

# Yukon Energy Major Project Updates



- Carmacks Stewart Transmission Project
- Mayo B

Sept. 2010

## Carmacks-Stewart Stage 2

Crews are almost finished installing Stage 2 of the Carmacks to Stewart transmission line. Valard Construction (the main line construction contractor) and Arctic Power (one of Valard's partners) have just about completed the work of setting and framing the power poles and stringing the line between Pelly Crossing and Stewart Crossing. They expect to be finished by the end of October.

Valard, in partnership with the Northern Tutchone First Nations, is the same company that built the transmission line for Stage 1, which runs from Carmacks to Pelly Crossing. Valard has again partnered with the Northern Tutchone First Nations to complete Stage 2.

The other major part of this project involves building or modifying three substations. A new substation is needed at Stewart Crossing to join Yukon Energy's two transmission systems (the Whitehorse-Aishihik-Faro grid and the Mayo-Dawson grid). Another substation is being built at Pelly Crossing. An existing substation at Minto Landing must be expanded to accommodate the new section of line.

Work on the substations has started and should continue until next spring, with a short break during the cold weather period. This job is being done by F & M Installations Ltd., a company based in Nanaimo, B.C.

The entire project is on budget and the line is scheduled to be in service by the beginning of May 2011. The new line will connect Yukon's two major power grids, giving more flexibility and stability to Yukon Energy's transmission system.



Installing crossbars. Photo: [www.archbould.com](http://www.archbould.com)



At Stewart River looking south. Photo: Yukon Energy

Please note that there will be times during work on the substations that Pelly Crossing and the Minto mine will need to be powered by diesel generation. That is so the crews can work safely. We apologize for any inconvenience and promise to only interrupt the hydro supply when it is absolutely necessary.

## Mayo B Update

The Mayo B project is proceeding on schedule and all the work originally planned for the 2010 construction season will be finished by the end of this year.

Yukon Energy's construction contractor, Peter Kiewit Infrastructure Company, has completed 80 percent of the earth removal needed for the penstock (underground pipe) that will carry water from Wareham Lake to the new powerhouse being built three kilometres downstream from the existing plant. Work on the 300 metres of rock tunnel that will run from Wareham Lake to the penstock, has also recently started.

Over the winter, there will be a small crew at the site preparing sections of the penstock for installation next spring.

Some Mayo residents had expressed concern that Five Mile Lake might drain into the trench being dug for the penstock. However there haven't been any problems in this regard.

The power house work is progressing extremely well. All the concrete work on the powerhouse will be finished by the end of this year. Over the winter a crew will prepare the building for the installation, in early spring, of the structural steel. The powerhouse will be completed next year.

Once Mayo B is in service by the spring of 2012, the power that can be generated at the site will increase from the current five megawatts to 15 megawatts.

### Come for a Tour

Throughout the summer, Kiewit has been offering site tours to Mayo residents. These tours are taking place each Sunday starting at 2 p.m. So far about 30 people have come for a tour, including five members of the Na-cho Nyak Dun Council. The tours will continue until October 10th and will resume next spring.



*(Top to bottom): Construction of the Mayo B powerhouse; location where tunnel will join penstock. Overview of the penstock route with seeding on adjacent slopes to prevent erosion. Photos: archbould.com and KGS.*

## Improvements to Mayo A



*Construction on the Wareham Lake dam. Photo: Archbould.com*

As part of Yukon Energy's on-going improvements to our assets, we are making a number of upgrades to our Mayo A facilities. By doing this work now, while Mayo B is being built, we can take advantage of economies of scale in terms of building materials such as concrete and gravel.

### Mayo A improvements:

- ~maintenance/strengthening of the Wareham Lake dam. To do that we have upgraded the bridge on the dam so that construction vehicles have access to the site.
- ~removal of loose/broken rock at the Wareham Lake intake to improve safety
- ~replacement of wooden planking at the Mayo Lake spillway
- ~replacement of the existing Mayo substation. The new substation will allow Yukon Energy to tie in the Mayo-Dawson transmission line to the Whitehorse-Aishihik-Faro grid via the new Carmacks-Stewart line.

## Mayo Lake Studies

Yukon Energy is looking at using additional water from Mayo Lake for power production at the Mayo generating plant. Before we know how this can best be achieved we must study the lake's ecosystem to better understand what the potential effects might be.

Over the last several months, Yukon Energy worked with consultants, the First Nation of Na-cho Nyak Dun (NND) and the First Nation's technical advisors to complete detailed fish (trout and lake whitefish) and fish habitat studies, observing how the ice forms and melts, and doing wetland studies at the end of Roop Arm.

Yukon Energy will review and analyze the information with our technical working group partners from the NND. We'll share the results with the NND membership, other Mayo residents and key stakeholders later this fall.

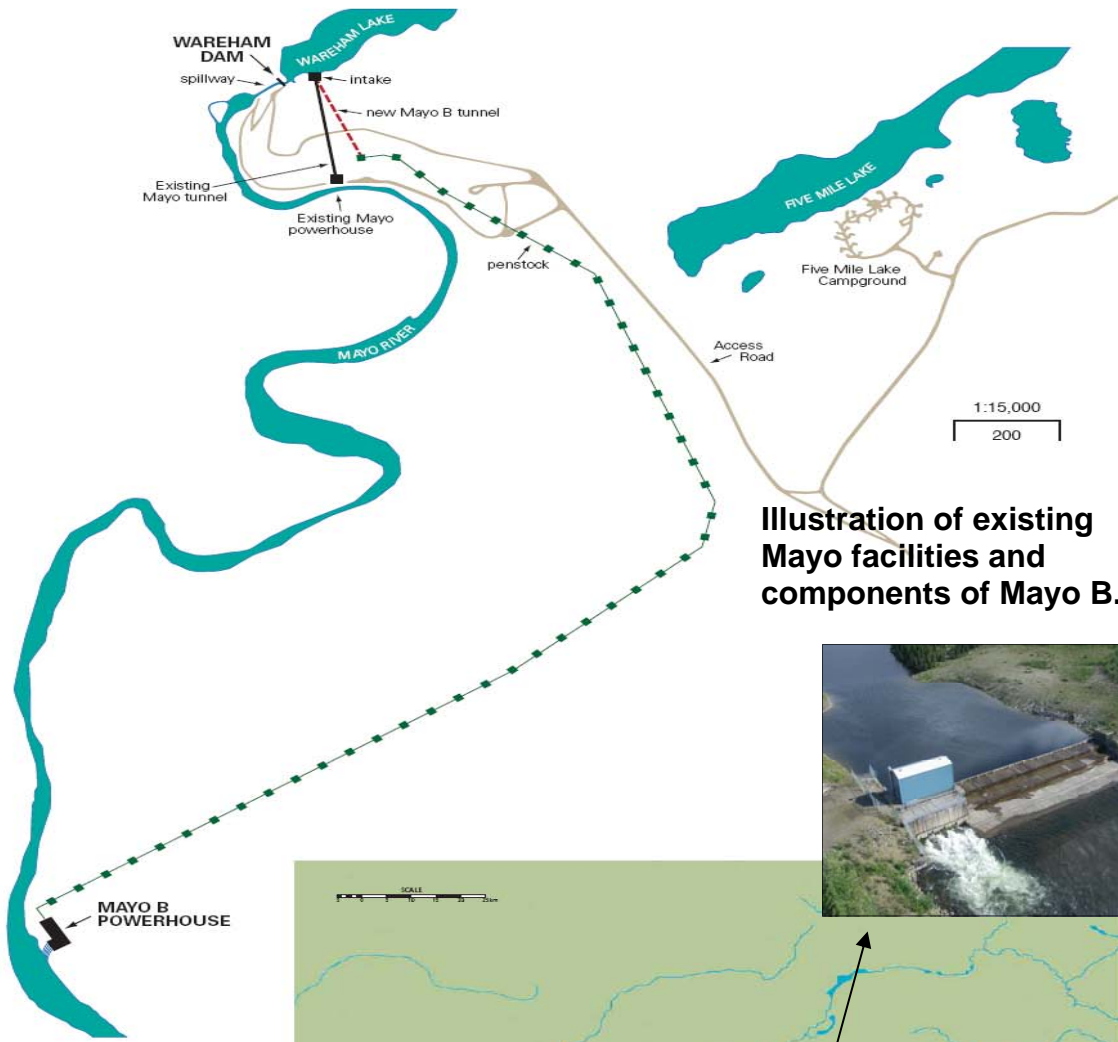
Yukon Energy expects to make a submission to the Yukon Environmental and Socio-Economic Assessment Board within the next few months.

In addition to the studies, Yukon Energy worked with the NND's heritage department this summer on a project to protect and preserve two heritage resource sites around Mayo Lake.

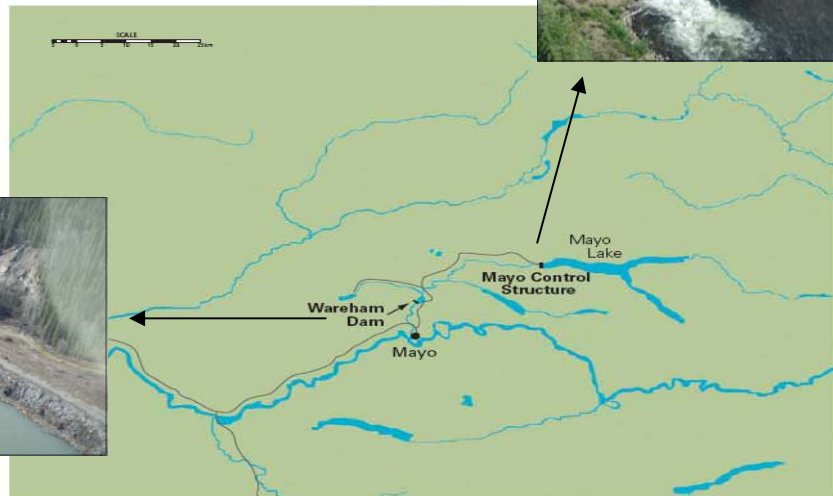
One site yielded a large number of scrapers, flakes, arrow heads, burned bones and other tools. The artifacts were recovered, catalogued and now rest with the heritage departments of the NND and Yukon government.



The second site was protected from future shoreline erosion with riprap.



**Illustration of existing Mayo facilities and components of Mayo B.**



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The Mayo B and Carmacks-Stewart Transmission Project Stage 2 is being paid for in part by the federal government through its Green Infrastructure Fund (up to \$71 million). Additional contributions will come from the Yukon Development Corporation, the First Nation of Na-cho Nyak Dun and the Yukon government (\$52.5 million). Electrical customers will cover the rest of the cost (\$36.5 million).