

THE CURRENT

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As construction activities have finally ceased and the Upper Lillooet Hydro Project (ULHP) has come to life, it's with mixed feelings that we bring you our last issue of THE CURRENT. It's been an incredible journey for Innergex, both on-site and in the community as we have enjoyed sharing topical and timely information as the project has progressed. For the past three-and-a-half years, we have used THE CURRENT to connect with Pemberton and the surrounding community to share all the highlights, successes and challenges the ULHP has faced, from wildfires and flooding, to the environmental steps that were taken to ensure effects of the project on native species were mitigated or avoided and the long-term training programs initiated that turned into employment opportunities on the project and hopefully beyond.

We are extremely proud of what we have accomplished and know that what we've achieved could not have happened without your support. And you haven't seen the last of us. Our long-term commitment to the project means we'll be a part of the Pemberton community for at least the next 40 years, and hopefully more. ■

The Long Term Monitoring Program

The Upper Lillooet Hydro Project's (ULHP) five year Long Term Monitoring Program (LTMP) addresses the operational environmental monitoring conditions identified during the environmental assessment and permitting phase and that are detailed in the Environmental Assessment Certificate, Fisheries Act Authorization, Conditional Water Licences and other project approvals. The objective of the LTMP is to confirm that any effects of our operating facilities are in line with expectations when the project was first approved by government.

Effects from run-of-river hydroelectric facilities can be grouped into two types, operational and footprint. Footprint effects may be short-term in instances where replanting of vegetation can occur, but are generally long-term where project structures persist continuously until project decommissioning (e.g. the riparian and aquatic habitat area occupied by the intake structure and tailrace). Operational effects are not associated with project structures, but result from changes to water flows

for the purpose of project operations. For example, the change in water flow downstream of the facilities' intakes, and the resultant effect to the aquatic environment (e.g., change in functional habitat and food supply), is an operation effect.

The monitoring program consists of three types of monitoring: compliance, effectiveness and response monitoring. Compliance monitoring is conducted to ensure that conditions outlined in the EAC, DFO Fisheries Act Authorization, and Conditional Water Licences are adhered to. Effectiveness monitoring is conducted to verify that mitigation and compensation measures implemented for a project are effective. Response monitoring is the long-term monitoring of environmental parameters to establish empirical links between project development and operation and any effects on the environment.

The ULHP monitoring program has been tailored to assess potential effects on the environment such as; fish and fish habitat; water flow (instream flow, ramping rates); wildlife and wildlife habitat present in the

ABOUT INNERGEX

Innergex develops only renewable energy projects because we believe that the way to a cleaner future is through truly sustainable energy sources. We began developing, owning, and operating run-of-river hydroelectric facilities, wind farms, and solar photovoltaic farms in 1990. Today, we operate facilities in Quebec, Ontario, British Columbia, the USA and France. From the very beginning, our mission has been to produce clean and renewable energy by developing and operating high quality facilities while respecting the environment and balancing the best interests of the host communities, our partners, and our investors. For more info please visit www.innergex.com.



↑ Upper Lillooet River fish monitors.

Project area; vegetation (habitat restoration and invasive plants); mitigation and compensation measures (i.e. Alena Creek Fish Habitat Enhancement Project – refer to Issue No. 7) and more.

Innergex is very proud of the results of our comprehensive monitoring programs at our other operating facilities that support the idea that run-of-river hydroelectric facilities can generate clean electricity without negative effects on valued components (refer to Issue No. 6 for our Harrison Hydro Project LTMP results). We look forward to commencing the ULHP LTMP in 2018. ■



Grizzly Bear Monitoring and Regional Access Management Planning

In addition to the ULHP LTMP, in September 2013, Innergex contributed \$300,000 to the Provincial government's on-going regional provincial population trend monitoring of Grizzly Bear movement and gene flow, through DNA survey and radio-collaring. The five-year study for the Upper Lillooet River drainage is currently underway to conduct a grizzly bear inventory and a monitoring and evaluation program to understand the impacts of all types of development on the grizzly bear population (refer to Issue No. 2). Furthermore, the Project has committed to (and is currently) partaking and collaborating on regional multi-stakeholder access management / land use planning, led by the province. ■

Soil Salvage, Site Reclamation and Landscape Restoration

A Soil Salvage, Site Reclamation and Landscape Restoration Plan was developed for the Project (Condition 1 of the EAC) that detailed objectives to avoid, reduce, mitigate or eliminate impacts to soils, soil function, vegetation and other valued ecosystem component (e.g. riparian areas, fish and fish habitat, wildlife and wildlife habitat, and visual quality objectives) and to assist the recovery of disturbed areas towards reaching desired future condition that is self-sustaining and capable of supporting soils, soil function and vegetation communities and processes similar to the adjacent undeveloped areas with no subsequent management input required.

Site specific restoration and revegetation prescriptions have been carried out across temporarily disturbed areas and access tracks associated with the Project's construction footprint. Restoration actions will be monitored for effectiveness and compliance. Site specific restoration objectives also considered vegetation related restoration mitigation measures prescribed for species-specific habitat, such as Grizzly bear, Mountain goats and Coastal tailed frogs. The IEM and IE confirmed successful completion of remediation and reclamation of all temporary disturbed areas.

The Project's OEMP has a vegetation monitoring component that will qualify and quantify the re-growth of vegetation in terrestrial and riparian areas to mitigate short-term habitat loss and to prevent the introduction of invasive species that may occur through site disturbance. The monitoring will assess percent cover, plant densities, erosion control, soil replacement, contouring and/or decompaction, and revegetation. ■



↗ Above: Site reclamation following construction
← Left: Coastal Tail Frog crossing restored.

Mountain Goat Monitoring Program

During supporting studies for the Environment Assessment, Truckwash Creek was confirmed as an important migration corridor for Mountain Goats between the Mountain Goat ungulate winter ranges (UWR) situated in the Keyhole Falls canyon and the higher elevation Mountain Goat UWR. A visual and partial auditory barrier was designed and constructed for the Upper Lillooet River Hydroelectric Facility (HEF) downstream portal at Truckwash Creek, and last fall (2016) it was converted into a permanent berm where it was restored and replanted, to allow for the continued use of this area by goats.

Monitoring methods included photographic data collection by infrared camera, ground-based surveys for Mountain Goat signs, and incidental sightings (similar to what was done during construction – refer to Issues No. 01 and 06). When we adjusted and downloaded our wildlife cameras in the Upper Lillooet Valley we were very pleased to see that over several months (February,



↑ Above: Mountain Goats observed migrating in Truckwash Creek corridor.

March and April) our cameras captured multiple Mountain Goats using the Truckwash Creek migration corridor. We were extremely happy as this confirmed continued use of migration corridors post-construction and into the commissioning phase. ■

The Finished Project...



↑ Above: Boulder Creek intake.
 ← Left: Upper Lillooet River intake.



↑ Above: Boulder Creek powerhouse.

Right: Truckwash Creek Restoration and previous downstream tunnel portal. →



↑ Above: The Upper Lillooet powerhouse and buried penstock
 ← Left: close up of tailrace below it.

Getting to Know the ULHP Operators

Currently there are three full-time Hydro Station Operators working at the Upper Lillooet Hydro Project. Lead manager, Don Gamache, has worked for Innergex since 2003 and has been involved in our Fitzsimmons and Rutherford facilities for the past 14 years. Our two new operators Arthur Thevarge from D'Arcy and Curtis von Cube from Pemberton both started full-time in the past year. All three operators have a wide range of skills and experience including millwright, Heavy Equipment Operators, Red Seal carpenters, pipefitters and electronics/electrical training.

Operators stay on site up to five days a week and are on-call 24 hours a day because "if the alarms in the plants go off, you run", says Arthur Thevarge. Arthur has been involved in the construction of several projects as a heavy equipment operator and is proud to be a part of making renewable energy. The past Chief of the N'Quatqua First Nation is excited to learn so many new skills such as EITI High Voltage Training and is keen to get the plants working smoothly.

Don and Curtis have worked at other Innergex owned facilities but both agree that while the facilities all do the same thing, there is still so much to learn as the programming and interfaces are all different.

The ULHP operators are under the watchful eye of Operations Manager Matt Taccogna. Matt has a Navy background and operated submarines as a Sonar Navigation Officer. He says that the systems on a submarine are very similar to a run-of-river facility and enjoys working on the electrical and hydraulic components.

All of our operators really like their jobs and love the beautiful



↑ Above, left to right: Arthur Thevarge, Wayne Russel, Don Gamache and Matt Taccogna.
 ← Left: Curtis Von Cube.

setting in the Upper Lillooet River area. They love the backcountry and are well versed in snowmobile and ATV travel to get to and around the site. A key factor that has contributed to their love of the job has been working under the Director of Operations, Wayne Russell. Wayne comes from South Africa and has been with Innergex for the past three years. Wayne has a knack for drawing on the strengths of each individual so that there is a strong team effort and collaboration amongst the workers. ■

Thank You!

Innergex Renewable Energy Inc. would like to extend their gratitude to the communities of Pemberton, Mt. Currie, D'Arcy and all residents throughout Area C in the Squamish Lillooet Regional District (SLRD). We are extremely pleased to now be producing renewable energy from both the Upper Lillooet River and Boulder Creek facilities, as of this year. It has been quite a journey from the start of development in 2008, through the permitting and certification stage, to breaking ground in the fall of 2013, all the way to starting operations this year.

During this time, we have had two different offices in the Village of Pemberton where we aimed to provide an opportunity for the community to have access to project information and felt welcome to engage with us during the various stages of the project.

Having a positive impact on the communities we operate in is extremely important at Innergex. We were very pleased to support many community events and groups over the past many years whether it was sponsoring golf tournaments or junior sports teams, donating funds for the construction of the legacy project the Friendship Trail and Bridge or the downtown Barn project,



and other annual events like Slow Food Cycle, Winterfest and AugustFest, we have been proud to have had the opportunity to be a part of these important grass roots initiatives.



Our Pemberton office is now closed but we haven't left town! We will be operating the Upper Lillooet Hydro Project (and our other Sea-to-Sky facilities) for many years to come and look forward to ongoing interactions with local businesses and community groups. ■

Community groups and projects supported by Innergex over the years.