



# Waste Management Plan for NWT Highway 3&4 Operations and Maintenance Land Use Permit

Government of the Northwest Territories – Department of Infrastructure



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## **Introduction**

The Government of the Northwest Territories (GNWT) Department of Infrastructure (INF) is applying for a land use permit renewal for the ongoing operations and maintenance activities for NWT Highway 3&4, currently issued under land use permit MV2017X0008.

This Waste Management Plan (WMP) has been developed by INF and will be implemented for all activities undertaken for the life of the Land use permit. The purpose of this WMP is to provide a guide to all site personnel on the waste management goals, objectives and procedures to be used during permitted operations and maintenance activities.

This WMP has been developed in accordance with the Guidelines for Developing a Waste Management Plan, prepared by the Mackenzie Valley Land and Water Board (2011). INF is cognizant of the need to ensure components of the environment, including air, water, land, vegetation, wildlife and fish are not negatively affected by permitted activities. INF has developed this WMP to ensure aesthetic and land use values of the permitted alignment remain intact following expiry of the permit and, ensure INF and its Contractors will comply with all applicable acts, regulations, and conditions outlined in the applicable land use permit and water license for this project.

## **Project / Site Description**

The operation and maintenance of the highway will consist of the following:

- The continuous and ongoing operation and maintenance of the existing NWT Public Highway system within the permit corridor along the Yellowknife Highway (NWT No.3) between kilometer 124 and kilometer 338.8 (end of highway #4) and along the Ingraham Trail (NWT No.4) between kilometer 0 (intersection with the Yellowknife Highway at km 337.3) and km 69.2 (Tibbitt Lake – the end of the highway) and includes the Community Access Roads for Behchokè and Dettah and other minor roads along the Yellowknife Highway – Ingraham Trail Corridor and as listed under the Public highways Act and Commissions Land for the Government of the NWT and includes all highways, roadways and other transportation infrastructure (i.e. roadway embankment maintenance, rehabilitation and reconstruction; bridge structures maintenance and replacement; culvert maintenance and replacement; establishment and maintenance of drainage channels, winter roads construction and maintenance; etc.). All operations and maintenance activities will be undertaken following the standards for highway maintenance as outlined in the Highway Maintenance Standards Manual, normal

construction practices and in accordance with the various regulatory agencies, as applicable:

- The Permit area will be two (2) kilometer in width, one (1) kilometer on each side of the existing public highway/roadway centerline through the entire length of the permit corridor including access and minor roads as listed in the Public Highways Act;

- To access existing or future quarry areas within and outside the two (2) kilometer corridor;

- To develop new or further develop existing borrow areas to obtain granular borrow materials, common materials, blast rock (including use of explosives). rip-rap, clay, sand and gravel, from areas outside the existing 60 metre wide Public Highway corridors through applications to GNWT-ECC for Quarrying Permits;

- To carry out geotechnical investigations in the search for gravels and rock and for gathering preliminary engineering information for the design of foundations for roadways, bridges and other structures {as required};

- To place and maintain granular stockpiles at existing or approved quarry sites for the purpose of ongoing operations and maintenance or the public highway system within the permit corridor;

- To place temporary construction/work camps at existing quarries or previously developed sites within the permit corridor for the purpose of carrying out operations and maintenance of the public highway system and other roadways within the permit corridor;

- To temporarily store construction, operations and maintenance equipment at the various existing quarries or other previously developed sites within the permit corridor while carrying out these activities in the area;

- To access water sources for the ongoing operations and maintenance of the public highway system within the permit corridor:

- To have right of access to one kilometre ( 1 000 metres) on each side (left and right) to the public highway/roadway center line for the purpose of carrying out granular and geotechnical investigations, quarry pit development. drainage channel construction, stockpiling granular and other construction materials and placement of temporary construction/work camps;

-To construct and maintain sand and sand/salt storage facilities at strategic locations along the designated highway corridor; and,

-To construct, operate and maintain pullouts/rest areas at strategic locations along the designated highway corridor.

### **Identification of Waste Types**

Over the course of the project, a number of types of waste may be generated by equipment and crews working within the area. The primary type of waste will include non-mineral wastes; however, some hazardous wastes could be generated. All potential waste types are listed below with further descriptions provided:

#### Non-hazardous non-mineral wastes:

Domestic wastes

Construction materials

#### Hazardous wastes:

Used oil, fuel, lubricants, greases, oil, filters, and solvents

Contaminated soil, snow/ice and/or water

### ***Non-Hazardous Non-Mineral Waste***

Non-hazardous, non-mineral wastes generated will primarily include domestic and sanitary wastes, with construction materials. Domestic wastes will be brought to the site with project personnel in their lunches, crew vehicles, etc., while sanitary wastes will be generated on-site.

Minimal vegetation clearing is expected as maintenance and operations will occur within the already established highway alignment. If clearing is required for quarry operations it will be undertaken as described in the quarry permit application.

The potential environmental effects arising from unmanaged non-hazardous, non-mineral wastes include increased wildlife attractants, potential for sanitary spills or leaks, and possible degradation of water quality, and wildlife and fish habitat quality.

### ***Hazardous Wastes***

Potential hazardous wastes generated on-site include waste oil, fuel, lubricants, oil filters, solvents, etc., from use and maintenance of heavy equipment. Other potential hazardous wastes may include contaminated soil, snow or water should a spill occur during ongoing maintenance and construction activities.

The possible environmental effects arising from unmanaged hazardous wastes include degradation of soil quality, degradation of water quality, and wildlife and fish habitat quality, and harm to on-site personnel.

## **Management of Waste Types**

### ***Non-Hazardous Non-Mineral Wastes***

Within the alignment of the NWT Highway 3&4 the non-hazardous, non-mineral wastes will be temporarily stored in previously cleared areas within the ROW as required. The following management and mitigation techniques may be implemented to reduce the potential for environmental effects associated with non-hazardous, non-mineral wastes:

Domestic wastes:

- On-site, domestic wastes will be stored in clearly marked containers with tight-fitting lids (i.e., garbage cans).
- All combustible garbage will be burned on site in an approved container as determined by the inspector. Any non-combustible waste will be transported back with site personnel and disposed of at the local Solid Waste Facility.

Cleared vegetation:

Minimal vegetation clearing is anticipated; however in the event that some clearing is required the following practices will be employed:

- Trees will be felled away from water sources to minimize the amount of vegetation material that could enter the aquatic environment.
- If clearing trees or packing snow with a dozer blade, mushroom or smear blades will be used and the uprooting of the trees will be avoided. Small trees and shrubs will be cleared by hand, or with the dozer blade to “walk down” the vegetation, with the blade set at a fixed height. The blade will push small

trees and shrubs down and the weight of the machine will compress felled vegetation. The ground cover and surface organic layer will be left in place.

- Burning of brush may be required. If determined necessary, brush piles will be burned away from other vegetation to minimize the risk of fire spreading.

Construction materials:

- On-site, waste construction materials will be stored in clearly marked containers with lids. These waste materials will be transported back to a community, if/when necessary, and disposed of at an approved Solid Waste Facility. These containers will be inspected daily to ensure no domestic waste is disposed of here.

### ***Hazardous Wastes***

Hazardous wastes generated during the permitted operations and maintenance activities will be stored at the designated fueling and contaminant storage area within the project area. This area will be greater than 100 m from a water source; this will prevent potential spills or leaks from entering the creek.

Any hazardous wastes will be stored in clearly marked containers with lids (i.e., drums).

Any hazardous wastes will be removed from the designated storage area a minimum of bi-weekly, if necessary. As the contaminated soil/snow wastes will be transported to an approved waste facility for treatment. If other contaminated materials require disposal (i.e., spill pads), these will be disposed of through a licensed facility. For this transport and disposal, the Contractor or INF will complete the appropriate waste manifest form.

### **Infrastructure Required for Waste Management**

The following types of infrastructure are in place which is required for proper waste management of the operations and maintenance of the highway:

- Cleared vegetation storage area – this area for windrowing or burning will be selected within an appropriate location along the highway alignment by the Contractor and INF site representative;
- Waste storage or disposal facility – Approved Solid Waste Facility;
- Sewage disposal facility – Approved Sewage Facility;
- Appropriate hazardous waste disposal facility – Approved hazardous waste disposal facility.

## References

Indian and Northern Affairs Canada (INAC). 2010a. Northern Land Use Guidelines Volume 7 – Pits and Quarries. Natural Resources and Environment Branch, INAC, Ottawa, ON. Available online: <http://www.aadnc-aandc.gc.ca/eng/1100100023585/1100100023587> (13 November 2012).

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Mackenzie Valley Land and Water Board (MVLWB). 2011. Guidelines for Developing a Waste Management Plan. MVLWB, Yellowknife, NT. Available online: <http://mvlwb.com/resources/policy-and-guidelines> (19 November 2012)