

Pacific Trail Pipeline Construction Techniques

<https://www.youtube.com/watch?v=RpnqhsvwhFY>

Speaker 1: So, the Kitimat Project is comprised of a number of pieces. First of all, there's the large upstream resource in northeast BC, the Horn River and Liard Basins. We're then going to connect that gas through a pipeline that we'll construct called The Pacific Trail Pipeline. The site at Bish Cove, going to build a two-train LNG project and we're going to be capable of exporting over 10 million tons of LNG per year.

Bao Vang: My responsibility is to deliver a 42 inch natural gas pipeline from Summit Lake all the way to Bish Cove and we will be crossing over the coastal mountain range. Our goal is to maximize benefits for the communities but minimize the impact by offering opportunities with employment, training, and contracts. So, to build the pipeline, we need to survey and identify the right of way and once we go through all of our environmental permitting and engagements with first nations' stakeholders, partners, and local communities, we then are better prepared to clear the right of way.

The Pacific Trail Pipeline will have a construction right of way of about 38 meters. We build roads to access the right of way, then we're ready to start the mainline construction. Mainline construction is highly specialized and they will do the bulk of the pipeline construction work. Then, testing it at the end to ensure that it has integrity before we put the pipeline in service. In general, we will be re-vegetating the whole area and when we're done, the right of way that we're going to maintain, it will be about 18 years.

Rob Durward: As part of our environmental plan, PTP will be employing the best available practices for water course crossings. All our water courses are generally constructed by a separate crew. They're very trained in going through water courses. In the 480 some-odd kilometers we have to pipeline through, we've encountered in the order of 1000 water courses,

most of which are what we call drains. Basically, they're flowing water only during the spring run-off.

When they come up to a dry water course, if there is specific habitat, for instance bush or anything like that that needs to be salvaged, we salvage it. Once they've got the top layer off, then they dig the ditch, then they put the pipeline in and that's back filled and then the top layer's re-established. The contours are put back in place. Once they've done their job, then there's a restoration crew that comes in and they either reseed it with approved seed or they do some other enhancements to the water course.

The bulk of our water course crossings will have water in them and may or may not have fish. They'll range from a meter to probably four meters wide. Before we even touch the water course, we've studied it to determine if there's fish there, what kinds of fish, what's the best time to cross that stream, so that we minimize the impact because what we want to do is make sure that when we excavate, we're not digging through the water because again, we would add sediment to the water course. If there's fish in it, we get the fish out of there by electro-fishing or by netting them. Then we take the water out of the isolated area, and pump it downstream so it's clean water going downstream.

Then once our water course is dry, we send in our excavators. They excavate the top layer of the bed and banks and store that separately. They then dig the trench and the pipe is then put in the trench, it's back filled, and then we put the top layer back on. Our plan is to get in there early in the morning, complete our water course crossing by the end of the day. We have 13 water course crossings that are large and in order to cross them in the best practice, we've chosen to use what we call trench-less techniques; a bridge, or an aerial crossing. The trench-less techniques' common term is horizontal directionally drilled. Our directional drills are anywhere from six hundred meters to a little over 1000. They could take us almost two months to complete.

When we undertake a directional drill, we're roughly two hundred meters on either side of the water course, minimum. We have the pipe that's going to go in the hole already welded up and tested. The drilling rig then sets up at the entry point, drills underneath the water course by a minimum of eight meters below its lowest point and comes out the other side. Once its got the hole done, the rig attaches to the pipe and pulls the pipe into the hole towards the entry point. Once that's done, the rig is pulled out of the way and we weld the section to the pipe that's on the ground. Then, it's retested so it's actually tested twice underneath the water.

We have about three or four bridge crossings. You have a clear-span bridge over top of the water course and on that bridge, you have a decking that is used for vehicle access, but on the side of the bridge, you have our pipeline. The third category of major water course crossings is an aerial crossing, which pipe is suspended above ground, over the water course and the water course is not affected at all. No matter what crossing technique we use, we're trying to minimize the impact on the water and the fish and other aquatic habitat.

Bao Vang: We are committed to the highest possible standards because this pipeline will be in operations for a minimum of 40 years.

Fred McKenzie: About 90% of the people out here are local. They know it's their backyard, too. When you go up to them and explain the environmental regulations and what we're supposed to be doing here, they understand what's really at stake here.