Dempster Fibre Project

Reliable internet service for the Yukon and the North

2021 annual project update

DEMPSTER FIBRE LINE

Yukon

Executive summary

After two years of planning and engagement work with our partners, I am pleased to report progress on construction of the Dempster Fibre Line. This is an important infrastructure project for the Yukon and the North that will serve generations ahead of us. Reliability of telecommunications is essential to our society, community and economy today. And this project does just that. This project involves the installation of a fibre optic line along the Klondike and the Dempster Highways, connecting Dawson City, YT, and Inuvik, NWT. Through our work on this important project, we are writing a new story, one that takes ambitious, ground-breaking steps forward in so many areas.

Over the last two years, we worked closely with our First Nation and Indigenous partners, both in the Yukon and the Northwest Territories. Input and feedback from citizens, collected over a dozen open house information sessions held in communities and another series of meetings with leadership, was critical in the design and planning of this project. As the project moves forward, engagement and information sharing activities will continue to occur. Respectful and meaningful relationships with our partners is the first pillar of this project.

Environmental stewardship is the second pillar of this project. Two separate environmental approval processes, lasting over 18 months, were undertaken for this project. Multiple values for flora, fauna, water bodies and the land were individually assessed, and appropriate mitigation measures were put in place. We were fortunate to have access to traditional and cultural knowledge in addition to western scientific knowledge for these processes.

Localization of economic opportunities is the third pillar of this project. We embarked upon an innovative and unique procurement model for this project, called the "First Nations and Indigenous Participation Plan."

The fourth and final pillar of this project is strategic infrastructure. We are building infrastructure that is resilient, sustainable and that bridges an important gap for Yukoners and Northerners.

I am very proud of the work that the project team at Highways and Public Works has done with multiple partners – public, private, Yukon First Nations and NWT Indigenous. Without the contribution of multiple departments, agencies, consultants and contractors, this work would not have been possible.

Paul McConnell, Deputy Minister
Highways and Public Works

About the project

The Dempster Fibre Line is an 800-kilometre fibre optic line along the Dempster Highway from Dawson City, Yukon, to Inuvik, Northwest Territories.

The line will connect to the existing Mackenzie Valley Fibre Link in Inuvik. Together, the new line will complete a 4,000-kilometre network called the Canada North Fibre Loop (CNFL) that will provide communities along the route, as well as communities dependent on satellite link, with a backup line in the event of a service disruption, ensuring they have more reliable internet and cell phone service.

In 2018, Hemmera, an environmental consultant with an office in the Yukon, was hired. They acted as the permitting consultant on the project, leading environmental assessments in both the Yukon and Northwest Territories.

In early 2019, Stantec Architecture was hired to develop the design and oversee the construction of the fibre optic line. They are supported by Tetra-Tech, who is providing the geotechnical engineering services on the project.

ROHL Global Networks, in partnership with Dagoo Services, was awarded the $67 million construction contract in May 2021. More than 20 per cent of the contract value will be subcontracted to First Nations businesses.

Contributing partners

The Dempster Fibre Line is jointly funded by the governments of Canada and the Yukon, as well as NorthwesTel.

The Government of Yukon will own the fibre line, and NorthwesTel will lease and operate the line for a period of 20 years.

Since January 2019, the government has worked closely, through consultation and engagement, with the eight First Nations and Indigenous Groups whose Traditional Territory the fibre line will cross here in the Yukon and the Northwest Territories.

This engagement has occurred at all stages of project development, from inception to project design and from procurement methods to job opportunities.

The fibre line, once complete, will traverse the traditional territories of:

- Tr'ondëk Hwëch'in;
- the First Nation of Na-Cho Nyäk Dun;
- the Vuntut Gwichin First Nation;
- Ehdiitat Gwich'in Council;
- Gwichya Gwich'in Council;
- Tetlit Gwich'in Council;
- Nihtat Gwich'in Council; and
- Gwich'in Tribal Council.

The region is renowned for its spectacular beauty and pristine environment. We've carefully planned and managed construction work to minimize impact to the natural environment.

A spruce grouse in the underbrush.

Environmental monitor training graduates (Dawson City, Yukon).

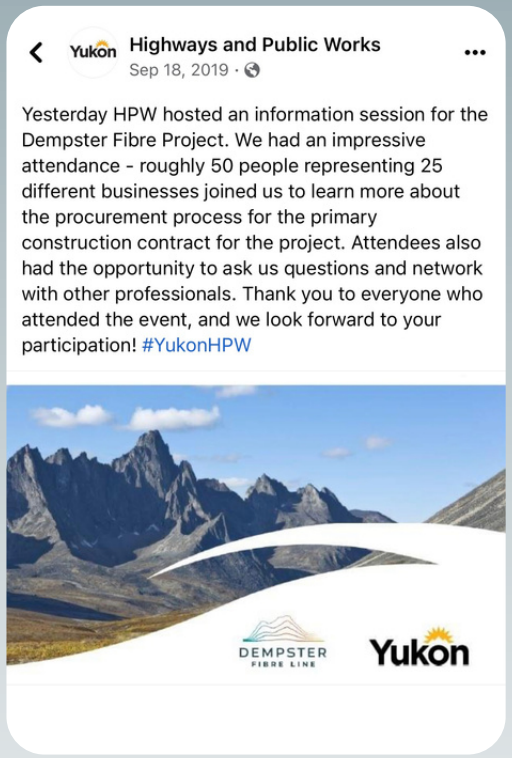
A Cross Fox, a color variation of the Red Fox.

Sustainable development has been an important part of project planning and management. This includes:

- a high level of engagement with affected First Nations during planning and ongoing construction activities;
- designing procurement and contracting activities to provide local opportunities and benefits;
- providing training to enhance Indigenous employment opportunities; and
- continuous environmental monitoring and reporting throughout project implementation.

Procurement

The project achieved a major milestone this year with the conclusion of the procurement phase. It was an ambitious procurement plan that contained many firsts for the Yukon and was featured in the Canadian Collaboration for Sustainable Procurement's 2020 Annual Report.



The project was included for its innovative approach and focus on First Nations involvement. A four-step process was undertaken for the procurement, each one custom-tailored to the project and focusing on building relationships with First Nations governments, Citizens, businesses and contractors.

Step 1: Meeting with First Nations governments and Indigenous groups

This step involved the project team meeting with First Nations governments and Indigenous groups numerous times early on in the project. The first meetings were held to present and discuss the overall project, while later meetings focused on discussing the interests of the First Nations and what could be done to involve them in the project.

Following these meetings, a procurement plan was developed and shared with First Nation governments and Indigenous groups in order to collect their feedback and make improvements.

Step 2: Request for Qualifications

The government held a public procurement to shortlist contractors who were both interested in and capable of taking on the construction work for the project. This laid the foundation for the relationship between the government and potential contractors by giving us a finite number of contractors to engage with for the next steps.

Community tour with shortlisted contractors.

Step 3: Open houses

The Yukon government worked with First Nations governments to bring the shortlisted contractors to each of the First Nation and Indigenous communities that have Traditional Territory along the fibre route.

Open house event in Old Crow.

The project team held open houses in each of the communities to introduce the contractors to potential businesses and employees interested in working on the project. This step allowed contractors to learn about and understand the resources that were available locally that they could work with on the project.

Step 4: Negotiated Request for Proposals

Using a negotiated process for the procurement allowed the government to negotiate with the contractor after the proposals were received. This gave the contractor and the project team an opportunity to develop their working relationship and build a strong team prior to beginning the construction contract.


Open session during the 2020 Industry Conference in Whitehorse.

Results

The unique First Nations and Indigenous Participation Plan used on this project has resulted in over 20 per cent of the benefits, ranging from business, employment and training opportunities, being directly allocated to various communities affected by the project. This includes allocations for Yukon First Nations as well as Indigenous groups with Traditional Territory along the route.

Training program

This project is the first of its size in the Yukon that incorporated a negotiated procurement plan. This plan has and will continue to result in direct employment and training opportunities for First Nations Citizens and sub-contracting opportunities for First Nations businesses.

During community open houses, the interest that local citizens had and the value they could bring to the project was clear, particularly when it came to protecting the environment and ensuring that environmental mitigations were followed. We collaborated with First Nations and Indigenous governments to address this interest, build capacity and ensure the availability of trained workers for the project.

We delivered certification courses in both wildlife and environmental monitoring to First Nations and Indigenous Citizens in four groups: two in Inuvik, NWT, and two in Dawson City, Yukon. A total of 26 people attained certification.

This certification from Aurora College is recognized by the Environmental Careers Organization of Canada and will provide the graduates with employment opportunities during the construction of the line and in their future careers. Building this local capacity helps to ensure that local knowledge is incorporated into environmental work for this project and future projects in the area. A number of the graduates have already been using their certification in the industry, as well as on the fibre project itself.

Continued opportunities will be offered to affected First Nations' citizens over the course of the project.

Roles that we've identified for future training and development include:

- fibre optic splicing;
- fibre optic network development;
- GPS technician, and
- project management.

Environmental monitor training graduates (Inuvik, Northwest Territories).

Construction

Clearing and brushing equipment.

The plow cat, equipped with and ready to install cable conduit.

We've minimized clearing along the route, as much as possible, to reduce long-term environmental impacts.

Before we can put fibre optic cable in the ground, we need to install the cable conduit - the orange tubing. We use low-impact methods for this work. For example, we used a plow to create a 1-metre deep furrow, then immediately placed the conduit.

The fibre optic cable will be installed into the conduit later, then connected to the network.

Most construction activities will take place in the Klondike and Dempster highways' existing rights-of-way. The rights-of-way run alongside the highway on both sides.

The land is already developed and subject to ongoing highway-related activities. As a result, new impacts to the environment from construction activities there are minimal.

Construction activities started with clearing and brushing. Then, specialized equipment like the locally owned and operated unit pictured top left, clear a path for fibre optic cable installation.

The plow cat in operation.

Operators and equipment follow the conduit install. They cover the furrow and clean up the ground surface.

This method of installation will protect the cable for low maintenance throughout its lifetime and promote regrowth of impacted vegetation.

An important part of this project is to minimize ground impacts. The installed conduit leaves little evidence of recent construction work.

Project operations include special consideration for the protection of permafrost, wetlands, caribou and nesting birds.

Completed conduit installation.

Most of the project's construction activities are planned for summer and autumn. This way, we can determine accurate permafrost depths and adjust construction methods to preserve the natural environment.

Avoiding permafrost contact protects ground structural integrity. It also reduces potential impacts, such as water flow pattern changes and associated erosion and water body sedimentation risks.

We considered six broad valued components during the environmental assessment stage:

- permafrost;
- fish and fish habitat;
- wildlife and wildlife habitat;
- vegetation and wetlands;
- heritage resources; and
- settlement lands.

Seasonal construction work wrapped up in October 2021 and equipment has been demobilized.

During this year of construction, we installed 30 kilometres of conduit along the Dempster Highway.

Spools of cable conduit await installation.

What's next

We continue to engage with impacted First Nations along the line's route to:

- gain planning input on topics including permafrost and heritage resources; and
- provide work schedule updates and environmental reports.

Field work will resume in late spring 2022 with wildlife and environmental activities. These include identification of wolf dens and invasive species, as well as observations of nesting birds.

Construction work on the Dempster Fibre Line project will proceed as planned in the 2022 construction season. Work will be focused on the summer and early fall months to best protect permafrost.

In the coming construction season, the project will employ more people and increase the stock of equipment on site. This will allow the contractor team to accelerate the speed of conduit installation. We continue to monitor global supply chains and other issues affecting the industry.

This project is built on the idea of continuous improvement to create ongoing value; the end-goal is to make operations as cost-efficient as possible, both during installation and for the line's active lifetime. We look forward to continuing work on this important piece of infrastructure that will ensure northern communities have access to digital services that work and meet their needs.

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