



## IDENTIFICATION

Department	Position Title	
Infrastructure	Highway Maintenance Operator	
Position Number(s)	Community	Division/Region(s)
33-9069	Fort Providence	Highways/South Slave

## PURPOSE OF THE POSITION

This position operates various equipment and uses appropriate tools and materials to maintain the highway system including other related Infrastructure to their design capacity to enable the safe and reliable operation of the highway in accordance with established Federal and Territorial standards and regulations.

## SCOPE

This position is one of several equal positions reporting to the Highway Maintenance Supervisor. The primary work location is the Fort Providence Highway Maintenance Facility responsible for the maintenance of approximately 233 kilometers of highway, the Fort Providence community airport and the construction and maintenance of the Mackenzie River ice crossing. The incumbent routinely operates equipment valued in excess of \$150,000.

Occasionally the incumbent may be required to assist with highway maintenance operations in other areas and the maintenance of other airports. The primary clients are the users of the transportation system. The Highway Equipment Operator primarily maintains all asphalt and gravel surfaces, signs, right-of-way, drainage system and the ancillary infrastructure. Due to the extensive worksite area, the incumbent is given the latitude to choose the appropriate course of action and expected to make decisions and initiate work without close supervision.

The duties of the position provide final results that directly affect the operational safety of the system. Failure of the incumbent to follow approved practices or to make correct decisions regarding methods and materials to be used can create a significant level of risk of liability, property loss and personal injury.

## **RESPONSIBILITIES**

- 1. Monitors the highway, operates mobile equipment and uses various tools and materials to maintain the asphalt and gravel surfaces, signs; right-of way, drainage system other ancillary infrastructure using due diligence to ensure compliance with Federal and Territorial standards and regulations to ensure the safe and reliable operation of the highway system.**
  - Operates heavy equipment (grader, sander, loader, plow truck etc.) to remove snow and ice to improve the safe movement of traffic.
  - Applies the most effective product among available friction enhancing and de-icing/anti-icing materials to improve traction to acceptable levels.
  - Conducts inspections and implements corrective action if required to ensure the public is not subjected to unsafe and unadvertised conditions that could affect the safe operation of vehicles on the highway.
  - Monitors the condition of the highway system and makes recommendations to the supervisor about deficiencies and corrective action required to maximize the useable life of the infrastructure.
  - Operates heavy equipment (grader, crawler tractor, loader, backhoe, water truck, dump truck, tilt trailer, compactor etc.) to repair structural grade failures and surface deficiencies of the highway as well as the replacement of culverts and their construction, and clearing of drainage ditches.
  - Operates heavy equipment to reshape, compact and replace the highway gravel surface to improve the ride quality and extend the useable life of the Infrastructure.
  - Operates heavy equipment (chip spreader, dump truck, oil distributor, compactor, loader etc.) and uses hand and power tools for the patching of asphalt surface to improve ride quality and extend the useable life of the infrastructure.
  - Installs, replaces and maintains highway signs, markers, guide rails and other traffic control devices to ensure driver information and safety structure requirements are met and to enhance safety and ensure compliance with standards and regulations.
  - Using heavy and light equipment and small tools to perform landscaping, litter control, seeding, mowing and clearing of the highway right-of-way to improve esthetics to maintain safe sight distance and to reduce hazards resulting from wildlife crossing the roadway.
  - Prepares highway maintenance materials (asphalt mixes, winter sanding aggregates, chip sealing aggregates etc.) to acceptable and established specifications by using appropriate materials, tools and equipment to ensure the availability of required products.
  - Using appropriate equipment and tools (ice auger, subsurface radar, ice flooding pumps, crawler tractors, grader, plow truck, bombardier etc.) to construct and maintain ice crossings and seasonal winter roads integral to the highway system to permit safe passage of public vehicles over frozen bodies of water and natural terrain.

**2. Follows the Preventative Maintenance Program for mobile equipment and ancillary infrastructure to ensure design capacity is maintained and expected life cycle is attained to reduce the cost of replacing the infrastructure and to ensure minimum 'out of service' time.**

- Performs inspection of equipment prior to use to ensure equipment is safe to operate and to ensure deficiencies are noted and corrected. Identifies repairs required and completes all required equipment deficiency and maintenance records.
- Completes work activity and equipment use records to enable the full accounting of work accomplished and equipment usage for management purposes.
- Cleans equipment, performs minor repairs and servicing and assists mechanic with major repairs to ensure 'out of service' time is reduced.
- Performs visual inspections, minor repairs and maintenance of ancillary infrastructure and makes recommendations to supervisor for corrective action.

**3. Performs other tasks, general maintenance and assists other Department Divisions in the repair and maintenance of infrastructure to ensure safe and reliable transportation system operations.**

- Will act as a lead hand or crew leader as required when several crews are working in remote and different locations in the beat the maintenance supervisor must rely on the leadership capacity of the equipment operator.
- Accomplishing the work to keep the highway system safe is a priority and assuming leadership tasks is required regularly.
- Assists other trades and staff members (electrician, facility maintainer, welder, airfield maintenance specialist, etc.) as and when required to improve the operational efficiencies and effectiveness of transportation systems.
- Performs labour tasks such as shoveling, sweeping, lifting and carrying loads where necessary to perform or complete maintenance functions that large equipment or power tools are unable to accomplish.
- Reports on Runway Surface Conditions and Foreign Object Debris to ensure pilots are aware of any conditions that could affect the safe take-off, landing or maneuvering of aircraft.
- Operates heavy equipment (grader, sander, snow blower, loader, plow truck etc.) to remove snow and ice to provide for the safe movement of aircraft traffic.

## **WORKING CONDITIONS**

### **Physical Demands**

The physical demands of the incumbent require occasional heavy lifting and extended hours driving equipment or trucks on gravel surfaces and in rough ditches. Frequency is 3 times per week and the duration is 1 hour per occurrence. Intensity is high.

## **Environmental Conditions**

The incumbent is expected to work outdoors when not operating equipment and is therefore exposed to seasonal weather extremes, dusty highway conditions and public traffic. Frequency is 2 times per week and the duration is 4 hours per occurrence. Intensity is moderate. Exposure to temperatures of -30 C for up to 30 minutes or more due to breakdowns or maintenance of equipment is not uncommon. During a period of 6 to 8 weeks in winter when the Mackenzie River ferry crossing is under construction the incumbent is subjected to lengthy exposure to extreme cold on a nearly-continuous basis.

The incumbent has daily exposure to hazardous material such as gasoline, propane, diesel fuel, lubricants, and is occasionally required to use hand and power tools. Frequency is daily and duration is 1 to 2 hours per day. Intensity is moderate.

## **Sensory Demands**

Extensive need for sensory attention to safely operate and control equipment, use various attachments and materials, usually operating on surfaces that are wet, slippery, snow covered or dirty. Frequency and duration is the majority of the time. Intensity is moderate.

When using power tools or operating equipment the incumbent relies considerably on his/her sensory feedback to avoid accidents and accomplish the work.

## **Mental Demands**

There is moderate mental stress; but occasionally the incumbent can be involved with seriously or fatally injured persons in a vehicle accident, which would cause considerable mental stress. In addition, mental stress can come from working while accommodating highway traffic and tactfully dealing with the complaints from the public.

Occasionally equipment operation is required when the highway and visibility is extremely poor. There are thin ice conditions on winter roads and a possibility of ground engaging equipment digging into the surface causing equipment to come to an abrupt halt or change direction of the vehicle instantly. Frequency is 10 times per year and the duration is 8 hours per occurrence; Intensity is high.

On a regular basis during the winter season the incumbent is placed on scheduled weekend and statutory holiday standby to ensure available staff for winter storms. This increases the mental stress by not allowing the individual the full freedom of their leisure time to fully participate in family or leisure activities or to travel beyond the community.

## **KNOWLEDGE, SKILLS AND ABILITIES**

- Knowledge of the generally accepted methods of removing snow, controlling ice and the repair of deficiencies on asphalt and gravel surfaces to recognize and perform the maintenance duties of a highway system to ensure compliance with Federal and Territorial standards and regulations.
- Knowledge of and skill in the servicing and minor repair of heavy trucks and equipment to maintain the reliability of the vehicles and to ensure the expected useable life of the machinery is attained.

- Ability to act as a leader for a work crew so that the equipment and labour delivering the work program is used in a safe and efficient manner using planning and organizational skills to coordinate the various work activities and being self-directed.
- Ability to work without supervision using specialized technical skills and knowledge to make rational and reasonable decisions in the effective use of labour, equipment and materials for highway maintenance purposes and avoidance of situations that can result in property loss and damage or personal injury.
- Skill in the operation of heavy trucks, heavy and light mobile equipment and power tools to enable the incumbent to be proficient in accomplishing the required highway maintenance functions.
- Ability to communicate effectively in verbal English to ensure accuracy and understanding of messages given and received through the use of mobile two-way radio communications.
- Ability to communicate effectively in written English to perform administrative tasks, understand equipment operation and service manuals, training manuals, correspondence and department directives and policy.
- Ability to acquire a Restricted Radio Operator's License and Airside Vehicle Operator's Permit and Workplace Hazardous Material Information System (WHMIS) certificate and First Aid and CPR certificate.

**Typically, the above qualifications would be attained by:**

Completion of a Grade 10 high school education and 5 years directly related experience as an equipment operator in a maintenance program (e.g. Municipal, highway, airport, etc.).

This would include 2 years of experience operating 3 and 5 axle tandem trucks as well as 2 years of experience operating graders and wheeled loaders and 1 year experience operating crawler tractors and backhoes.

Concurrent with this experience the incumbent would also have 2 years of experience performing minor servicing to equipment. The incumbent must have a valid Class 1 driver's license with an airbrake endorsement.

## ADDITIONAL REQUIREMENTS

### Position Security (check one)

- No criminal records check required
- Position of Trust – criminal records check required
- Highly sensitive position – requires verification of identity and a criminal records check

### French language (check one if applies)

- French required (must identify required level below)

Level required for this Designated Position is:

#### ORAL EXPRESSION AND COMPREHENSION

Basic (B)  Intermediate (I)  Advanced (A)

#### READING COMPREHENSION:

Basic (B)  Intermediate (I)  Advanced (A)

#### WRITING SKILLS:

Basic (B)  Intermediate (I)  Advanced (A)

- French preferred

### Aboriginal language: Choose a language

- Required
- Preferred