John Hart Dam Seismic Upgrade Project

Community Construction Report #3:

Early Site Works

March-April 2023

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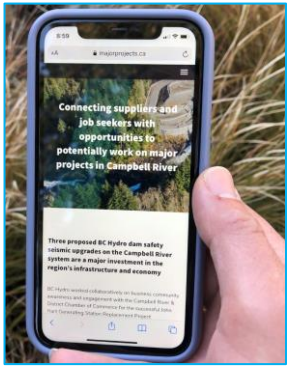
Project Status

- Ongoing: Early site works that include new construction laydown areas, a new non-public boat ramp into John Hart Reservoir, and power line and fibre optic relocations. Pages 4 to 20 cover off the site activities from March to April.
- There were about 30-35 people working at the site. No lost time accidents to date.
- BC Hydro's Board of Directors have provided approval for the project to proceed to construction phase, to begin seismically upgrading the dam beginning in July 2023, subject to the conclusion of the BC Utilities Commission process this spring.

Photo shows the double silt curtain within the John Hart Reservoir for the boat ramp construction.

Project Schedule

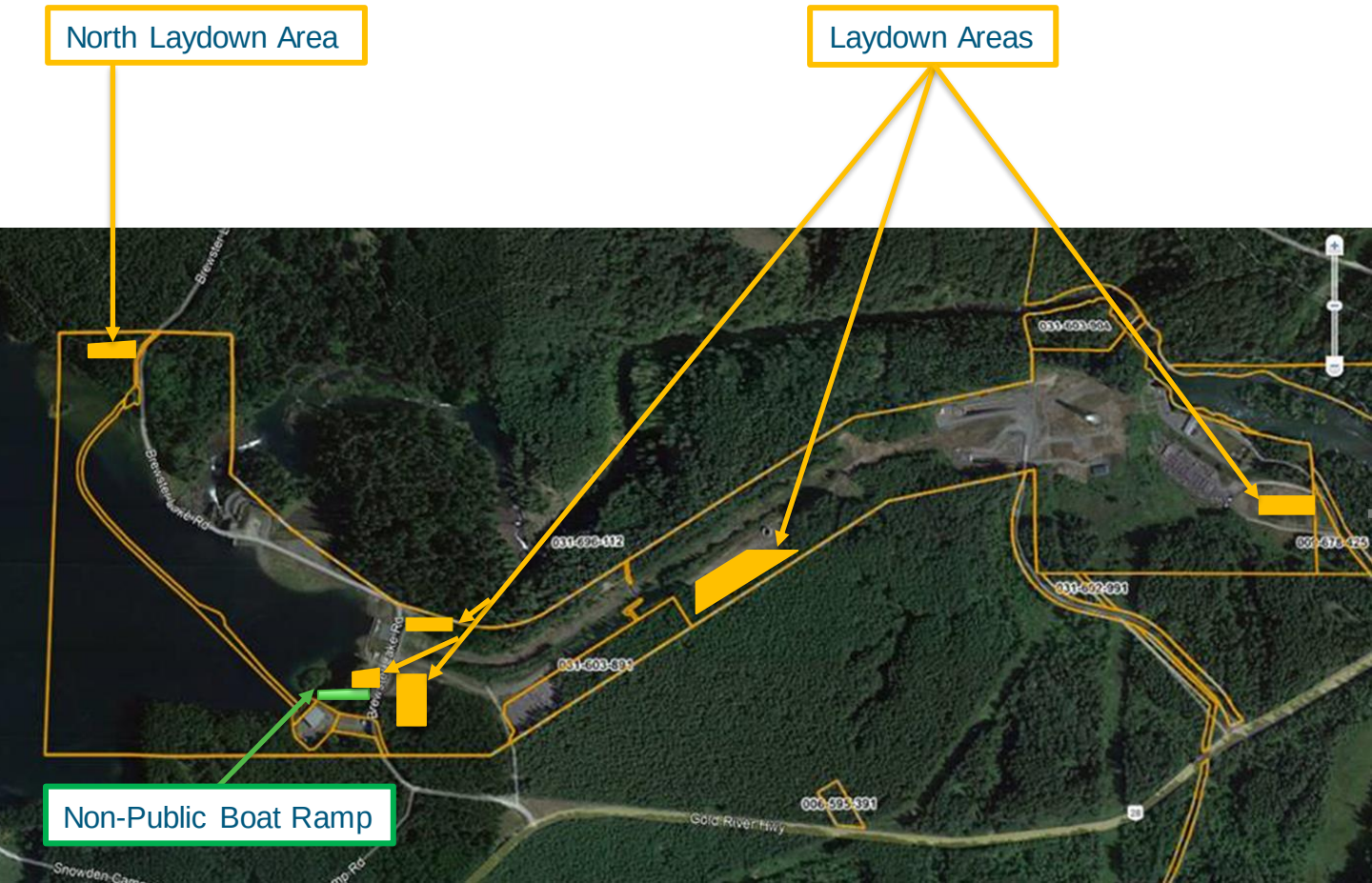
- To June 2023: Continue work on early site preparation works.
- May 2023: Completion of BC Utilities Commission regulatory process.
- Spring 2023: Anticipate an amended Park Use Permit from BC Parks.
- June 2023: Anticipate a Fisheries Act Authorization for the project from Fisheries and Oceans Canada.
- July 2023: Begin project construction of civil works.
- July 2023: Begin the approximate six-year road closure across the John Hart Dam.



More information at www.majorprojects.ca

An early March view of the downstream side of the John Hart Dam.

Early Site Works Construction – John Hart Site Map



Early Site Works Construction Photos

A double silt curtain was deployed in advance of the boat ramp construction. Several floating rafts contain water quality monitoring equipment. The City of Campbell River's domestic water intake is in the immediate vicinity of this work area.

View in early March of the planned boat ramp area.

Early Site Works Construction Photos

Environmental monitors found and relocated 147 emerging salamanders from the boat ramp construction area. This was completed in advance of the main construction work. Please see page 24 for more information on the project considerations for the salamanders, including what types of salamanders were found. A pond area shown below was protected from the work zone.

Insert photo: A Northwest Salamander.

A site sign was used for amphibian gee-trapping, placed under it, for relocation.

Work to enable the creation of a boat ramp. The ramp will be used for operational purposes and for reservoir water quality monitoring during project construction.

Moving rock into the John Hart Reservoir to form a crane pad to provide for the installation of steel piles for the boat dock.

The double silt curtain around the boat ramp work zone. The insert photo shows the contained water turbidity with the rest of the reservoir being clear.

Early Site Works Construction Photos

Culvert work beside the Brewster Lake Road to assist with good site drainage, with access to the new boat ramp on the right. The boulders in the foreground are for the boat ramp.

Early Site Works Construction Photos

A large crane getting ready to drive in the piles beside the boat ramp.

Continued work on the boat ramp.

Early Site Works Construction Photos

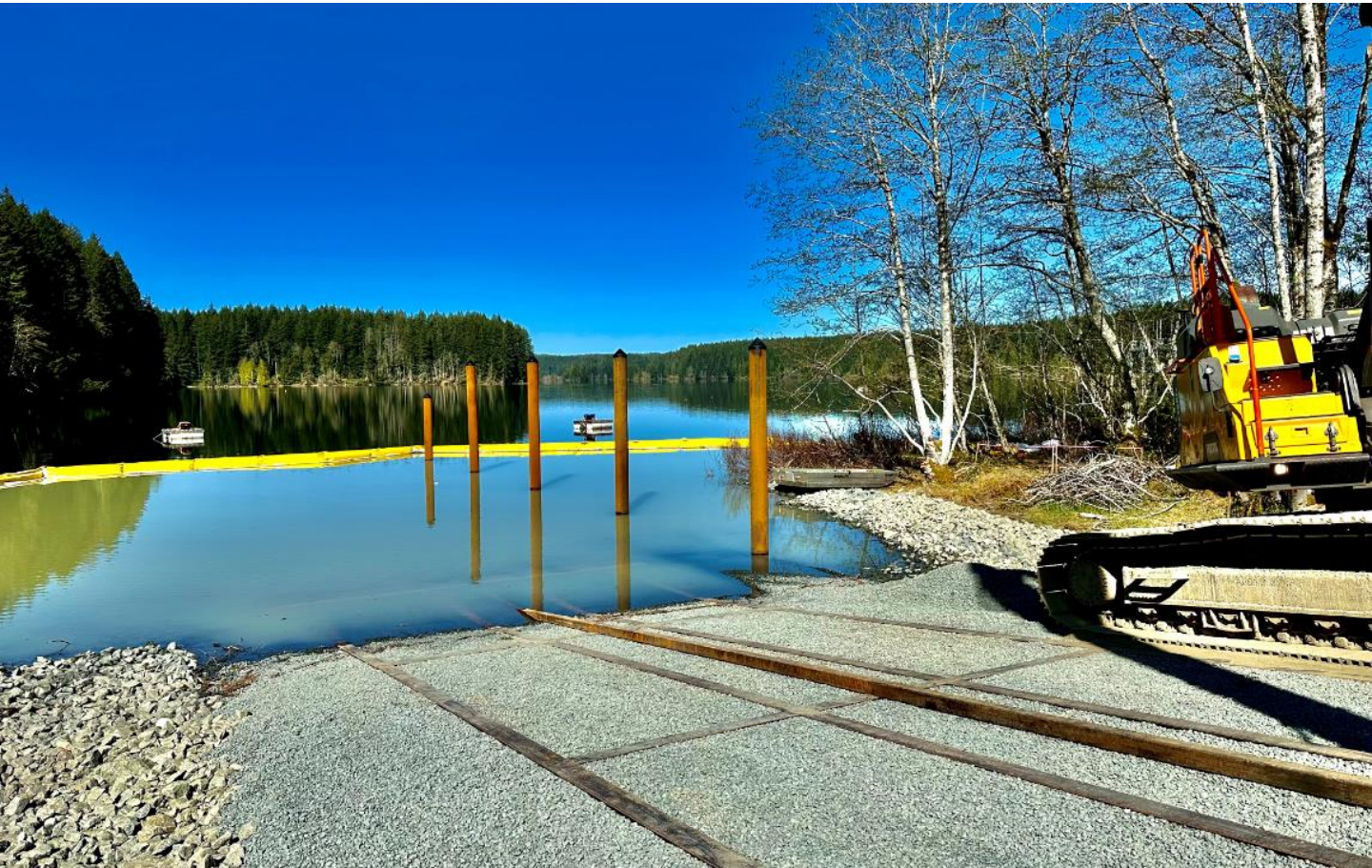
This shows the five steel piles in place, and capped, for the floating dock, and the beginning of the removal of the crane pad. Pipes and pumps take out the turbid water within the contained work area and replace it with clean water.

Early Site Works Construction Photos

The excavator had surveying equipment on the bucket to detect the proper fill and final slope of the reservoir bottom for the boat ramp.

Early Site Works Construction Photos

The boat ramp nearing completion.



Early Site Works Construction Photos

The concrete slab placement for the boat ramp. All in-water constructions work were completed by April 30. The silt curtains will be removed in May after the turbidity settles.

Early Site Works Construction Photos

View across to the North Earthfill Dam and the completed tree removal work in February.

Early Site Works Construction Photos

A view from the recreational parking lot towards the John Hart Dam and the completed north laydown area. The berm at the far side of the laydown area near the reservoir is in place to protect the nearby riparian area. The laydown area also slopes away from the reservoir.

Early Site Works Construction Photos

A view from the Millennium Trail of the old woodstave penstock corridor.

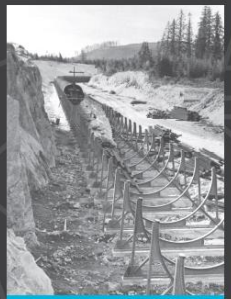
Early Site Works Construction Photos

A new interpretive sign was installed beside the pedestrian bridge that goes across the old woodstave penstock corridor. A duplicate sign was also placed beside the Millennium Trail. The signs, in addition to the site safety signage, help inform the public about the site and the planned project activities.

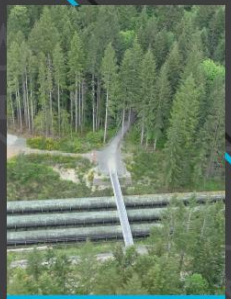
John Hart Dam Seismic Upgrade Project

What was here before?

The trench area below was not an old railway line or a water channel. This was once the location of three woodstave hydroelectric penstocks that were 3.66–metres in diameter and delivered water 1.1 km of the 1.8 km distance from the John Hart Dam to the old generating station. Steel was a scarce commodity in the 1940s and since the ground elevation here is flat with low water pressure inside the penstocks, wood (old–growth fir) was used as it was readily available and an economic alternative. Where the elevation drops to high water pressure down to the generating station for the last 700 metres, steel was used. The first penstock was commissioned in 1947, the second in 1949 and the last penstock was commissioned in 1953. The power generated from the Campbell River was a big economic stimulus for the region. Each of the three penstocks provided water to two turbines/generators within the old generating station. Each penstock could carry about 40 cubic metres per second of water, or enough flow to fill an Olympic–sized swimming pool in about one minute. The outside of the wooden penstocks were treated with creosote as a wood preservative to extend their service life. The penstocks were expected to last about 40 years though actually lasted about 70 years.



The first woodstave penstock being built in September 1947

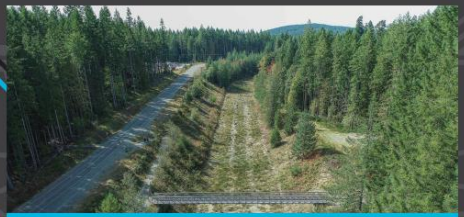


View of the pedestrian crossing over the old woodstave penstocks

What did it look like prior to 2023?

The wooden penstocks were removed and the site remediated in 2019 as part of the John Hart Generating Station Replacement Project. The wooden penstocks and the soil directly beneath them were contaminated with creosote and required proper removal and disposal. The water flow now moves through a new underground tunnel and generating station. The capital project drivers were worker and public safety with a greater resistance to earthquakes, reliability of electricity generation with a new generating station, and the environment by protecting downstream fish habitat with reliable water flows. The new tunnel is over 8 metres–in–diameter and is about 80–100 metres below this sign location.

Penstock removal work in March 2019



The old penstock corridor in September 2021

What is happening in 2023 to 2025, and what will it look like in the future?

BC Hydro is seismically upgrading the mostly earthfill dam, built in the 1940s, from 2023 through 2029. To improve the dam's stability, some loose soils will be removed from the reservoir just upstream of the dam, as well as some other areas, and will be placed within the old penstock trench to largely fill it in. This means the pedestrian bridge that crosses the area will be removed and become a land–based trail. Once all the materials are placed within the corridor trench it will be planted with vegetation so the former John Hart facility lands better fit in with the surrounding Elk Falls Provincial Park.

Please obey the safety signage and notices, and our flaggers, during the construction process. Thank you for your patience.

We encourage you to visit the Campbell River Hydroelectric Facilities Discovery Centre to learn more about this work, the hydroelectric watershed, and general information. Free admission.
We are powered by water.

Construction activity in January 2023 beside the pedestrian crossing

Inside view of the Discovery Centre

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People Profile – Ivan Dick

About Ivan

Background:
Ivan has worked as a fisherman and as a silviculture worker in the bush for around 10 years. He recently finished heavy equipment operator school at Vancouver Island University and looks forward to being a diverse operator who can run any piece of equipment.

Home:
Ivan is from the Wei Wai Kum territory.

Hobbies:
Ivan enjoys spending time camping with his family. Golfing and playing slo-pitch have always been some of his favorite activities.

Project Responsibility:
Ivan works for a project subcontractor, Roga Group, and his work entails daily safety checks for all equipment being operated. He operates the packer, rock truck, bulldozer and excavator.

“As an indigenous person I feel gratified to be working so close to home at John Hart Dam project, and also to be a part of a big project with a First Nations company.”

People Profile – Aaron “Odie” McCoy

About Aaron

Background:

Before working at the John Hart site, Aaron has had many years of experience working as a commercial fisherman. When not working on the water, he was working on his electrical apprenticeship. Over the years he says he’s been quite fortunate to work in silviculture and construction.

Home:

Aaron grew up on the We Wai Kai Cape Mudge lands, on Quadra Island, until he was 30 years old, and then moved to Campbell River.

Hobbies:

When there is downtime Aaron enjoys hunting and fishing. When the weather is nice, he may be seen on his Harley enjoying the open road.

Project Responsibility:

Aaron works as a lead hand, for subcontractor Roga Group, on the John Hart Dam project. He has many responsibilities on the project, from sourcing materials to working side by side with co-workers, to maintaining safety and environmental objectives around equipment. “Get ‘er done safely.”

Construction Point of Interest

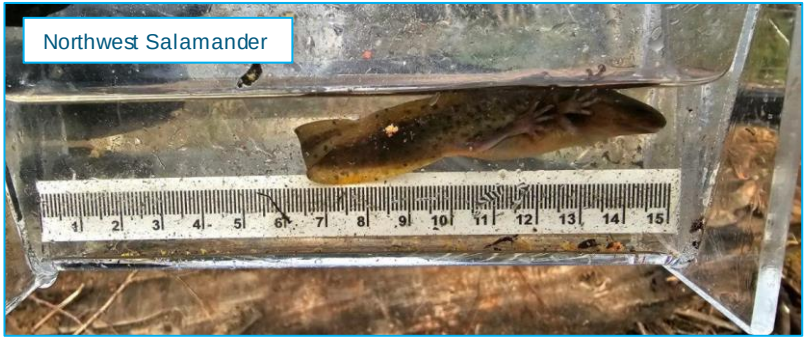
Recovery of 147 emerging newts and salamanders at the boat ramp work location.

It was known how valuable the habitat was beside the John Hart Reservoir near the boat ramp work area, so extra effort was made to reduce the impact footprint and to isolate the work area. This also included maintaining a water level in the area outside the work footprint. Efforts were put towards augmenting and improving the remaining wetland area through placement of large woody debris and by creating additional pond habitat.

With the warming weather and emerging amphibians, we had visual surveys and sweeps, inspection of organic leaf litter and branches before removal, and gee-trapping with bait. A total of 147 amphibians were found:

- Northwest Salamanders (122), Rough-skinned Newt (16), and Long-toed Salamander (9).


Rough-Skinned Newt


Northwest Salamander


Northwest Salamander