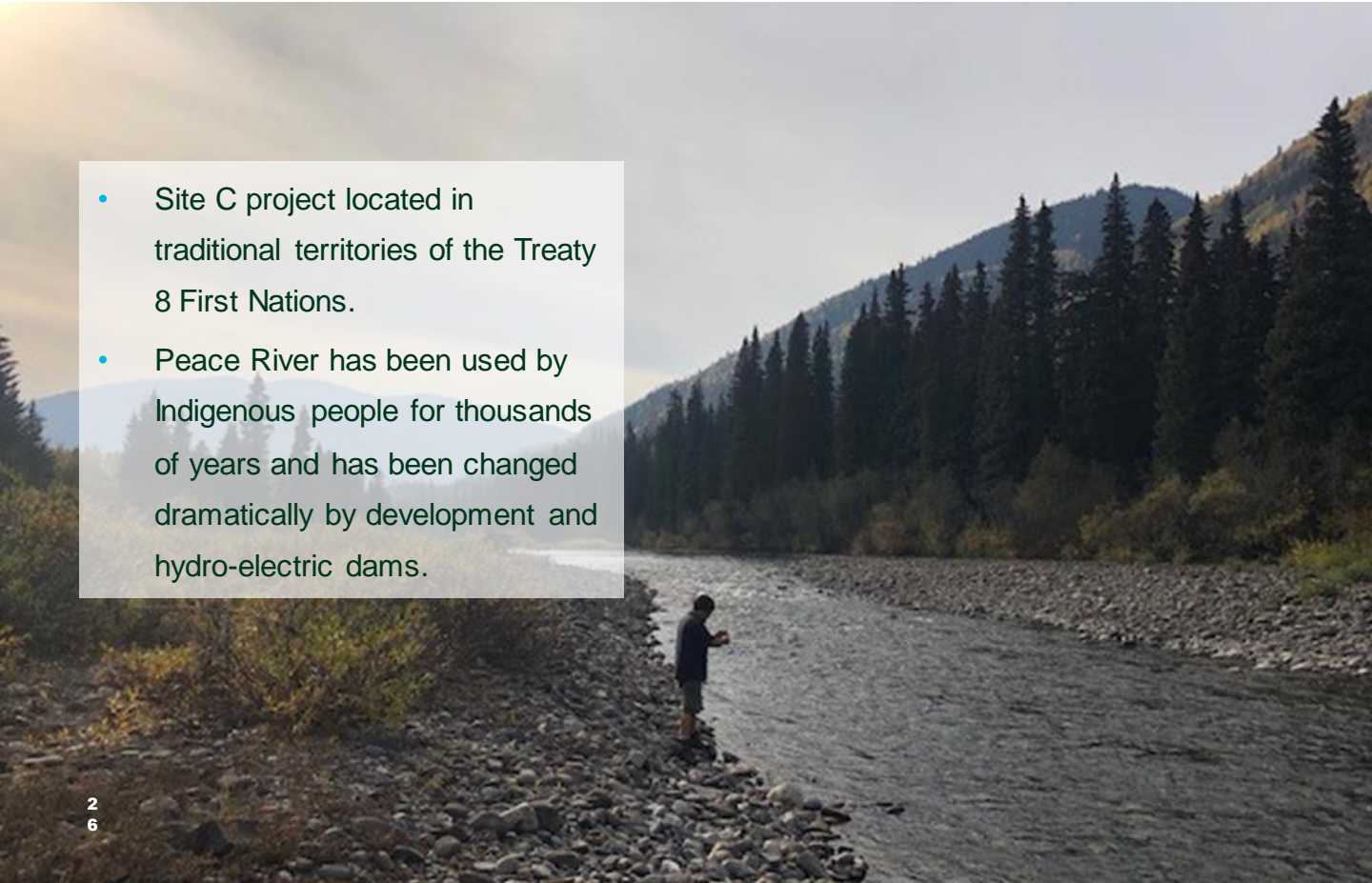
# Halfway River boat launch



- Day use area
- Double-wide concrete boat ramp with 10-15% grade
- Safe turnaround area for trailered, motorized boats longer than five metres
- Parking for vehicles with trailers

# Indigenous relations

- Site C project located in traditional territories of the Treaty 8 First Nations.
- Peace River has been used by Indigenous people for thousands of years and has been changed dramatically by development and hydro-electric dams.



# Advancing reconciliation

We're working with Indigenous communities to build long-term relationships, incorporating their interests into the project and finding ways to mitigate impacts and advance reconciliation together.

- Community engagement
- Environmental stewardship
- Economic opportunities
- Cultural recognition and commemoration



# Projects include:



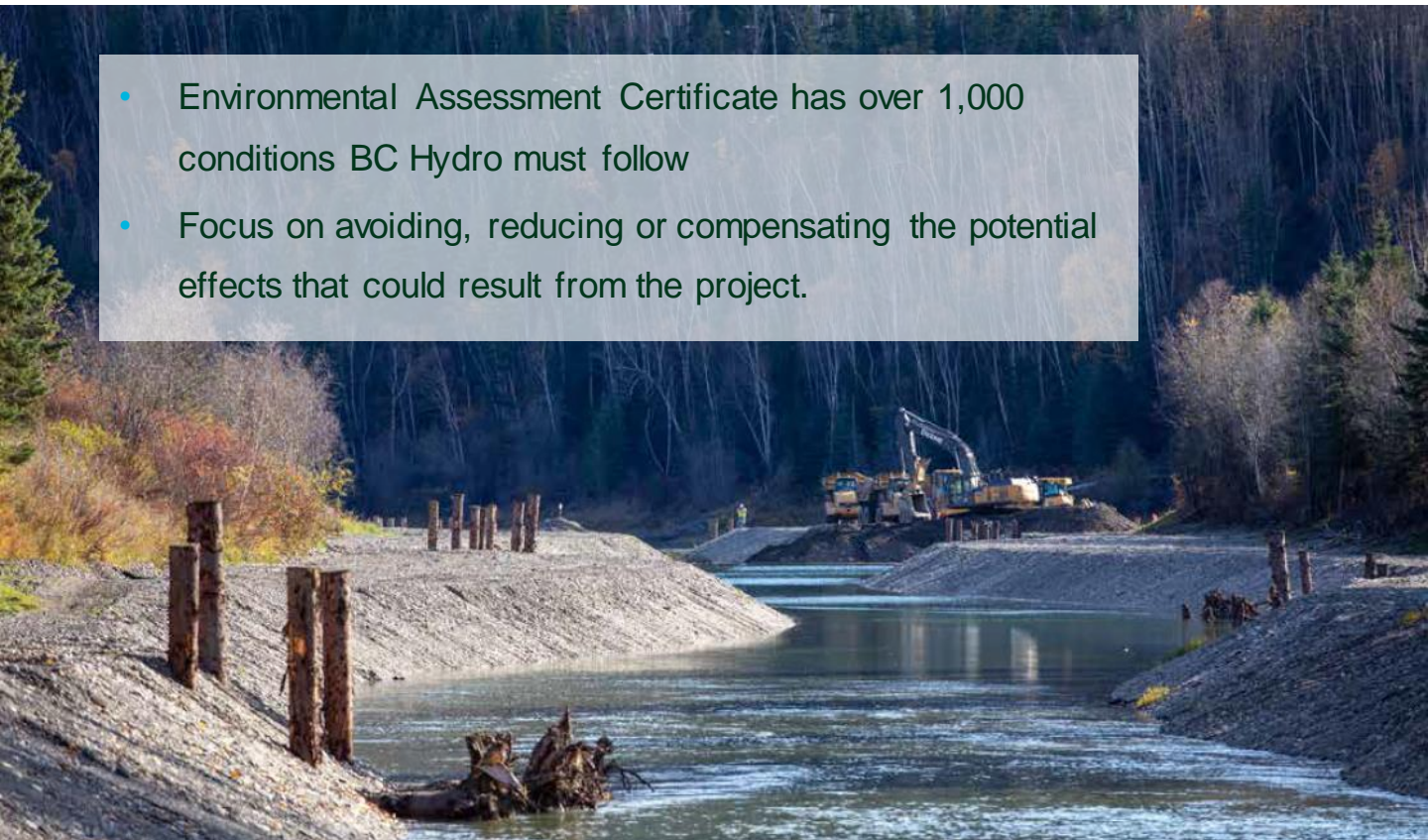
- Indigenous language crossing signage along Highway 29
- Interactive travelling exhibit
- Video project sharing Indigenous communities' history and perspectives on the Site C project
- Site C public viewpoint signage
- Boat tours to view areas of cultural significance
- Working to develop a cultural centre near Site C, a joint project between Nations

# Protecting fish, wildlife and the environment

# Protecting fish, wildlife, and the environment

Our goal is to protect the environment and reduce the environmental impacts of Site C.

- Environmental Assessment Certificate has over 1,000 conditions BC Hydro must follow
- Focus on avoiding, reducing or compensating the potential effects that could result from the project.



# Protecting fish

Upstream fish passage facility allows fish to continue migrating past the dam site.



# New/enhanced fish habitat



Maurice Creek spawning shoals



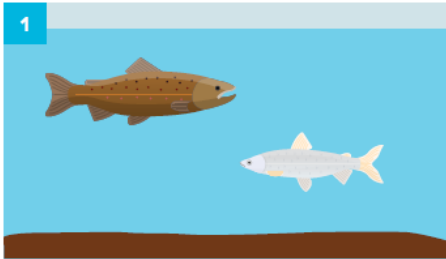
Construction of new downstream channels for fish habitat



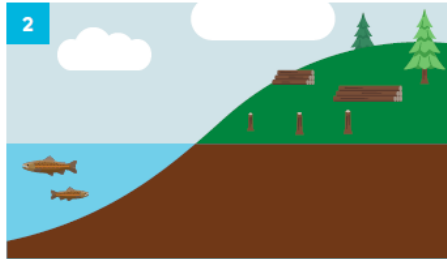
## Locations of fish and fish habitat mitigation measures on the Peace River



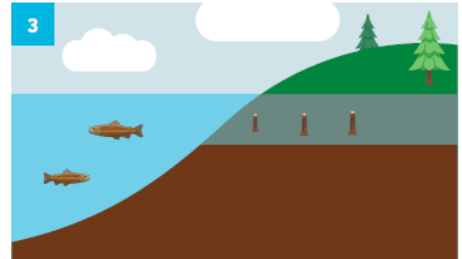
# Methylmercury in the reservoir



1  
Currently, methylmercury levels in Peace River fish are relatively low—similar to fish in other lakes and rivers in B.C.



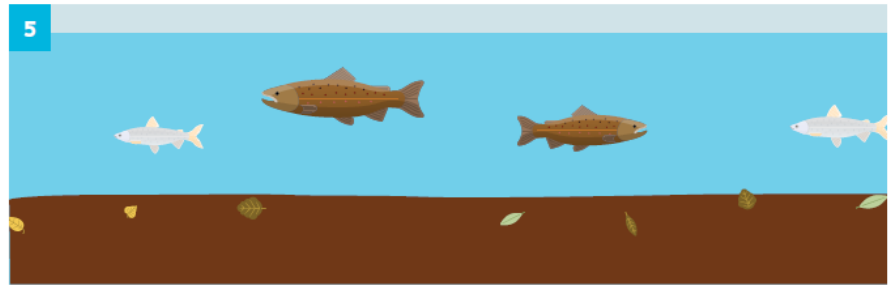
2  
We're removing most of the vegetation in the reservoir area to reduce organic material that will end up underwater.



3  
When the Site C reservoir is created, parts of the existing shoreline will be permanently covered with water.



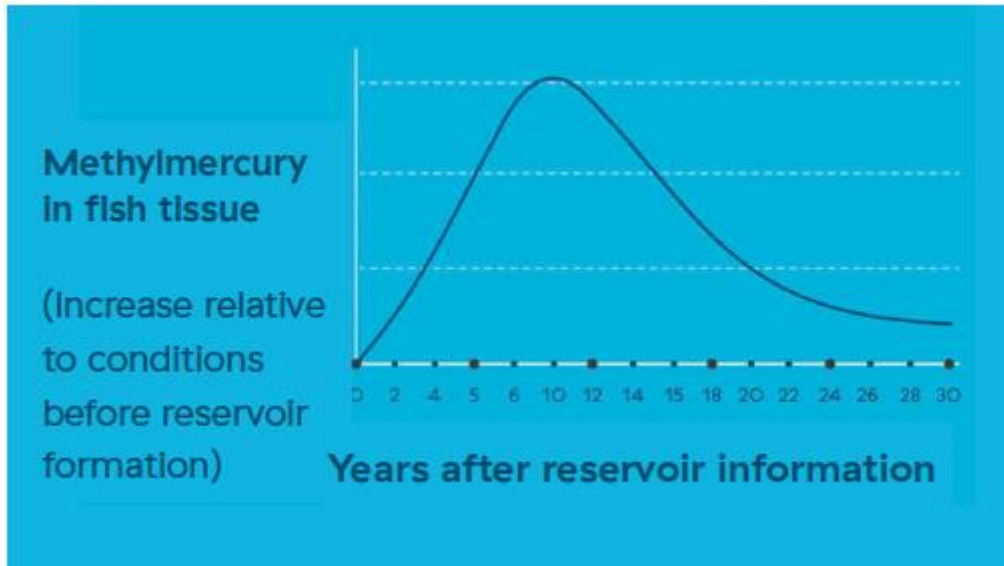
4  
Methylmercury levels in fish in the reservoir will initially rise as bacteria decompose organic material in newly



5  
Eventually, organic matter becomes scarce at the bottom of the reservoir. Methylmercury creation will slow down and levels will drop throughout the food chain.

# Methylmercury in fish

- Methylmercury in fish will temporarily increase by 3 to 4 times
- We're working with First Nations to measure methylmercury levels in fish after the reservoir is created.



# Wildlife habitat

- We've built hundreds of new habitat structures for animals that will be affected by the reservoir. These include:
  - 42 eagle nests
  - 121 bat boxes
  - 7 snake dens
  - 88 fisher dens
  - 96 nest boxes for birds
  - 70 woody debris piles for fishers



Bat boxes



Eagle nest platform

# Wetland construction/restoration

- Partnering with Ducks Unlimited to restore and build wetland habitat
- 700 hectares of wetland restoration



# Reclamation and restoration

- After construction ends, we will restore the area to its natural state
- Thousands of native species being planted



# Questions

