

# **APPENDIX I**

## **Waste Management Plan**

# Dempster Fibre Project Waste Management Plan



Photo Credit: Devon Yacura, 2018

**Submitted to:**

**Mackenzie Valley Land and Water  
Board**  
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## 1.0 PROJECT BACKGROUND

The proposed Dempster Fibre Project (DFP) is a Yukon Government-driven project intended to provide a redundancy loop, known as a fibre ring, for 39 terrestrial-served and 36 satellite-served northern communities in BC, Yukon, NWT, and Nunavut. This loop will be completed by running an 800 km length of fibre cable along the Klondike Highway from Dawson City, YT, to the Dempster Highway junction, then north up the Dempster Highway to Inuvik, NWT. The fibre cable will connect to the recently constructed Mackenzie Valley Fibre Link (MVFL) at Inuvik. Once complete, 78% of northern communities will benefit from the redundant loop created by this Project.

The Dempster Highway extends for 735 km from the Dempster Highway junction, 40 km east of Dawson City, to Inuvik, NWT. Other than Inuvik, there are two communities along the Dempster Highway: Fort McPherson and Tsiigehtchic, both located in the NWT. There are two river crossings along the highway at the Peel and Mackenzie Rivers that require ferry crossings during the summer and ice road crossings during the winter. The Peel River is located at Fort McPherson and the Mackenzie River at Tsiigehtchic. The highway is located within a legally defined 60 m-wide right-of-way (ROW). Both the Yukon Government – Department of Highways and Public Works and the Government of Northwest Territories – Department of Transportation exercise authority over the operation and maintenance of the Dempster Highway in Yukon and the Northwest Territories, respectively.

To the extent practical, the design specifications for construction of the fibre optic cable and conduit will be installed within the highway ROW but away from the existing highway structure. In some instances, the cable will be required to be installed within the existing highway structure (prism). When this occurs, the design will aim to minimize the risk to the highway structure while taking constructability into consideration, as well as life cycle cost and maintainability of the cable.

Due to the variability of conditions encountered along the Dempster Highway, a variety of construction and installation techniques will be employed to successfully install the fibre optic cable including the following:

- Conventional buried cable using heavy equipment to install the conduit and cable at a depth between 600 mm – 1,000 mm below ground.
- Shallow direct-buried cable using cable plowing techniques
- Surface-laid cable in sensitive terrain and wetland areas in non-frozen and frozen conditions.
- Horizontal Directional Drilling (HDD) of fish-bearing streams, rivers, other waterbodies and challenging sections.
- Aerial cable installation in selected sensitive or challenging construction areas.
- Aerial cable installation along Yukon Energy Transmission Line poles for approximately 28 km adjacent to the Klondike Highway and over Australia Hill.

### 1.1 Company Name, Location and Mailing Address

Yukon Government  
Highways and Public Works  
9010 Quartz Road  
Whitehorse, YT Y1A 2C6  
Main Contact: Darryl Froese – Project Manager  
Phone: (867) 667-3089  
Email: Darryl.froese@gov.yk.ca

## **1.2 Effective Date of Waste Management Plan**

The plan will be in effect from the date of issue of the permit and will expire on the date that the permit is closed.

## **1.3 Purpose and Scope**

The purpose of this plan is to minimize the amount of waste generated by the DFP, and where possible, reuse and recycle material that would otherwise be directed to the landfill. Minimizing, reusing and recycling materials and packaging can reduce waste disposal and material costs, especially in a northern setting, where disposal and transportation costs are increased. Waste reduction will be achieved through best management practices and recycling or reuse efforts.

Adequate training of staff and contractors will be paramount to minimizing the amount of waste generated and maximizing the volume of waste that is recycled or reused for another purpose. Government of Yukon Department of Highways and Public Works (HPW) and its contractor(s) will be required to follow this Plan for the disposition of the waste generated by their activities. This Plan applies to the construction, operation and maintenance of the DFP.

## **1.4 Distribution List**

This plan and the most recent revisions will be distributed to all staff and contractors working on the Project. The Plan will be presented and reviewed during a tailgate meeting prior to the start of construction. The Waste Management Plan will be included as part of new staff orientation activities.

## **1.5 Additional Copies**

Several copies of the plan are to be kept on site at all times. A copy is also to be held at the HPW office in Whitehorse and with the Mackenzie Valley Land and Water Board. Additional copies of the plan can be obtained by contacting HPW directly at the phone number or email presented in **Section 1.1**.

## **1.6 List of Revisions**

Any revisions to the plan will be submitted to the Mackenzie Valley Land and Water Board for approval prior to implementing any changes.

## **1.7 Licences, Permits and Fees**

All non-hazardous and hazardous wastes related to the construction, operation and maintenance of the DFP will be handled, stored and disposed of in accordance with this Plan, and all applicable federal, territorial, and municipal laws and regulations. HPW and its contractor(s) will be responsible for any required fees, licences, and permits.

## **2.0 WASTE PRODUCTION SUMMARY**

Waste will inevitably be produced during construction, operations, and maintenance of the DFP. The following sections discuss the various sources of waste that are expected to be produced and the potential methods of disposal.

## **2.1 Non-hazardous Construction Waste**

The majority of waste generated for the DFP will be produced during the construction phase. During construction, the Project will generate municipal solid waste and construction waste. Types of construction waste may include:

- Packaging for material and supplies such as plastics, cardboard and scrap metal,
- Waste wood such as pallets, framework or other sources of scrap lumber,
- Drilling fluids and cuttings,
- Waste water from drilling,
- Human and household waste produced by on-site personnel at camp facilities and,
- Cleared vegetation.

## **2.2 Non-hazardous Operations and Maintenance Waste**

During operations and maintenance, the Project will generate small volumes of construction waste, including packaging for material and supplies such as plastics, paper and cardboard products, and scrap metal. A small volume of wood waste and domestic refuse may also be produced.

## **2.3 Hazardous Waste**

HPW anticipates that small amounts of hazardous waste may be generated during construction, operations, and maintenance of the DFP. Hazardous materials that may be generated include automotive fluids, fuel, or any materials contaminated by hydrocarbons. Contractors will maintain an inventory of all hazardous materials that are stored on site and will limit the quantities of hazardous materials brought on-site to minimize the amount of hazardous waste generated.

### 3.0 WASTE MANAGEMENT FACILITIES

The following is a list of approved waste management facilities located along the Dempster Highway, including Dawson City:

#### Inuvik

- Inuvik Solid Waste Disposal Facility
  - Location: Airport Road, beside Inuvik golf course
  - Phone: 867-777-8615
- Inuvik Recycling Depot (Caps Off Recycling)
  - Location: 4 Carn Road
  - Phone: 867-777-2434
  - Accepts beverage containers and electronics
- Inuvik Sewage Lagoon
  - Location: North of town, Tank Farm Road
  - Phone: 867-777-5936

#### Dawson

- Quigley Landfill
  - Location: Molison Drive, approx. 9 km from downtown Dawson
  - Phone: 867-993-7400
- Dawson Recycling Depot (Conservation Klondike Society)
  - Location: 1067 2<sup>nd</sup> Avenue
  - Phone: 867-993-6666
  - Accepts beverage containers and electronics

#### Fort McPherson

- Fort McPherson Solid Waste Disposal Facility
  - Location: Approximately 6 km northwest of community center.
  - Phone: 867-952-2428

#### Tsiigehtchic

- Tsiigehtchic Solid Waste Disposal Facility
  - Location: Approximately 1.7 km east of community center.
  - Phone: 867-953-3302

## **4.0 MATERIAL STORAGE AND DISPOSAL**

All waste will be stored within bear-proof designated temporary waste collection areas until it is collected for transport to an approved facility. These waste collection areas will be designed to minimize attractants to reduce wildlife conflicts. Materials that can be recycled will be stored separately from garbage. Used oil will not be mixed with other solid or hazardous waste and will be stored separately within appropriate secondary containment in accordance with all applicable rules and regulations.

### **4.1 Hazardous Waste**

Hazardous wastes generated during the construction will include waste oils, lubricants, fuels, filters, etc. Hazardous wastes will be temporarily stored at the mobile camp/motorhomes in clearly marked containers with lids (i.e., drums). The materials will be removed on a regular basis for transportation to the nearest approved hazardous waste management facility in Yukon or the NWT for treatment/disposal. If other contaminated materials require disposal (i.e. spill pads), these will be disposed of through a licensed facility (e.g. KBL Environmental Ltd. in Whitehorse). All hazardous waste shipments will be manifested and records retained for future reporting to the appropriate regulatory agencies in Yukon and the NWT.

### **4.2 Non-hazardous Waste**

All non-hazardous waste will be disposed according to the Waste Management Principles described in Section 4.3.

### **4.3 Waste Management Principles**

#### **4.3.1 Waste Segregation**

Segregation of all waste streams by type or category will avoid potentially undesirable combined effects and will facilitate the reuse, recycling, recovery and/or disposal of the various wastes. To the extent practicable, sorting will take place at the source and the sorted waste will be stored at the site. Contractors at the site are required to manage the waste generated from their activities in a manner compatible with this Waste Management Plan.

#### **4.3.2 Brush and Timber**

Mulching activities within the proposed corridor will generate clippings, timber and other vegetation, requiring management. Timber felling will be avoided as much as practical, however, some felling including the removal of danger trees is anticipated.

When practical, trees will be felled into the corridor and work space, away from waterbodies and adjacent stands. Larger trees (greater than 10 cm in diameter) will be bucked into manageable pieces and left in place. Felled trees will not be left leaning and danger trees that pose a potential risk to field crews will be removed. Care will be taken to not obstruct known or visually obvious, watercourses, wetlands, trails (hunting or trapping) and wildlife trails.



During mulching activities in the winter months, residual debris including snow and ice is anticipated. When practical, this material will be left in place. In higher brush areas, where management is required, the material will be pushed aside into consolidated piles along the route. Care will be taken not to obstruct known or visually obvious, watercourses, wetlands, trails (hunting or trapping), and wildlife trails.

#### **4.3.3 Solid Wastes**

All solid wastes generated by the mobile camp and motorhome operations will be temporarily stored on site prior to biweekly or weekly transport and disposal in the nearest municipal solid waste facilities mentioned above in Section 3.0. As required, solid wastes will be stored in secure containers to prevent access by wildlife.

Agreements will be made with waste facilities prior to any work beginning in a given area. All solid wastes will be transported and disposed of in municipal facilities as per agreements negotiated between contractors and the communities. No solid wastes will be left or disposed of on the land.

#### **4.3.4 Sewage**

As a primary operation, sewage generated by the DFP will be temporarily and securely stored at camp locations and in the motorhomes and transported regularly for disposal in municipal sewage disposal facilities along the route. If required, porta-johns and/or pacto toilet systems will be utilized. Prior to construction, agreements will be made with municipalities to allow disposal of sewage in their facilities as required.

#### **4.3.5 Greywater**

All camp greywater generated by the DFP will be temporarily and securely stored at camp locations and motorhomes and transported regularly for disposal in municipal sewage disposal facilities along the route. Agreements will be negotiated with municipalities to allow disposal of sewage in their facilities.

If this becomes impractical, due to distance or other reasons, greywater will be treated and discharged to a sump or natural depression located at least 100 m from the ordinary high-water mark of any waterbody and in compliance with all applicable legislation.

Treated greywater from any camp will be discharged to the surface in such a way as to limit pooling and erosion and sumps will be monitored regularly to reduce animal interactions. When required, the sump will be covered appropriately with local material and left to settle naturally.

#### **4.3.6 Drill Mud**

Directional drilling will require the use of drilling fluids to aid in drilling and cutting retrieval. Drilling fluids consist of water with an inert bentonite additive to maintain the drill bore and to aid in cooling, cuttings retrieval and stabilization of the hole. Drill cuttings and fluids will initially be contained and stored in mud tanks at the respective drilling locations. For minor HDD, the drill mud and cuttings will generally be contained within the drill pits. Depending on the sensitivity of the local environment and proximity to potentially fish-bearing water bodies, the drill cuttings and associated drilling fluids will be disposed of in nearby natural depressions, transported for disposal in existing Dempster Highway borrow pits (subject to landowner permission) or, subject to community approval, in the nearest municipal solid waste facilities located along the highway.

#### **4.3.7 Recycling**

Recyclable materials may include paper, aluminum cans, corrugated cardboard, glass, aerosol cans, wood, plastic, and metals. As of October 2018, the Inuvik Recycling Depot only accepts beverage containers (cartons, bottles, cans, etc.) and electronics. The Town of Inuvik is understood to be developing additional recycling options. To the extent that local programs are available and can be implemented, these materials will be recycled. If no feasible recycling options can be identified, the recyclable materials will be disposed of as refuse.

#### **4.3.8 Salvage and Reuse**

Salvage is the recovery of materials for on-site reuse, off-site sale, or donation to a third party. Reuse is making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. To the extent practicable, materials will be salvaged and/or reused to divert them from the community landfills. Options for the salvage and reuse of wood pallets or other wood products in particular will be discussed with the community prior to disposal.

### **5.0 WASTE MINIMIZATION**

HPW and their contractor(s) will minimize the amount of construction waste and debris disposed of in the community landfills to the extent possible. HPW and their contractor(s) will be responsible for communication and training of field personnel and subcontractors regarding waste management.

#### **5.1 Packaging**

All vendors and their suppliers will be encouraged to minimize the packaging for materials and equipment and to identify opportunities for the return of packaging materials for reuse. Packaging materials will be evaluated, and their selection will take into consideration opportunities for reuse and recycling.

#### **5.2 Materials Storage**

All materials will be stored in a manner to prevent contamination, expiration and deterioration. This ensures that the material will meet the specified requirements and that unused or outside-specification products will not become waste. Inventory control procedures will be implemented by HPW and its contractor(s) to ensure that excess materials are not brought on site.

## **APPENDIX J**

### **Confirmation of Capacity at the Inuvik Solid Waste Disposal Facility**

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**From:** rcampbell@inuvik.ca  
**Sent:** August 16, 2019 2:45 PM  
**To:** Matthew.Manuel@gov.yk.ca  
**Subject:** Re: Dempster Fibre Project - Waste Disposal

Matthew

Yes the town of Inuvik Solid waste site has the capacity to handle the waste from this project. Keeping mind we do not except any hazardous waste from out of town sites. And there is a copy of the solid wast fees on the towns web site.

Thanks  
Rick Campbell  
Director of Public Works  
Town of Inuvik

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**From:** Matthew.Manuel@gov.yk.ca  
**Sent:** Friday, August 16, 2019 3:25:39 PM  
**To:** Rick Campbell  
**Subject:** Dempster Fibre Project - Waste Disposal  
Hi Rick,

My name is Matthew Manuel, and I am supporting the upcoming Dempster Fibre Project, an 800-km fibre optic cable project which will run from Dawson City Yukon, to Inuvik, Northwest Territories. Currently we are looking into the available options for disposing waste generated by the project. Construction of the entire project is currently expected to take approximately 2 years, and construction is expected to begin next year.

The waste generated will be primarily that from the construction camps. These camps will be stationed in various locations along the Dempster and will likely be fewer than 50 persons.

If you could provide confirmation that the town of Inuvik and the solid waste facility is capable of accepting this level of waste generated from the Northwest Territories portion of the project, that would be greatly appreciated.

Regards,



**Matthew Manuel**  
Business Analyst Student  
Highways and Public Works  
ukon.ca