

Decommissioning And Removal Of The Old John Hart Generating Station Facilities

**Community Update:
January-March 2019**

Report #1

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Decommissioning Status

To date:

- Old John Hart powerhouse cleaned/prepped for demolition;
- Dismantling the first of six old generators;
- Old wooden bridge at Brewster Lake Road removed;
- Preparation for removal of penstocks, including environmental works, lead and asbestos abatement;
- Woodstave penstock removal begins – roughly 2/3 complete; and
- Steel penstock removal begins – roughly 1/4 complete.

April to May 2019

- Penstock – wood and steel – removal completed;
- Dismantling of turbine/generators and powerhouse continues; and
- The two Surge Towers are removed (one will remain in place after the project's completion).

June to August 2019

- Old powerhouse removal is complete;
- Restoration and planting along penstock corridor;
- Canyon View Trail access restored near the river; and
- Clean up and demobilization.

71-year-old John Hart penstocks to be removed

They were supposed to last about 40 years. Instead, they lasted about 71 years.

With their service now complete as of last fall, the three, 3.66 metre in diameter and 1.1 km long woodstave penstocks (pictured) that delivered water to the decommissioned John Hart Generating Station will begin to be removed this week.

“They have always been of great interest to people either when driving over the Brewster Lake Road bridge or walking across them on the pedestrian crossing to the Elk Falls suspension bridge,” said BC Hydro spokesperson, Stephen Watson in a press release.

The penstocks were built out of old growth Douglas Fir and were made on the site. The first one was built in 1947, the second in 1949 and the last a few years later as the John Hart facility was slowly built as the surrounding community grew to take up the power generation.

Over the years, until around the 1980s, the penstocks were sprayed with creosote to act as a wood preservative. They were in poor condition and were replaced last October by the new underground tunnel and powerhouse.

“We’ve had a lot of feedback over the years that we should save a section for interpretive value,” said Watson. “The reality is the exterior wood and some seepage into the wood means it must be properly disposed. It’s not salvageable.”

BC Hydro knows the history of the wood-

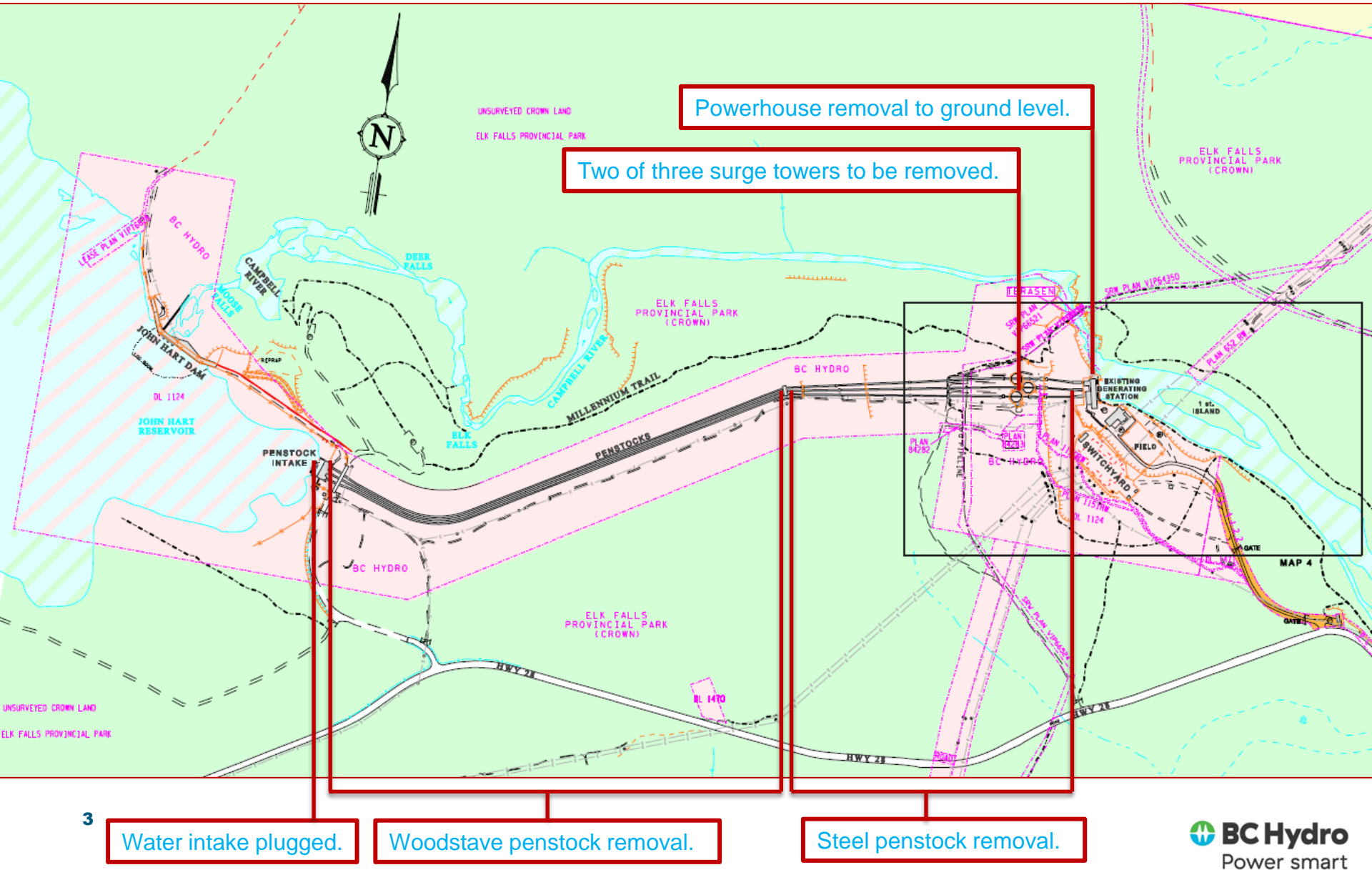


en penstocks and may have a replica made, perhaps three metres in length, by using Douglas Fir, the same design and dimensions, and with the original steel bands. The wood would then be painted with environmentally appropriate paint to give it a similar look to the real penstocks. That work, with BC Hydro likely seeking out assistance from a company or group within Campbell River, may happen in 2019. The location of the replica penstock for viewing is still to be determined.

For the old penstocks, they will be removed over about three months. Soil beneath the penstock is also contaminated, on average around 15 centimeters deep, and will be removed this spring, so that the soils under the penstock corridor meet provincial Wildland Environmental Standards. The penstock corridor will then eventually be returned to a forest.

Campbell River Mirror, January 18, 2018.

Old John Hart Project Site Map – Planned Decommissioning Works



John Hart Generating Station Replacement Project

The John Hart hydroelectric system woodstave penstocks

SEPTEMBER 1947



QUICK FACTS:

- The three penstocks are 3.66-metres in diameter and run 1.8 km from the John Hart dam to the generating station.
- 1.1 km of the penstock is constructed as woodstave made from old growth Douglas fir.
- Steel was a scarce commodity in the 1940s. Wood was a readily available and economic material where the topography is almost flat with low water pressure inside the penstocks. Where the elevation drops with the high water pressure down to the generating station for the last 700 metres, steel was used.
- The first penstock was built in 1947, the second in 1949 and the last penstock was commissioned in 1953. Each penstock provides water to two turbines/generators that, combined, are capable of providing 42 megawatts or enough power for about 25,000 homes.
- Water can flow almost 4 metres per second within the penstocks, and each penstock can carry about 40 cubic metres of water per second. That flow rate is enough to fill an Olympic-sized swimming pool in about one minute.



QUICK FACTS:

- In the early days, the outside of the wooden penstocks were treated with creosote as a wood preservative to extend their service life. The wooden penstocks are therefore contaminated and will require proper removal and disposal as part of the John Hart project. The ring-girders and steel bands, and the 700-metre section of steel penstocks, will likely be recycled. The decommissioning and remediation work will likely happen in early 2019, after the new tunnel and generating station are commissioned.
- The inner penstock wood is in good condition and maintains good upstream water quality for downstream fish habitat and the domestic water supply for about 35,000 people.
- Some of the soil within the penstock drip-line is also contaminated from the creosote. Those soils will be properly disposed. The penstock corridor will be remediated to wildland soil standards and be re-forested. The remediated area will provide unobstructed wildlife movement and better fit in to the surrounding Elk Falls Provincial Park.

A 2008 photo of the old water intake and penstocks.



View of the old water intake dam and the beginning of the penstock removal. The old wooden bridge is shown nearly removed.





View from the steel baily bridge of the wooden penstock removal. Managing contaminated materials: Ensuring that the contaminated wood and soil from the old infrastructure is properly managed is a top priority. It includes, using 'swamp mats' to ensure that heavy machinery doesn't track out contaminated soils, and sampling and testing by independent labs to ensure that materials are disposed of in the proper way.

Managing site water: For the old facility decommissioning and removal work, the project team has installed near the penstock corridor another water collection system to ensure that all water is directed through a water treatment plant before being properly discharged.



A wintery scene of the penstock corridor.



Crews advance further down the penstock corridor during the removal process.



Jobs: InPower BC, our project contractor, has about 150 people working on the project, with the majority working on decommissioning work. Over the coming months this number will continue to reduce. The final touches on the new underground facility are almost complete.



A close view of one of the woodstave penstocks.



View from the trail pedestrian crossing looking upstream along the penstock corridor.



View from the pedestrian crossing looking downstream.



View of the penstock corridor near the downstream end where it transitions to steel penstocks. The pedestrian bridge to Elk Falls can be seen in the background.



A nice viewpoint of where the penstocks transition to steel and travel down past the surge towers to the old powerhouse downstream. Part of the steel penstocks are shown removed.



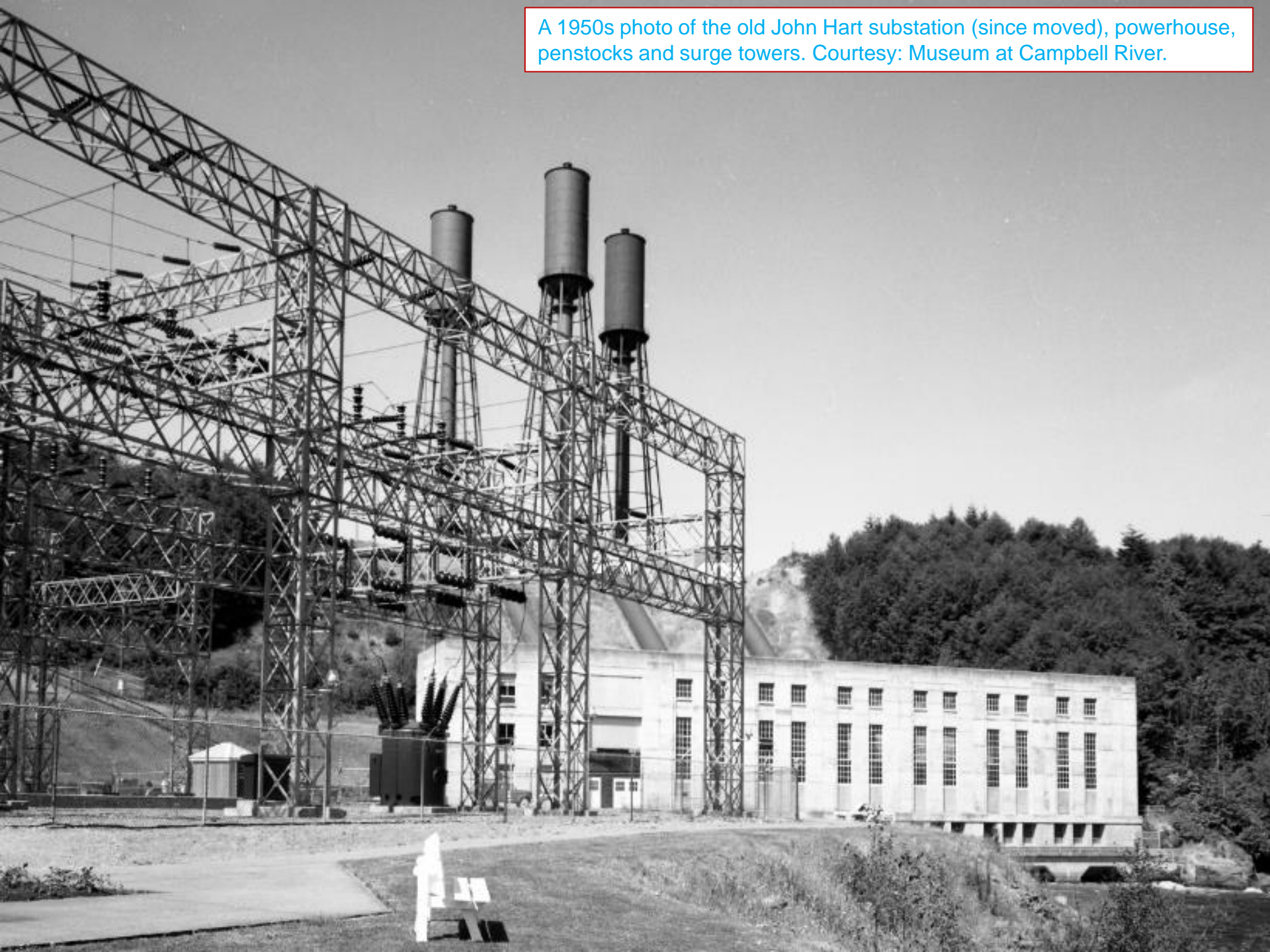
A good view of the steel penstocks being removed. Removing the lead paint is the first step. The steel is recycled locally.



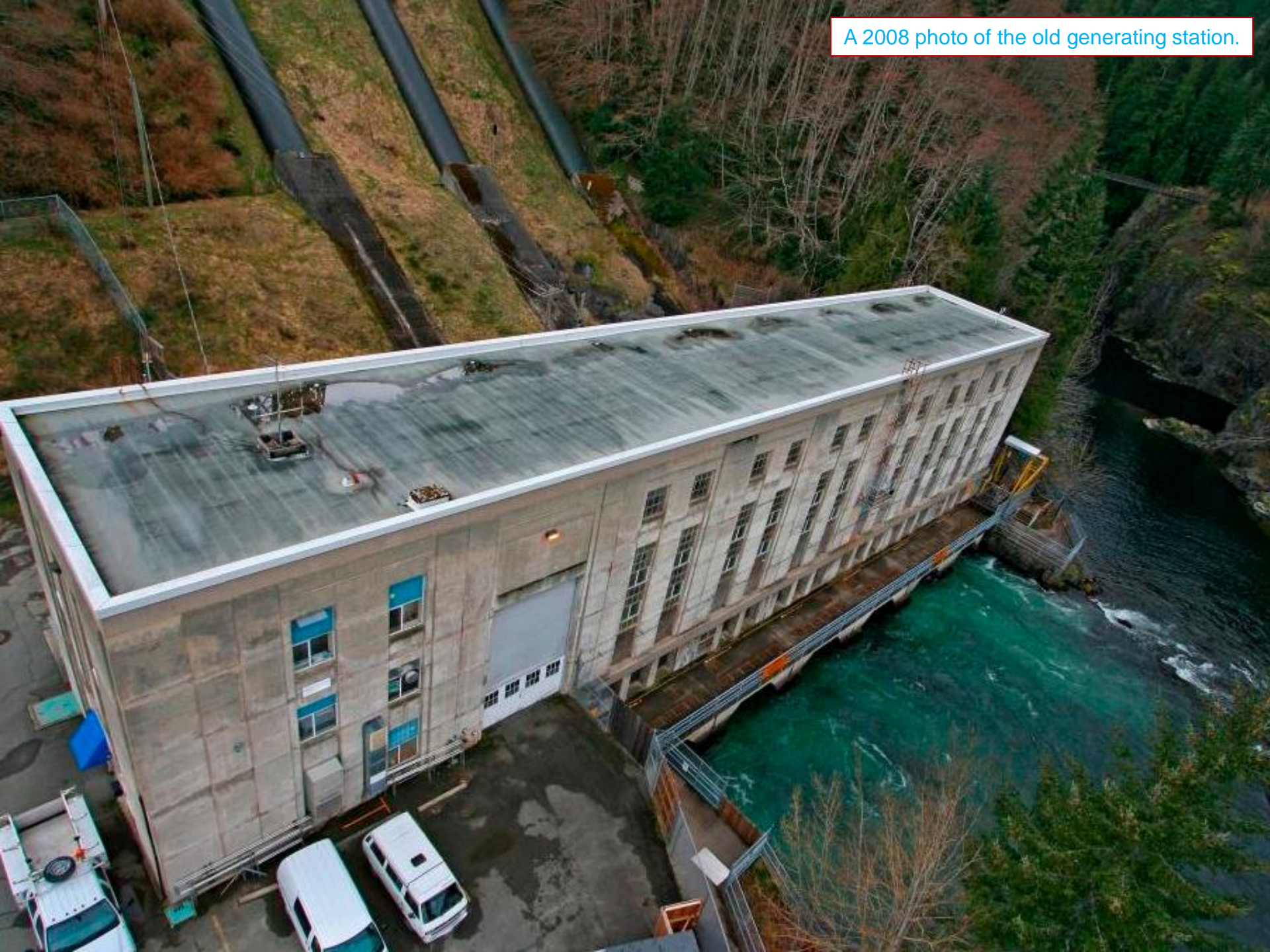
Some of the steel penstock sections removed.



A 1950s photo of the old John Hart substation (since moved), powerhouse, penstocks and surge towers. Courtesy: Museum at Campbell River.



A 2008 photo of the old generating station.





A close-up view of the old rotor within the stator. The technology and look is very similar to the new generators (inset Twitter post).



Stephen Watson-BC Hydro @SWatson_BCH · Feb 22

Neat comparison: on left, 71-year-old hydroelectric generator, & on right, the incomplete installation of a new generator. John Hart facility - old vs new.

Tech roughly unchanged in ~100 yrs, but manufacturing tech & material allows ~10% increase in power output.



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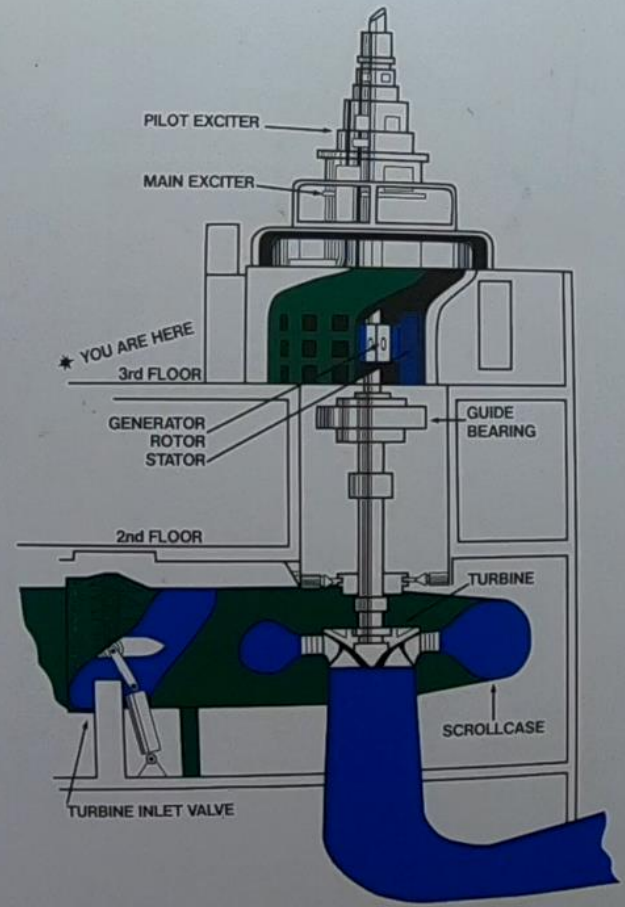
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Decommissioning and removal of equipment within the old powerhouse.





John Hart Generator



Above, a picture diagram inside the old powerhouse wall of one of the six units. On right, Generators 5 with the rotor and shaft removed.

The old powerhouse and the three surge towers in the background.



The John Hart Project Interpretive Centre now has a new name: Campbell River Hydroelectric Facilities Discovery Centre. All 13 wall panels within the centre were updated and replaced with a refreshed look. Go check it out.



Public Access – Trails And River Access

Campbell River's Canyon View Trail loop to temporarily close

Mar. 5, 2019 9:00 a.m. · Campbell River Mirror

Starting April 1 until, potentially August, walkers and runners will no longer be able to complete the full Canyon View Trail loop.

The section of trail that goes past the three penstocks and John Hart surge towers will be closed off as work advances in removing the old above-ground hydroelectric facility. People can continue to walk the trail up or down either side of the Campbell River.

"There's a lot of work planned in removing the 71-year-old John Hart hydroelectric facility," BC Hydro spokesperson Stephen Watson said in a press release. "The temporary trail called the Station View Trail, which opened in 2013 and re-routed the Canyon View Trail over the penstocks on a temporary wooden bridge, will be closed off for public safety."

Watson said the decommissioning work includes removing the three steel penstocks in stages, removing the concrete penstock anchor blocks, removing two of the three surge towers, and then site clean-up.

The trail across this area may then be temporarily re-opened until permanently closed off when the trail through BC Hydro's property is re-routed back near the river. The Canyon View Trail was in place along the river until 2014 when it was closed off for construction of the John Hart Generating Station Replacement Project. Hydro says it is following through on its commitment in putting the trail back near the river. The re-established trail may open around the end of the summer.

"We'll see how the work progresses on the removal of the old hydroelectric facility, though we see it being closed to July and potentially into August," said Watson. "As to putting the trail back near the river, we first need to have the old generating station removed down to ground level, then set up the trail through that area within a fenced corridor to the foot of the hill where some stairs will be installed. From there, the trail will go up the slope and then cut across above the new tunnel outlet area and join into the existing Canyon View Trail."

BC Hydro is also looking at restoring public river access where Destiny River Adventures, with their commercial river rafts, enters the river. That public access may be re-established by early fall 2019. Originally, people could enter the river near the entrance to the canyon, off a rock outcrop, just upstream of the old powerhouse.

"We were very fortunate with the project design that we had very few trail closures impacting the Canyon View Trail during project construction from 2014 to now," adds Watson. "For this work, there is no way around the closure. We appreciate people's patience and understanding. The end trail product and interpretive value will be worth the wait."

Signage with the trail closure dates will be posted along the trail system.

BC Hydro went over the trail and river access topics around the John Hart site at its community liaison committee meeting held February 27. About two-dozen stakeholders sit on the committee. Community questions about the trail and river access near the old John Hart powerhouse can be sent to Stephen Watson at steve.watson@bchydro.com.

CANYON VIEW TRAIL / STATION VIEW TRAIL CLOSURE

WITHIN BC HYDRO'S PROPERTY NEAR THE SURGE TOWERS

What's Happening?

John Hart Generating Station Replacement Project

Why?

A temporary closure of the Station View Trail, to ensure public safety, is required to remove the old John Hart facilities: two of the three surge towers, the three penstocks, and the generating station down to the floor level.

Closure Date:

April 1 to August 2019. 24 hours a day

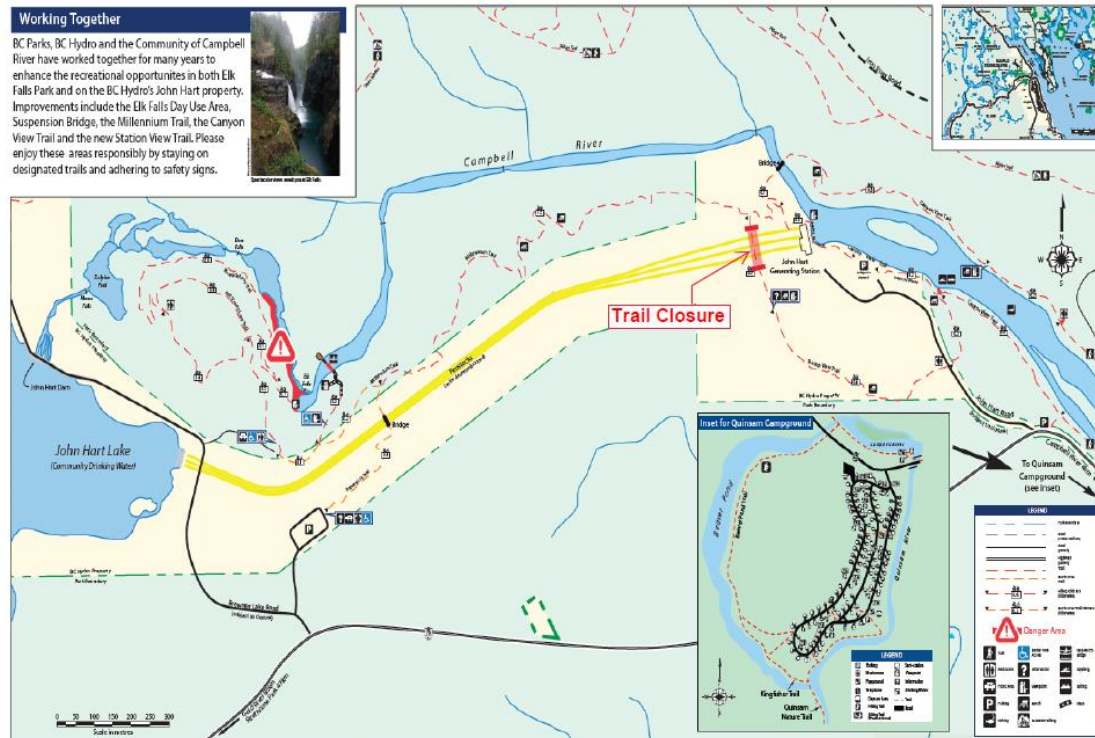
For more information:

Please contact Stephen Watson at 250-755-4795
Steve.Watson@bchydro.com



Working Together

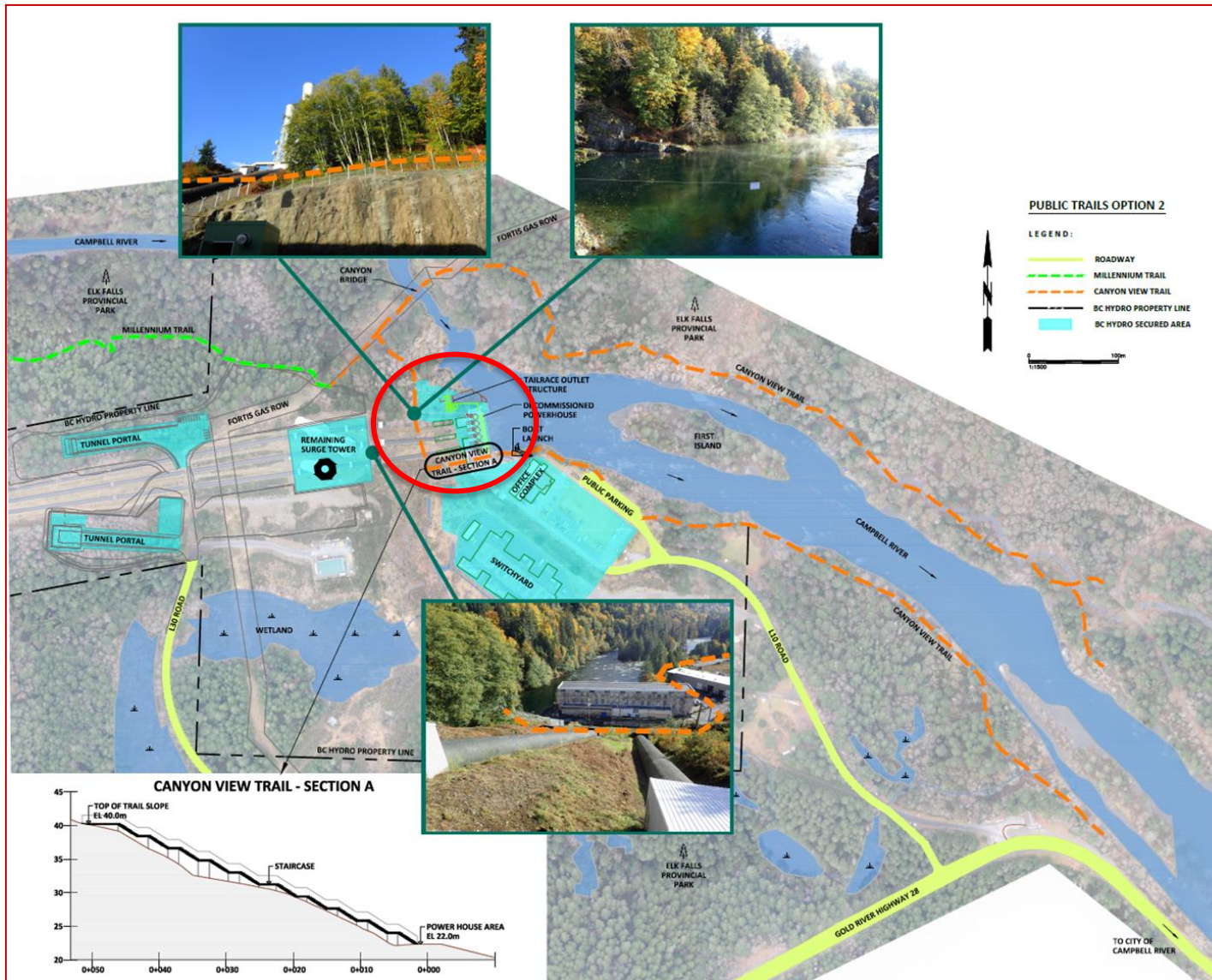
BC Parks, BC Hydro and the Community of Campbell River have worked together for many years to enhance the recreational opportunities in both Elk Falls Park and on the BC Hydro's John Hart property. Improvements include the Elk Falls Day Use Area, Suspension Bridge, the Millennium Trail, the Canyon View Trail and the new Station View Trail. Please enjoy these areas responsibly by staying on designated trails and adhering to safety signs.



Construction – Point Of Interest

Each month, BC Hydro and InPower BC will provide a construction fact, occurrence, or situation.

Trail and river access



The project continues to work to re-establish the section of Canyon View Trail through BC Hydro property back near the river by about September 2019.

The re-established trail area is shown within the red circle. The overall trail is shown in orange.

We are also working on restoring public river access in this area by about September 2019.

Look for more detailed information within our next report, to be issued at the end of June 2019.