



# Bridge River newsletter

## Projects update—Winter 2023

Bridge 1 Units 1—4 along the Seton Lake Reservoir

### ‘The project is needed urgently’ BCUC approves Bridge River 1 Units 1—4 Generator Replacement Project

The B.C. Utilities Commission has given their approval for the Bridge River 1 Units 1—4 Generator Replacement Project, saying there is, “...no justification to delay the BR1 Project because the project is needed urgently.”

The project at Bridge River 1 will replace aging equipment in the generating station to improve reliability, restore capacity and increase operating flexibility.

Project manager John Fitzgibbon welcomed the granting of the Certificate of Public Convenience and Necessity (CPCN) for the project.

“We’re grateful it’s been found to be in the public interest. We’re thankful to our stakeholders and St’at’imc Nation for their involvement in the regulatory approval process.”

The BCUC had asked for the Bridge River 1 project to be coupled with the Bridge River Transmission Project so the applications could be reviewed together. The transmission project will continue with their regulatory approval process separately.

In their decision the panel cited the the growing need for clean energy in the province, managing water flows in the Lower Bridge River system, and aging infrastructure.

With the certificate in hand, Fitzgibbon’s team is focused on getting the project to the end of the planning phase and into implementation.

“System design and detailed design of the generator’s major components will take about nine months, it will be another 18 months for the manufacturing of the first generator, and about 27 months before new equipment shows up at site if everything goes to plan.” The targeted completion of the project is 2030.

### Update on work forecast

BC Hydro’s workforce in the Bridge River region can vary depending on project status.

- This summer approximately 40 workers were in the area.
- The number increased to 50 this fall with the majority of work completed mid–November
- Workers have been staying at existing facilities with the majority in Tsal’alh/Seton Portage.
- No additional accommodations required for 2022 or 2023.

#### BCUC DECISION

You can find the full BCUC decision on the Bridge River Projects here:

**Certificates of Public Convenience and Necessity for the Bridge River Projects**  
– BCUC

## Drone gets up close and personal with rockwall at Terzaghi

Imagine a very large, steep slope of rock, difficult to access, but you need to investigate it ahead of a major BC Hydro capital project. It's also not safe enough to send someone up the traditional way, on ropes. That's the challenge engineers working on the Terzaghi Dam Spillway Chute Access Improvement project faced.

Dam safety engineer Chris Bray, who works in the Bridge River region, was the person behind the drone that allowed the team to digitize the mountainside, to have a better understanding of the slope.

"There's a lot of prep work involved. You have to clear the flight with the aircraft operations group, then set up a safe work area. This one we were doing on the crest of the dam, where we set up some cones for the landing area."

Bray adds this high-tech solution also tested out the use of virtual reality goggles worn by project team engineer Inderbir Hundal who controlled the camera.

"I maintained the aircraft in a safe spot, because we were getting close to the rockwall and spillway at times, and Hundal could pan, look left and right and zoom to get the angles they needed."

To make sure the drone doesn't get too close, six sides are fitted with proximity sensors. If it gets within a metre of the wall, alarms will go off and the drone will hold its position.

Hundal says using this technology isn't standard practice yet.

"I wouldn't say that we would never go on ropes again and do an in-person inspection, but this is a good tool to supplement and shows tremendous potential for improving safety for similar projects."

The project is currently in the planning stage. Solutions being considered include meshing, bolting, and shotcreting on areas of the steep rock slope above the spillway. This will allow better access, and meet current requirements for inspections, investigations, and minor repair of the spillway.



Dam safety engineer Chris Bray at Terzaghi Dam, piloting the drone

## Lessons learned from Downton drawdown

The last time there was a drawdown at the Downton Reservoir with an elevation as low as 699 meters was in the 1990s. Flash forward to this year, and after months of careful planning and consultation, the LaJoie Dam Improvement project team completed their drawdown this spring. Many team members were on site to get a firsthand view including project manager Zeljko Cecic.

"Because it had never been done like this before, the delivery of the plan had some level of uncertainty. We didn't know what access was going to be like for monitoring, and what flows would be like. Now that uncertainty has filled itself in."

A key challenge for Cecic and the project team was establishing safe access within the drawdown area to perform environmental monitoring. While access was not possible to much of the reservoir, St'at'imc consultants identified safe and feasible access options and carried out environmental monitoring and managed impacts. This information will now be used for future drawdowns.

"We had an environmental management plan developed in collaboration with St'at'imc Nation and the Water Comptroller, to monitor and mitigate environmental effects of the drawdown. But even to conduct the monitoring we had to come up with creative solutions such as boats, 4x4 vehicles, helicopters and hiking to collect



Drone shot overlooking Terzaghi Dam with Carpenter Lake Reservoir behind



View from Gun Lake Road looking at the upstream face of LaJoie Dam during Downton Reservoir drawdown (April 28, 2022)

the information we needed.”

“It’s changed the way we think about how we drawdown, when we drawdown and the impacts of drawdowns at LaJoie. We talk about the impacts, but until you see it, go through the experience in a very real, physical, tangible way, you don’t really understand.”

The work has provided valuable information for the design level of the project, where the team is looking at options that could minimize the number and duration of drawdowns during construction.

As a result, there is a better understanding about priorities when it comes to environmental monitoring, where and how they can get access, and managing flows when the reservoir operates at lower levels.

The drawdown lasted 10 days with the reservoir reaching its lowest level in April. Three weeks later it was back at typical seasonal levels. Drawdowns during construction are expected to last longer.

Design work and studies for the project continue into 2023 and 2024, with the recent drawdown informing the work ahead.

Looking back, Cecic knows it was hard, but worth it.

“It was successful in that we learned a lot. None of it was easy. But I am so glad we did it, because it has shone a different light on the project, potential drawdowns, and where to deploy our efforts.”

For more information [LaJoie Dam improvement project \(bchydro.com\)](https://www.bchydro.com).

## Focus on skills: Pre-apprentice power line technician

Pulling long hours working with helicopters and climbing poles in remote areas through heatwaves and windstorms. It’s a tough job keeping the lights on in the province, but pre-apprentice power line technician Layne Malm loves every minute of it.

“I’ve worked for some big companies, but no one comes close to BC Hydro.”

Malm worked his way up from a summer youth hire in 2019 as a field storekeeper, eventually landing a full-time position.

“I applied to IBEW 258 and got membership through them. I took the required logistics course, and then I put myself on a list. The union will call when they have openings for field storekeepers.”

After a year, there was an opening in 100 Mile House.

“Field Storekeeper is a great role if you’re trying to become a Power Line Technician. You learn all about materials, you work with the line crews, so you just really get to see their day to day.”

From 100 Mile House, he moved on to Burnaby. Meanwhile, he chipped away at fulfilling the requirements. Upgrading his physics 11, getting the appropriate classes of driver’s licenses, and to make his application more competitive, taking a course on electrical fundamentals at a nearby college. Malm wasn’t successful on his first application, but he persevered.

“I mean my biggest advice going through this whole process is take your interview seriously, practice your interviews. They said I bombed the interview, but my field skills were good.



View from Gun Lake Road looking at the upstream face of LaJoie Dam during Downton Reservoir drawdown (April 28, 2022)



BC Hydro's 2022 pre-apprentice power line technician class, including Layne Malm, on a pole at the Trades Training Centre in Surrey (Sept. 2022)



“I’m Metis and after losing out the first time, I worked with someone from Indigenous Relations at BC Hydro, Valerie Monkman, an amazing woman. She spent hours with me preparing for the interview.”

When he got the role, he was placed in his hometown of Lillooet. As an apprentice, Malm will be moved sometime in the next couple years.

“I just hope that it’s somewhere near my spouse. She is an apprentice power line technician too.”

## A BC Hydro love story

And when Malm shared that tidbit we had to ask him about how they met.

“I was a field storekeeper and she was an apprentice. She’s a few years ahead of me, but we met each other internally through Hydro. We’re a Hydro love story.”

“Whenever I need advice and no one’s around to ask, like one of the journeyperson’s, and I have a minute, I will quickly call and ask her.”

## Life on the lines

It’s hard for Malm to pin down what an ‘average’ day would look like for a power line technician.

“You’re working through all conditions from super-hot to super icy, windy weather where you have lots of trees on the wires, broken poles, so storm season is a busy season. “

What Malm likes about BC Hydro’s safety culture is the encouragement to listen to your body when in extreme weather conditions.

“If you need to go sit inside for 10 minutes in the truck to warm up, please do. You just don’t feel bad about it. You do what’s safe”

The work is hard, but the rewards make it worthwhile.

“When we gather at the end of the day to talk about what happened, honestly, it’s a pretty amazing feeling to just see what you and the other crew members have accomplished. It’s honestly unbelievable.”

And if anyone has questions on being a Powerline Technician?

“I would love to help. I’m willing to help anyone, because I know what it’s like to be a 19-year-old trying to get on with Hydro and not really knowing where to start.”

For more information, **Careers ([bchydro.com](https://www.bchydro.com))**



BCHydro pre-apprentice power line technician Layne Malm with wife Tessa Younger, a BC Hydro apprentice power line technician, ocean fishing in Rivers Inlet.



Malm with 2 colleagues working on pole replacements alongside a helicopter just outside Bralorne.

For more information on Bridge River projects visit [bchydro.com/bridgeriver](https://www.bchydro.com/bridgeriver)

If you have questions, please contact us at [projects@bchydro.com](mailto:projects@bchydro.com) or 604 623 4472 or toll-free at 1 866 647 3334.

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