



## Woodfibre LNG and FortisBC: Update from Squamish Nation Environmental Implementation Team Nov 20 2019

- Since June 2019, Squamish Nation's (SN) environmental team has been posting monthly project updates through the community newsletters. In this edition:
  - Page 2 - Info on the Woodfibre barge-based camp ("floatel")
  - Page 3 and 4 – General status update for Woodfibre LNG
  - Page 5 – Recap of visit to Pacific Canbriam in Treaty 8 territory
  - Page 6 – FortisBC project update
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### Background

- FortisBC Eagle Mountain Pipeline (EGP) are planning to build a buried pipeline to move natural gas from a starting point north of Coquitlam to an end point at Woodfibre.
- Woodfibre LNG (WLNG) is planning to build a large industrial facility (export terminal) where gas would be condensed into liquid natural gas (LNG) and loaded onto tankers.
- Both companies must comply with environmental conditions from Squamish Nation and provincial / federal agencies before construction can begin, and then meet a different set of conditions before operations could begin (see Page 7 for more).

### QUICK FACTS

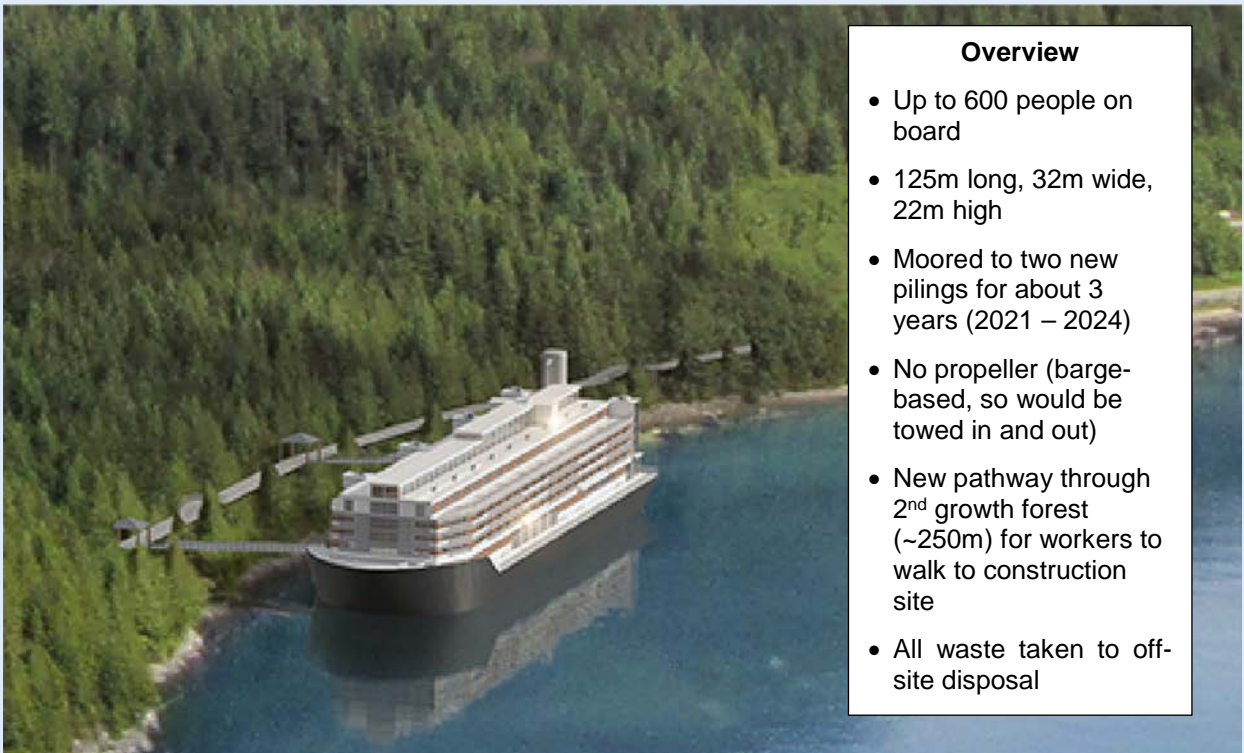
- WLNG and EGP project areas are shown on page 7.
- The pipeline will be about 50km long and mostly follows an existing gas pipeline built in 1990.
- The export terminal will involve a large facility both on land and on a floating storage/offloading unit (called "FSO").
- Approximately one LNG tanker per week will come in and out of Howe Sound for loading.
- Construction of the export terminal is expected to start in mid 2020, and pipeline construction is expected to start either in 2020 or 2021.
- Regular newsletter updates will include general background information, and current details of environmental planning.



## WOODFIBRE LNG FLOATING CAMP (FLOATEL)

On October 28, Woodfibre LNG applied for permission to house construction workers in a floating work camp (floating hotel = “floatel”) and a walkway connecting camp to construction site.

To use a floating camp, WLNG will require approval from Squamish Nation, the provincial government (Environmental Assessment Office) and federal government (Impact Assessment Agency of Canada). Squamish Nation is conducting a due diligence review of the proposal and its potential environmental and social impacts compared to the existing approval of workers living in market housing.



### Overview

- Up to 600 people on board
- 125m long, 32m wide, 22m high
- Moored to two new pilings for about 3 years (2021 – 2024)
- No propeller (barge-based, so would be towed in and out)
- New pathway through 2<sup>nd</sup> growth forest (~250m) for workers to walk to construction site
- All waste taken to off-site disposal

[You can access WLNG's application report and environmental assessment here](#) (electronic copy) or by visiting [www.projects.eao.gov.bc.ca](http://www.projects.eao.gov.bc.ca) and searching for Woodfibre LNG.

Squamish Nation is coordinating the environmental assessment review with provincial and federal agencies. Decisions to approve or not approve are expected in January or February 2020. If you have comments, questions, or concerns about this application, they can be submitted to the joint review process by December 12, 2019:

1. Contact Deanna Lewis [Deanna.lewis@squamish.net](mailto:Deanna.lewis@squamish.net) Adrienne Charlie ([acharlie@pgggroup.com](mailto:acharlie@pgggroup.com)) or Tyler Gray ([tgray@pgggroup.com](mailto:tgray@pgggroup.com)) from Squamish Nation's environmental management team.
2. Submit comments online through the [BC Environmental Assessment Office portal](#) ([www.projects.ea.gov.bc.ca](http://www.projects.ea.gov.bc.ca) and search for Woodfibre LNG)



## WLNG ENVIRONMENTAL MANAGEMENT PLANS

Squamish Nation has participated in development and approval of four Environmental Management Plans that are required prior to construction:

- **Wildlife Management Plan:** construction practices for reducing disturbance and habitat loss for wildlife during construction, and monitoring to ensure those practices are followed.
- **Water Management Plan:** details for how and when water from Mill Creek and Woodfibre Creek can be used during construction – biggest focus on monitoring and restricting water use in low flow conditions.
- **Invasive Plant Management Plan:** how to prevent new species from being introduced to site, and how to reduce spread of those already on site.
- **Marine Mammal Noise Monitoring Plan:** ensuring marine noise during construction is below injury threshold for whales, and that marine construction stops if whales (or other mammals) come within 1km of the site.

We are working to add the *Sk̓wxwú7mesh Sníchim* (Squamish language) into the Environmental Management Plans.

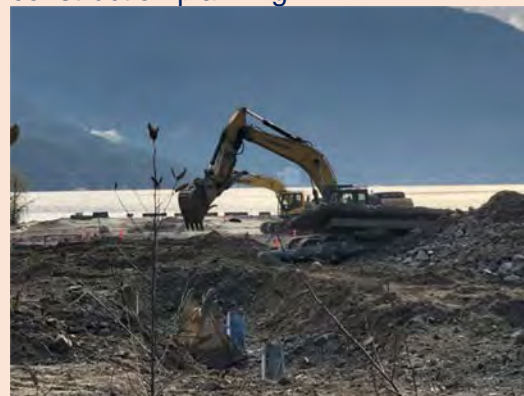
8 more management plans remain to be prepared and approved before construction is allowed to start. A similar process with new documents will take place prior to operations.

## WLNG ENVIRONMENTAL SITE VISIT 13 NOV 2019

Woodfibre LNG is obligated to have their own environmental monitors inspecting site activity. Squamish Nation's environmental team will also be conducting periodic site inspections as part of overall compliance monitoring with the Squamish Nation Environmental Assessment Agreement.

A Squamish Nation delegation visited the site on November 13, 2019. Although the project has not started construction, WLNG does have ongoing maintenance and demolition activities for the old mill infrastructure.

Through the remainder of winter and spring 2020, WLNG will be demolishing old buildings, closing the landfill on site, replacing a failing pier, and doing geotechnical testing as part of pre-construction planning.



Ongoing demolition of old mill infrastructure at swíyat (Woodfibre) – 13 Nov 2019



## Woodfibre (Swíyat) Site Photos – November 13, 2019



Concrete slab removal



Mill Creek – pink salmon spawning area



Beachfront is improving following removal of piles



Floatel walkway route has lots of abandoned water pipes and heating tanks from when mill houses were located there in the 1960s.



## Visit to Pacific Canbriam in Fort St John – Oct 24 2019

In June 2019, Woodfibre LNG's parent company, Pacific Oil and Gas Ltd, [purchased a mid-sized natural gas production facility](#) in Treaty 8 territory near Fort St. John, BC.

Squamish Nation sent a team to tour the facility on October 24, 2019. This was a due diligence tour to review environmental management systems and to get deeper familiarity with “upstream” natural gas development and distribution processes.

Attendees on the visit included:

- Peter Baker (Rights and Title Department)
- Lauren Hutchison (Communications Department)
- Deborah Baker (Councillor, member of IBA Environmental Subcommittee)
- Deanna Lewis (Councillor, Chair of IBA Environmental Subcommittee)
- Ray Natraoro (Rights and Title Department, member of IBA Environmental Subcommittee)
- Adrienne Charlie (Woodfibre – Squamish Environmental Working Group)
- Tyler Gray (Woodfibre – Squamish Environmental Working Group)

The site tour was helpful and encouraging. Some key summary points:

- Pacific Canbriam is a relatively new facility (less than 10 years old) and reflects much of the improved environmental measures that have evolved in the natural gas industry in recent years.
- Nearly all process water for wells and distribution is captured and recycled.
- Where new water is required, it is sourced from Williston Reservoir – this is ideal because it avoids need to divert or impound water from low-flow streams.
- Capture and recovery of fugitive gas emissions has improved considerably in the last couple of years, throughout the industry.
- Representatives from Halfway River First Nation and Saulteau First Nations endorsed Canbriam as responsible and responsive.
- Natural gas extraction yields by-products like propane and butane. Separation and sale of these by-products is a big part of Canbriam's commercial success. Pipeline distribution to Woodfibre will be nearly pure methane (as a gas, not liquid).





## FortisBC Eagle Mountain (Woodfibre Gas Pipeline) – Status Report

- FortisBC has begun community consultation on housing options for employees during construction. Considerations are different than Woodfibre since the project area for a pipeline is not all in the same location.
- FortisBC is nearly finished the 2019 geotechnical investigation program (to confirm rock and soil conditions and) to fine-tune the pipeline route. Recent work has been in Mamquam, Stawamus and Valleycliffe areas. Test-holes drilled in 2019 have all been along existing roadways. Further work in 2020 will be supported by helicopter, for parts of the pipeline that are outside of existing cleared areas.
- It seems increasingly likely that Fortis will seek permission to move the new compressor stations from Mt. Mulligan to *swíyał* (Woodfibre). We expect to know for sure by early 2020. In this case, FortisBC would then need to apply for permission to make this change (apply to Squamish Nation, as well as provincial government).
- Pipeline construction will start later than the Woodfibre LNG facility. The Environmental Working Group expects to start detailed discussions on Environmental Management Plans in 2020.



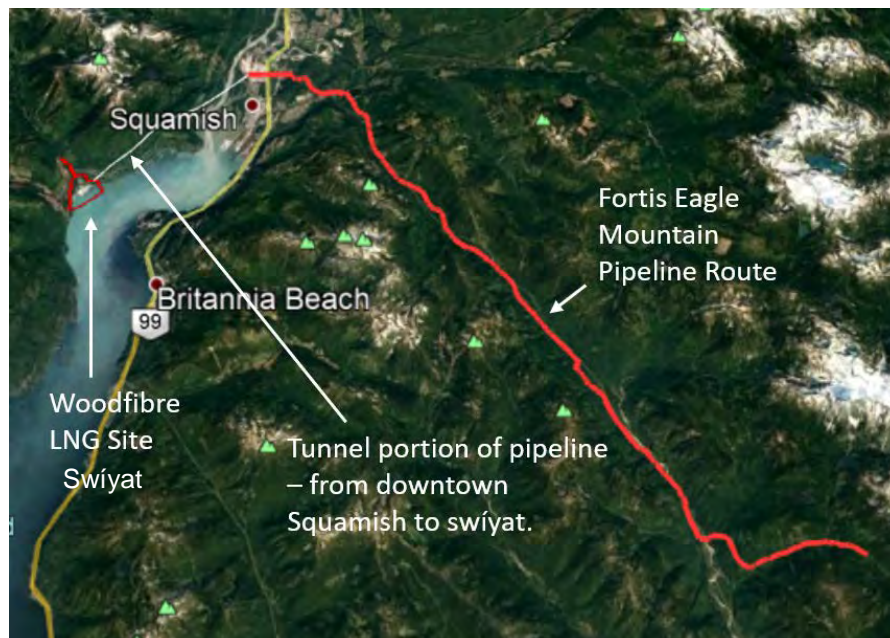
Squamish Nation's environmental team for the Fortis pipeline visited some of the creek crossing locations in June 2019.



## Background: Environmental Conditions of Approval

- Squamish Nation's approval of the Woodfibre and FortisBC projects included environmental conditions that must be met. These created significant changes to project design.
- Additional environmental conditions were issued by provincial and federal governments.
- **Examples** of Squamish Nation conditions include:
  - Abandoning sea water cooling, due to concerns of large water intakes and discharge of chlorine.
  - No machinery or digging in Skwelwil'em (Squamish River estuary). Tunneling will be used instead.
  - Gas compressor stations not permitted near any Squamish Nation reserves.
  - Ensuring the project never switches from LNG to oil shipments.
  - No project expansions without Squamish Nation approval.
  - Providing access for Squamish Nation members through security-restricted areas and minimizing disruption where pipeline work is near cultural sites.
  - No bunker fueling (ship-to-ship refuelling) of tankers permitted within Squamish Nation territory.
  - Squamish Nation approval authority for environmental management and follow-up monitoring plans – this will include emergency prevention and response plans for operations.
  - Supporting additional research for Howe Sound marine life.
  - Accountability for both companies to fulfill all voluntary environmental commitments (other governments do not monitor voluntary commitments).

### Pipeline Route and Woodfibre LNG Location (*swíyat*)





## Squamish Nation: Project Environmental Contacts

Squamish Nation appointed technical representatives to the WoodfibreLNG and FortisBC Environmental Working Groups:

**Tyler Gray** and **Bridget Dunne** on contract from PGL Environmental Consultants as technical leads and project managers. Both are biologists.

**Adrienne Charlie** hired by Squamish Nation and PGL as the Community Outreach Coordinator both projects.

- This role provides cultural, technical, and administrative support with implementing the environmental conditions.
- This role will also be one way in which Squamish Nation leadership is reporting to, and listening to, membership about environmental and cultural concerns with the projects.

Squamish Nation's **IBA Implementation Committee** appointed an **Environmental Subcommittee** including a mix of department staff and elected councillors. The subcommittee is an advisory group that oversees the progress of the Environmental Working Groups. **Deanna Lewis** is the Chair of the subcommittee.

If you have environmental questions or concerns about Woodfibre LNG or the related FortisBC pipeline, please contact:

Tyler Gray ([tgray@pggroup.com](mailto:tgray@pggroup.com) or 250 940 0768)

Adrienne Charlie ([acharlie@pggroup.com](mailto:acharlie@pggroup.com))

Councillor Deanna Lewis ([deanna\\_lewis@squamish.net](mailto:deanna_lewis@squamish.net))