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**SOLICITATION AMENDMENT**

**MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

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Industrial Vehicles & Machinery Products Division

LEFTD - HS Division

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K1A 0S5

<b>Title - Sujet</b> Runway Snow Blower	
<b>Solicitation No. - N° de l'invitation</b> W8476-196057/A	<b>Amendment No. - N° modif.</b> 001
<b>Client Reference No. - N° de référence du client</b> W8476-196057	<b>Date</b> 2019-05-07
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<b>Address Enquiries to: - Adresser toutes questions à:</b> Martial, Daniel	<b>Buyer Id - Id de l'acheteur</b> hs653
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Instructions: Voir aux présentes

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<b>Signature</b>	<b>Date</b>

### **Amendment 001**

This amendment is raised to include the following documents to the Request for proposal:

1. Solicitation Documents

**Insert:** Product Description and Technical Evaluation Matrix (See next pages)

2. Attachments

**Insert:** W8486-196057\_Annex\_Annexe\_A\_V1

**ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.**



## PURCHASE DESCRIPTION FOR

### Runway Snow Blower ECC 167130



**NOTICE**

This documentation has been reviewed by the Technical Authority and does not contain controlled goods.

**AVIS**

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées.

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**OPI DSVPM 5 – DAVPS 5**

Issued on Authority of the Chief of the Defence Staff  
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**Canada**

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## 1 SCOPE

### 1.1 Scope

- a) This purchase description covers the requirements of a self-propelled, two-stage runway snow blower with a minimum snow blowing capacity of 4082.3 metric tons (4500 short tons) per hour. The runway snow blower will be used to clear runways at Royal Canadian Air Force Wings across Canada.

### 1.2 Instructions

- a) Requirements, which are identified by the word “**must**”, are mandatory. Deviations will not be permitted.
- b) Requirements identified with a “will” define actions to be performed by Canada and require no action/obligation on the Contractor’s part.
- c) Where “**must**” or “will” are not used, the information supplied is for guidance only.
- d) In this document “provided” **must** mean “provided and installed”.
- e) Where a technical certification is referred to in this specification, a copy of the certification or an acceptable Proof of Compliance **must** be supplied for the vehicle when requested by the Technical Authority.
- f) Metric measurements are used to define the requirement. Other measurements are for reference only and may not be exact conversions.
- g) Nominal dimensions reflect a method by which materials or products are generally identified, but which differ from the actual measured dimensions.

### 1.3 Definitions

- a) “**Technical Authority**” - The government official responsible for technical content of this requirement.
- b) “**Equivalent**” - Substitutes and alternatives that are equivalent in product, performance or a standard will be considered for acceptance by the Technical Authority where Proof of Compliance for equivalency for the respective requirement is provided for evaluation.
- c) “**Vehicle**” – The entire vehicle including all systems and sub-systems, in a complete manufactured state in accordance with the requirements in this Purchase Description.
- d) “**5<sup>th</sup> percentile adult female**” – As defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)* a person having as physical characteristics a mass of 46.3 kg, height of 1499 mm, erect sitting height of 785 mm, normal sitting height of 752 mm, hip sitting breadth of 325 mm, hip sitting circumference of 925 mm, waist sitting circumference of 599 mm, chest depth of 191 mm, bust circumference of 775 mm, chest upper circumference of 757 mm, chest lower circumference of 676 mm, knee height of 455 mm, popliteal height of 356 mm, elbow rest height of 180 mm, thigh clearance height of 104 mm, buttock-to-knee length of 518 mm, buttock-to-poples length of 432 mm, elbow-to-elbow breadth of 312 mm and seat breadth of 312 mm.

- e) **“95<sup>th</sup> percentile adult male”** – As defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)* a person having as physical characteristics a mass of 97.5 kg, height of 1849 mm, erect sitting height of 965 mm, normal sitting height of 930 mm, hip sitting breadth of 419 mm, hip sitting circumference of 1199 mm, waist sitting circumference of 1080 mm, chest depth of 267 mm, chest circumference of 1130 mm, knee height of 594 mm, popliteal height of 490 mm, elbow rest height of 295 mm, thigh clearance height of 175 mm, buttock-to-knee length of 640 mm, buttock-to-poples length of 549 mm, elbow-to-elbow breadth of 506 mm and seat breadth of 404 mm.
- f) **“Gross Axle Weight Rating (GAWR)”** - The value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-ground interfaces.
- g) **“Gross Vehicle Weight Rating (GVWR)”** - The value specified by the vehicle manufacturer as the loaded weight of a single vehicle.

## 2 APPLICABLE DOCUMENTS

### 2.1 Applicable Documents

- a) The following documents form part of this Purchase Description. The dates of issue are those in effect on the date of release of the Request for Proposals (RFP). Canada will not be supplying these documents. Sources are as shown:

**Canadian Occupational Health and Safety Regulations (COHSR), 2015**  
<http://laws.justice.gc.ca/eng/regulations/sor-86-304/index.html>

**Advisory Circulars 300 Series – Aerodromes and Airports**  
Transport Canada  
Government of Canada  
330 Sparks Street  
Ottawa, ON, K1A 0N5  
<https://www.tc.gc.ca/>

**Automotive (On-road) Diesel Fuel**  
CAN/CGSB Standard 3.517-2007  
Standards Council of Canada  
270 Albert Street, suite 200  
Ottawa, ON K1P 6N7  
Canada  
<https://www.scc.ca/en>

**SAE Handbook**  
**SAE ARP5539 Rotary Plow with Carrier Vehicle**  
Society of Automotive Engineers Inc.  
400 Commonwealth Dr.  
Warrendale, PA, 15096  
<http://www.sae.org>

### 3 REQUIREMENTS

#### 3.1 Standard Design

- a) **Latest Model** - The vehicle design **must** be the manufacturer's latest model.
- b) **Industry Acceptability** - The vehicle design **must** have demonstrated industry acceptability by having been manufactured and sold commercially for at least 2 year, or be manufactured by a company that has at least 5 years' experience in design and manufacturing of a comparable type of equipment of equivalent or greater complexity.
- c) **Engineering Certification** - Original manufacturers engineering certification **must** be provided upon request for major drive train components, and major equipment systems and assemblies, to demonstrate that assemblies are used within their design limitations.
- d) **Regulations** – The vehicle **must** conform to all applicable laws, regulations and industrial standards governing manufacture, safety, noise levels and pollution in effect in Canada at the time of manufacture. International equivalent laws, regulations, and industrial standards will be accepted only if certified for equivalency by a professional engineer.
- e) **Published Ratings** - The vehicle **must** have system and component capacities equivalent to published ratings (i.e. product or component brochures).
- f) **Standard Components** - The vehicle **must** include all standard components, equipment and accessories for the model offered, although they may not be specifically described in this Purchase Description.
- g) **Spare Parts** - The manufacturer **must** ensure that components and parts used are readily available for a minimum period of ten (10) years from the date of manufacture.

#### 3.2 Operating Conditions

##### 3.2.1 Weather

- a) The vehicle **must** operate under the extremes of weather conditions found in Canada in temperatures ranging from -46 to 39° C (-50.8 F to 102° F) and cold starting from -40° C (-40 F) with external aids as specified in Paragraph 3.6.2.

##### 3.2.2 Terrain

- a) The vehicle **must** be operable on concrete and asphalt surfaces that include year round operations on rain, snow, hard packed snow and ice with up to 2.0% (percent) slope in all weather conditions.

#### 3.3 Safety Standards

##### 3.3.1 Noise Level

- a) The vehicle noise level must meet the requirements of legislation relative to Canadian Occupational Health and Safety Regulations (COHSR).

##### 3.3.2 Human Factors Engineering

- a) The vehicle, all systems, and components **must** comply with the relevant sections of the COHSR.

- b) The vehicle **must** be manufactured/assembled for safety and ease of use by CAF users with anthropometric characteristic measurements ranging from 95th percentile male to 5th percentile female.
- c) The vehicle **must** have entry and exit points equipped with handles and steps sized and positioned to accommodate CAF users with anthropometric characteristic measurements ranging from 95th percentile male to 5th percentile female.
- d) The vehicle **must** be equipped, with warning and instruction plates, non-slip walking surfaces and heat shields, for operator safety.

### 3.3.3 Design Standards

- a) The vehicle **must** be designed in accordance with the guidelines set out in SAE ARP5539 unless otherwise specified in this Purchase Description.

## 3.4 Vehicle Performance, Ratings and Dimensions

### 3.4.1 Performance

- a) The vehicle, at GVWR, **must** reach a minimum transport speed of 50 km/h, required for moving the vehicle between work locations.
- b) The vehicle **must** maintain a minimum working speed of 40 km/h while maintaining maximum blower head capacity.
- c) The vehicle **must** have a minimum snow blowing capacity of 4082.3 metric tons/hour (4500 short tons/hour).

### 3.4.2 Weight Ratings

- a) The GVWR of the vehicle **must** not be less than the sum of the unloaded vehicle mass, the cargo carrying capacity, and the product obtained by multiplying the designated seating capacity by 68kg as defined in the *Motor Vehicle Safety Regulations (C.R.C., c. 1038)*.
- b) Each GAWR **must** be equal to or less than the load rating of the weakest component in the axle system, i.e., axle housing, suspension, wheels, or tires.
- c) The total load on each axle of the vehicle **must** not exceed the GAWR for that axle.

### 3.4.3 Dimensions

- a) The maximum overall **height** of the vehicle **must** be 4.2 m (13.7 ft).
- b) The maximum overall **length** of the vehicle **must** be 12.8 m (42 ft).
- c) The maximum overall **width** of the vehicle **must** be 4.5 m (14.7 ft).
- d) The vehicle minimum ground clearance during transport **must** be 200 mm (7.8 in).

## 3.5 Frame

- a) The frame **must** be a purpose-built chassis manufactured for use in all conditions specified in Paragraph 3.2, 3.3 and 3.4.

- b) Recovery tow points or hooks rated for the maximum weight of the vehicle **must** be provided and located on the front and rear of the vehicle.
- c) The vehicle **must** be equipped with a licence plate holder with an LED light at the rear.

### **3.6 Vehicle Engine**

- a) The vehicle engine **must** operate on ultra-low sulphur diesel fuel to the CAN/CGSB Standard 3.517 and meet the latest emission standards.
- b) If the vehicle engine powers both the vehicle and the snow blower functions, then it **must** meet performance requirements in Paragraph 3.4.1 b) and c) simultaneously.

#### **3.6.1 Engine Components**

- a) A replaceable air filter(s) **must** be provided.
- b) A cooling system **must** be provided.
- c) A combustion air cleaning system **must** be provided, with an air cleaner restriction indicator visible to the operator.
- d) A full flow replaceable oil filter **must** be provided.
- e) An engine shutdown or de-rate system **must** be provided, including a visual warning indicator visible from the operator position.

#### **3.6.2 Cold Weather Starting Aids**

- a) Low temperature engine starting aids **must** be provided to meet the operating conditions in Paragraph 3.2.1.
- b) A thermostatically controlled water separator/fuel filter **must** be provided to preheat diesel fuel prior to starting.
- c) A 110-volt battery heater(s) blanket or pad **must** be provided.
- d) All cold weather aids **must** be powered through dedicated shoreline receptacle(s).
- e) If multiple shoreline receptacles are provided, they **must** be grouped together.

#### **3.6.3 Exhaust System**

- a) The vehicle **must** be equipped with an exhaust system shielded to prevent personnel contacting a heated surface.
- b) The exhaust system **must** prevent entry of rain.
- c) If a Selective Catalytic Reduction (SCR) System is used, there **must** be manual deactivation and activation controls for the automatic regeneration of the Diesel Particulate Filter (DPF).

3.6.4 **Fuel Tank(s)**

- a) The fuel tank(s) **must** have a fuel capacity that will provide a minimum of six (6) continuous hours of operation.
- b) If more than one fuel tank is used, separate fuel gauges **must** be provided.

3.7 **Drivetrain**

- a) The vehicle **must** be all-wheel drive.
- b) The drivetrain **must** include a “Park” or “Neutral” starting interlock.
- c) The drivetrain **must** include limited slip, automatic or operator controlled locking differential(s) on the drive axle(s) with an engagement indicator.

3.8 **Transmission**

- a) The vehicle **must** be equipped with fully automatic or hydrostatic drive transmission.
- b) The transmission **must** have an oil heater, if required to meet the operating conditions specified in Paragraph 3.2.1.
- c) The transmission **must** have an oil cooler, if required.
- d) The transmission **must** have a replaceable oil filter.
- e) The transmission shift control **must** clearly indicate the position of the shift column under all lighting conditions.
- f) A means to determine oil level **must** be provided.
- g) An audible back-up alarm **must** be installed to alert personnel that the vehicle transmission is in reverse.

3.9 **Braking System**

- a) The vehicle **must** be equipped with a power assisted braking system.

3.9.1 **Parking Brake**

- a) The vehicle **must** be equipped with a parking brake.
- b) The parking brake control **must** be positioned so it will not interfere with the operator or snag their clothing when entering or exiting the vehicle.

3.10 **Suspension System**

- a) The vehicle **must** be equipped with a suspension system.
- b) The suspension system **must** be provided with double acting shock absorbers on all axles.
- c) If an air system is provided, it **must** include immediate response automatic ride height control.

- d) If an air system is provided, a heated automatic air tank drain valve **must** be provided.

### 3.11 Steering

- a) The vehicle **must** be provided with a front-wheel power or articulated steering system.

### 3.12 Wheels, Rims and Tires

- a) Tires and rims **must** be selected in accordance with the Tire and Rim Association Handbook.
- b) Tires **must** have a tread pattern for use in the operating conditions described in Paragraph 3.2.
- c) The wheels, tires and rims **must** include valve extensions for inner tires, if used, to allow for easy access.
- d) For each tire size provided, one full size spare tire assembly **must** be delivered with each vehicle.

### 3.13 Cab

- a) The vehicle **must** be equipped with a weatherproof cab.
- b) The cab **must** be forward mounted and provide the operator with 360° visibility including the snow blower attachments and the surrounding area.
- c) A fully adjustable operator's seat **must** be provided, with independent air suspension and arm rests.
- d) The operator's seat **must** be centre in the cab or on that same side as the flat casting.
- e) At a minimum, a foldable passenger seat with lap belt **must** be provided.
- f) The operator and passenger seats **must** have dark upholstery.
- g) The operator's seat **must** have include a retractable **(3-point)** seat belt.
- h) At a minimum, a main point of cab entry/exit and one alternate emergency escape **must** be provided.
- i) A ventilation/heater and defrosting system **must** be provided, with a multi-speed fan, applicable for the operating conditions as specified in Paragraph 3.2.1.
- j) All windows **must** have glass tinting to reduce solar heating effects.
- k) A powered windshield washer system **must** be provided with multi-speed wipers, where the wiper blades **do not** travel from a vertical center windshield position to a horizontal position near the roof line.
- l) The cab floor or floor mats **must** be weatherproof.
- m) Two rotating interior sun visors **must** be installed.
- n) Interior rear-view mirrors **must** be provided.

- o) A back-up camera system **must** be installed in the cab with a screen size of at least 17.7 cm (7 in) that displays in colour.
- p) The back-up camera system **must** automatically turn on when the vehicle is in reverse.
- q) The back-up camera system **must** have a selectable switch to turn on and off.
- r) An AM/FM stereo radio with an auxiliary port **must** be provided.
- s) Two heavy-duty, powered and heated exterior side mirrors, with convex section, **must** be provided with in-cab controls.
- t) The cab **must** be equipped with a 4.5 kg (10 lb) ULC approved and rechargeable dry chemical fire extinguisher, with a minimum rating of ABC10G, equipped with a pressure gauge, service inspection tag, and accessible to the operator.

### 3.14 **Snow Blower**

- a) The self-propelled snow blower **must** be hydrostatically or mechanically driven.
- b) The blower **must** be a two-stage, single ribbon auger type blower.
- c) The blower **must** be equipped with a truck loading, spot casting chute.
- d) The blower **must** be operated from the operator's station in the cab with all controls within the operator's reach.

#### 3.14.1 **Snow Blower Performance**

- a) The snow blower **must** have a minimum capacity of 4082.3 metric tons (4500 short tons) per hour at a minimum casting distance of 30.5 m (100 ft.) through a snow density of 600 kg/m<sup>3</sup>.
- b) The blower **must** have a minimum cutting width of 2.49 m (98 in) and cutting height of 1.32 m (52 in).

#### 3.14.2 **Snow Blower Engine**

- a) A separate snow blower engine **must** be provided if it is required for the snow blower to be powered from an engine separate from the vehicle engine.
- b) The snow blower engine **must** operate on ultra-low sulphur diesel fuel to the CAN/CGSB Standard 3.517 and meet the latest emission standards.
- c) Horse power supplied by the engine **must** allow for the full performance of the runway snow blower.
- d) The engine **must** be equipped with a heavy duty industrial air cleaner(s) with safety type elements, for combustion air, to protect the engine and its components.
- e) The air cleaner(s) **must** be equipped with restriction indicators, visible to the operator.
- f) A replaceable air filter(s) **must** be provided.
- g) The engine **must** be equipped with a cooling system.

- h) The engine **must** have a full flow oil filter with a spin-on or replaceable element.
- i) An engine shutdown or de-rate system **must** be provided, including a visual warning indicator visible from the operator position.
- j) The engine **must** be equipped with the same cold weather aids as specified in Paragraph 3.6.2.
- k) The engine **must** be equipped with an exhaust system shielded to prevent personnel contacting a heated surface.
- l) The exhaust system **must** prevent entry of rain or snow.

#### 3.14.3 Snow Blower Power Drive Train

- a) The snow blower power train **must** be mechanical or hydrostatic drive.
- b) If the drive is mechanical it **must** have components with a rated torque capacity exceeding the maximum applied torque.
- c) If the drive is hydrostatic, the system **must** be of sufficient capacity to handle the maximum load imposed on the system.

#### 3.14.4 Snow Blower Head Auger

- a) The auger ribbon **must** be constructed of abrasion resistant steel.

#### 3.14.5 Snow Blower Impellor and Chute

- a) The impeller **must** have replaceable blades.
- b) The impeller housing **must** be constructed of abrasion resistant steel.
- c) The casting chute **must** be capable of truck loading and spot casting.
- d) The chute **must** be hydraulically controlled and rotate a minimum of 225 degrees.
- e) The chute **must** be hydraulically extendable to successfully load a dump truck with a minimum box height of 3.5 m (11.4 ft.) from the ground.
- f) The impeller **must** be capable of flat casting (from the horizontal) on one side to a minimum of 45 degrees on the other side.
- g) The operator **must** be able to instantly change the snow stream direction and elevation during casting.

#### 3.14.6 Snow Blower Application Equipment

- a) Separate shear pin protection **must** be provided for the auger and impeller unless the auger is hydrostatic and does not require shear pins.
- b) Side cutter bars **must** be provided.
- c) Full length, multi-section scraper blade **must** be provided on the front bottom edge of the blower frame.

- d) Carbide skid shoes **must** be provided.
- e) Wheels **must** be provided to support the rear of the blower head, only if required, for axle loading conditions.
- f) If the blower is equipped with wheels, a spare wheel assembly **must** be delivered with each vehicle.

**3.15 Hydraulic System**

- a) The vehicle **must** be equipped with a hydraulic system.
- b) A hydraulic oil cooler **must** be provided, if required.
- c) Hydraulic filter change indicators **must** be provided.
- d) Hydraulic hoses **must** be grouped together and clearly identified.
- e) Clearly marked test ports **must** be provided.
- f) Hydraulic pressure test gauge with applicable fittings and hoses **must** be provided.

**3.16 Automatic Lubrication System**

- a) The vehicle **must** be equipped with a Groenveld auto-lubrication system or equivalent.
- b) The system **must** include a grease reservoir, accessible for level checking and refilling.
- c) The grease reservoir **must** be full on delivery.
- d) A grease level indicator **must** be provided.
- e) A grease distribution pump **must** be provided.
- f) An adjustable timer **must** be installed to control the greasing intervals.
- g) All grease point that are not serviced by the auto-lubrication system **must** be clearly identified.

**3.16.1 Lubricants and Fluids**

- a) All lubricants and fluids provided **must** meet the operating conditions specified in Paragraph 3.2.1.

**3.17 Electrical System**

- a) The vehicle **must** be equipped with a 12-volt or 24-volt electrical system
- b) Wiring **must** be protected by insulating grommets, where passing through metal.
- c) Wire identification (colour coded by function), weatherproof connectors, protective loom and secure fastening **must** be provided.
- d) Heavy-duty, maintenance free batteries **must** be provided in an enclosure and secured in an accessible location.

- e) A master disconnect switch, accessible from the ground, **must** be provided.

### 3.18 Lighting

- a) The vehicle **must** be equipped with LED lights that include: type signal, marker, tail, stop, clearance, licence plate, and back-up lights.
- b) All exterior lights **must** be LED unless otherwise specified.
- c) Halogen or LED headlights **must** be provided.
- d) LED interior cab light **must** be provided.
- e) In-cab instrument panel lights **must** be dimmable.
- f) The snow blower head **must** be equipped with a minimum of two LED working lights located on the top portion of the blower head frame.
- g) The chute **must** be equipped with a minimum of one LED work light on the top.
- h) The vehicle **must** be equipped with minimum one roof mounted amber LED stroboscopic beacon light, mounted at the highest point, to allow for 360 degree visibility.
- i) The vehicle **must** be equipped with minimum one roof mounted blue LED stroboscopic beacon light, mounted at the highest point, to allow for 360 degree visibility.
- j) Lights **must** be recessed or otherwise protected from damage with all components accessible for servicing.
- k) All controls for the lights **must** be located in the cab.

### 3.19 Controls

- a) Each control **must** be permanently marked to identify the function, in both English and French or international symbols as defined by SAE J1362.
- b) Vehicle controls **must** be grouped together in the cab.
- c) Snow blower controls **must** be grouped together in the cab.
- d) Controls **must** not restrict the operator's field of view.
- e) Control panel lights **must** be provided for adequate lighting for nighttime operations.

### 3.20 Instruments

- a) Instruments **must** be metric and visible to the seated operator in the cab under all lighting conditions.

#### 3.20.1 Vehicle Instruments

- a) An ammeter, voltmeter or charging indicator **must** be provided.
- b) An engine coolant temperature indicator **must** be provided.

- c) A hydraulic oil temperature and level indicator **must** be provided.
- d) An engine oil pressure indicator **must** be provided.
- e) An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours **must** be provided.
- f) A fuel level indicator **must** be provided.
- g) A speedometer **must** be provided.
- h) An engine tachometer **must** be provided.
- i) Differential lock indicator **must** be provided.

#### 3.20.2 **Snow Blower Instruments**

- a) If required, a snow blower engine voltmeter or charging indicator **must** be provided.
- b) If required, a snow blower engine coolant temperature indicator **must** be provided.
- c) If required, a snow blower engine oil pressure indicator **must** be provided.
- d) If required, a snow blower engine hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours **must** be provided.
- e) If required, a snow blower engine tachometer **must** be provided.
- f) Indicators for all snow blower functions **must** be provided.

#### 3.21 **Paint**

- a) All metal surfaces **must** be protected.
- b) The prime coating **must** be a high durability, corrosion resistant type, such as an epoxy.
- c) The vehicle colour **must** be Dupont Axalta 750206 E B Penn Dot Yellow or equivalent.
- d) The casting chute colour **must** be non-glare black.
- e) The auger ribbon colour **must** be gloss red.
- f) “DANGER STAND CLEAR” **must** be painted or stencilled on both sides of the snow blower attachment in day-glow red.

#### 3.22 **Retroreflective Tape**

- a) Retroreflective tape **must** be placed on the vehicle on all extremities of the vehicle cab and snow blower attachment and along the vehicle body.

#### 3.23 **Corrosion Protection**

- a) The vehicle **must** be designed and manufactured to prevent galvanic corrosion.

- b) The materials used in the vehicle manufacturing **must** resist damage or deterioration as a result of cleaning with hot or cold water, steam, or detergents (such as automotive cleaning products).
- c) A commercial rust prevention coating **must** be applied to the vehicle, such as Krown Rust Control or Rust Check or equivalent.
- d) A decal and warranty papers for the rust prevention coating **must** accompany the vehicle.

### **3.24 Warning, Markings and Instruction Plates**

- a) All identification, instructional, and warning labels **must** be bilingual or International symbols defined in SAE J1362.
- b) All identification, instructional, and warning labels **must** within view of the operator.
- c) All gauges and controls and **must** be permanently labelled.

#### **3.24.1 Vehicle identification**

- a) The vehicle identification information must be permanently affixed in a conspicuous and protected location.
- b) Identification information must include the cab and chassis manufacturer's name, model number, serial number, and model year.
- c) Identification information must include the body manufacturer's model and serial number.
- d) Identification information must include the equipment manufacturer's model and serial number.
- e) Identification information must include the GVWR and GAWR ratings.

## **4 INTEGRATED LOGISTIC SUPPORT**

### **4.1 Vehicle Manuals**

- a) All manuals required for the description, operation, maintenance and repair of the complete equipment, including sub-systems, **must** be provided.

#### **4.1.1 Operator's Manuals**

- a) The operator's manuals **must** be bilingual (English/French).
- b) The operator's manuals **must** include instructions for the safe operation of the vehicle.
- c) The operator's manuals **must** include daily operator maintenance instructions/checks (including lubrication).
- d) The operator's manuals **must** include safety warnings.
- e) The operator's manuals **must** include hand signals (as necessary).

4.1.2 **Parts Manual(s)**

- a) The parts manual(s) **must** be in English (French translation is desirable).
- b) The parts manual **must** have illustrations showing all components of the vehicle including equipment and accessories from other manufacturers that are supplied to meet the requirements of the contract, with numbers for the itemization of the parts.
- c) The parts manual **must** have a listing for all itemized parts showing the Original Equipment Manufacturers (OEM) part number, the part name and a brief description of the item.
- d) The parts manual **must** cross reference the OEM part number to the correct illustration and item number.
- e) The parts manual **must** have a representation of bilingual warning signs and identification labels delivered on the equipment.

4.1.3 **Maintenance Manuals**

- a) The maintenance manual **must** be in English (French translation is desirable).
- b) The maintenance manual **must** include a trouble shooting guide, showing the steps and tests required to determine the exact cause of a problem and an explanation of the steps required to correct a problem.
- c) The maintenance manual **must** include a listing of the necessary tolerances, torque levels, fluid volume, and special tools as per 4.3.4 (including item part numbers).
- d) The maintenance manual **must** include information on the order of disassembly and assembly of the systems and components of the vehicle.

4.1.4 **Manual Delivery to Technical Authority**

- a) Sample manuals **must** be submitted to the Technical Authority (TA) prior to the delivery of the vehicle for each model and or sub-system for approval. Sample manuals will not be returned. TA will provide approval or comments on the manuals within 30 days.
- b) One (1) complete set of approved manuals (Operator's, Maintenance, and Parts) in electronic format **must** be delivered to the Technical Authority.

4.1.5 **Manual Delivery with Vehicle**

- a) One (1) complete set of manuals (Operator's, Maintenance, and Parts) **must** accompany each vehicle.
- b) The manuals **must** be in paper and electronic format.

4.1.6 **Electronic Format**

- a) Approved copies of the electronic format manuals **must** be delivered on CD/DVD-ROM.

- b) CD/DVD-ROM **must not** require installation, password and/or Internet connection to be accessed and be an unlocked PDF in a searchable format.

#### 4.1.7 Provisional Manuals

- a) In the event that approved manuals are not available at the time of delivery of the equipment, manuals marked “Provisional” **must** be supplied with the equipment.
- b) The contractor **must** deliver replacement approved manuals to all destinations where Provisional manuals were delivered.

#### 4.1.8 Manual Supplements

- a) The contractor **must** supply manual supplements (Operator’s, Maintenance and Parts) to support dealer-installed equipment not covered in the Vehicle Manuals.
- b) Manual supplements **must** be delivered in accordance with 4.1.4 and 4.1.5.

#### 4.1.9 Changes to Manuals

- a) During the period of the contract, changes to equipment, which affect the contents of manuals, **must** be reflected in the revision of the electronic and paper version of the manuals.
- b) Changes to the manuals **must** conform to the same format and presentation requirements as the original manuals.
- c) The revised electronic version of the manual **must** be sent to the Technical Authority by the Contractor.

#### 4.2 Warranty Letter

- d) The warranty letter **must** include additional warranty coverage of sub-systems and a copy of the warranty letter from each sub-system’s Original Equipment Manufacturer (OEM).
- e) The warranty letter **must** include warranty period as negotiated in the contract.
- f) The warranty letter **must** include Contractor contact information, name and phone number, for warranty support.

#### 4.2.1 Warranty Letter Delivery

- a) The Contractor **must** provide a bilingual warranty letter to the Technical Authority and with each vehicle. If the Technical Authority requires the letter to be in DND format, then they will provide the Contractor a template for the DND acceptable format of the warranty letter.

#### 4.3 Other ILS Deliverables to Technical Authority

- a) All ILS deliverables in Paragraph 4.3 **must** be delivered to the Technical Authority by the first vehicle delivery at the latest.

4.3.1 **Data Summary**

- a) The Contractor **must** provide a bilingual Data Summary for each make/model/configuration of vehicle by completing Technical Authority's template with data and a vehicle picture.

4.3.2 **Photographs**

- a) The Contractor **must** provide photographs in colour, taken against a plain background, and in digital JPEG format with a minimum 10 megapixel resolution.
- b) One left front three-quarter view of a completed unit **must** be provided.
- c) One right rear three-quarter view of a completed unit **must** be provided.

4.3.3 **Dimensioned Drawing**

- a) One side and front view level one engineering drawing or sketch showing the dimensions **must** be provided. Brochure sketches are acceptable.

4.3.4 **Special Tools List** - The Contractor **must** provide an itemized list of specific special tools required for the servicing and repair of the vehicle and include:

- a) Item name;
- b) Contractor's part number;
- c) Manufacturer's part number (OEM);
- d) Quantity recommended per delivery location;
- e) Unit price; and
- f) Unit of issue.

4.3.5 **Preventive Maintenance Replacement Parts Kit List (PMRPKL)** - The contractor **must** provide a list detailing the parts that are required to perform preventive maintenance to the system for a period of 12 months, and include:

- a) Item name;
- b) Contractor's part number;
- c) Manufacturer's part number (OEM);
- d) Manufacturer's NATO Supply code (NCAGE) or name and address;
- e) NSN (NATO Stock Number) (if known);
- f) Quantity per equipment;
- g) Quantity recommended;
- h) Unit price; and

- i) Unit of issue.

4.3.6 **Recommended Spare Parts List (RSPL)** - The Contractor **must** provide a list detailing the spare parts deemed necessary to maintain the vehicle for a period of 24 months exclusive of any warranty period, and include:

- a) Item name;
- b) Contractor's part number;
- c) Manufacturer's part number (OEM);
- d) Manufacturer's NATO Supply code (NCAGE) or name and address;
- e) NSN (NATO Stock Number) (if known);
- f) Quantity per equipment;
- g) Quantity recommended;
- h) Unit price; and
- i) Unit of issue.

4.3.7 **Supplementary Provisioning Technical Documentation (SPTD)**

- a) The Contractor **must** provide SPTD as per 2.1
- b) The SPDT **must** include each item appearing on the RSPL as defined in 4.3.6
- c) For item identification and cataloguing purposes, the technical data supplied **must** be sufficiently comprehensive to allow DND to classify and fully describe the items within the NATO codification system.

4.4 **Safety Recalls and Servicing Data**

- a) Safety recalls, and manufacturer's technical service bulletins, or equivalent **must** be provided to the technical authority and the final delivery locations on a continuing basis, throughout the life expectancy of the vehicle or for no less than 10 years.

4.5 **Initial Parts Kit**

- a) One initial parts kit **must** be delivered with each vehicle.
- b) Each kit **must** include a complete set of filters and filter elements from the Original Equipment Manufacturer (OEM) required in the first 12 months of service.

4.6 **Training**

4.6.1 **Operator Training**

- a) The Contractor **must** provide an operator training course.
- b) The course **must** be given at the delivery destinations.

- c) The course **must** be available in both official languages.
- d) The course **must** have minimum duration of one (1) day to provide training for up to eight (8) operators and have the final dates arranged with the Technical Authority.
- e) The course **must** have a syllabus or course outline and schedule available for review and approval by the Technical Authority seven (7) days prior to the course commencement date.
- f) After completion of the course the Contractor **must** have a “*PROOF OF OPERATOR TRAINING*” certificate signed by a Crown Representative for the destination. The Technical Authority will supply this document in an electronic format.

4.6.2 **Operator Training Curriculum**

- a) Safety precautions to be observed while operating and servicing the vehicle **must** be included in the curriculum.
- b) Vehicle operating characteristics **must** be included in the curriculum.
- c) Vehicle operating procedures **must** be included in the curriculum.
- d) Pre-operating and pre-shutdown procedures **must** be included in the curriculum.
- e) Daily/weekly operator servicing procedures **must** be included in the curriculum.

4.6.3 **Maintenance Training**

- a) The Contractor **must** provide a maintenance training course.
- b) The course **must** be given at the delivery destinations.
- c) The course **must** be available in both official languages.
- d) The course **must** have a minimum duration of one (1) day to provide training of up to eight (8) maintenance personnel and have the final dates arranged with the Technical Authority.
- e) The course **must** have a syllabus or course outline and schedule available for review and approval by the Technical Authority seven (7) days prior to the course commencement date.
- f) After completion of the course, the Contractor **must** have a “*PROOF OF MAINTENANCE TRAINING*” certificate signed by a Canada Representative for the destination. The Technical Authority will supply this document in an electronic format.

4.6.4 **Maintenance Training Curriculum**

- a) Operator’s training detailed in Paragraph 4.6.2 **must** be included in the curriculum.
- b) Operation and maintenance safety precautions **must** be included in the curriculum.
- c) Preventive maintenance including servicing schedules (10 % of classroom time) **must** be included in the curriculum.

- d) Trouble shooting, testing, and adjustments (70 % of classroom time) **must** be included in the curriculum.
- e) Utilization of special tools and test equipment **must** be included in the curriculum.

4.6.5 **Training Materials**

- a) Training materials **must** be provided to each attendee and be available in French for locations in Quebec.
- b) Training materials **must** include a list of topics to be covered;
- c) Training materials **must** include an approximate timetable showing when topics are scheduled to be covered and how much time is scheduled for each topic;
- d) Training materials **must** list any reference material; and
- e) Training materials **must** make available any reference material used.

**Technical Evaluation Matrix**

**Title:**

**Runway Snow Blower**

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**Date:**

2019-04-18

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**Technical Evaluation Matrix  
Runway Snow Blower**

**Bidder Information**

Bidder Name: \_\_\_\_\_  
 Proposal Date: \_\_\_\_\_  
 Proposed Make and Model: \_\_\_\_\_

Technical Mandatory Criteria			
PD Reference	PD Requirement	Bid Evaluation Requirement	Location in Bid Proposal
3.4.1	<p><b><u>Performance</u></b></p> <p>a) The vehicle, at GVWR, <b>must</b> reach a minimum transport speed of 50 km/h, required for moving the vehicle between work locations.</p>	Substantive Information	
3.4.1	<p><b><u>Performance</u></b></p> <p>b) The vehicle <b>must</b> maintain a minimum working speed of 40 km/h while maintaining maximum blower head capacity.</p>	Substantive Information	
3.4.2 c)	<p><b><u>Weight Ratings</u></b></p> <p>c) The total load on each axle of the vehicle <b>must</b> not exceed the GVWR for that axle.</p>	Substantive information including load calculations to demonstrate that the load on each axle does not exceed the GVWR of each axle.	
3.4.3	<p><b><u>Dimensions</u></b></p> <p>a) The maximum overall <b>height</b> of the vehicle <b>must</b> be 4.2 m (13.7 ft).</p>	Substantive Information	
3.4.3	<p><b><u>Dimensions</u></b></p> <p>b) The maximum overall <b>length</b> of the vehicle <b>must</b> be 12.8 metres (42 feet).</p>	Substantive Information	
Technical Mandatory Criteria			

PD Reference	PD Requirement	Bid Evaluation Requirement	Location in Bid Proposal
3.4.3	<u>Dimensions</u> c) The maximum overall <b>width</b> of the vehicle <b>must</b> be 4.5 m (14.7 ft).	Substantive Information	
3.14	<u>Snow Blower</u> a) The self-propelled snow blower <b>must</b> be hydrostatically or mechanically driven.	Substantive Information	
3.14	<u>Snow Blower</u> b) The blower <b>must</b> be a two-stage, single ribbon auger type blower, equipped with a truck loading, spot casting chute.	Substantive Information	
3.14.1	<u>Snow Blower Performance</u> a) The snow blower <b>must</b> have a minimum capacity of 4082.3 metric tons (4500 short tons) per hour at a minimum casting distance of 30.5 metres (100 ft) through a snow density of 600 kg/m <sup>3</sup> .	Substantive information including information on: - Minimum capacity - Minimum casting distance - Snow density	
3.14.1	<u>Snow Blower Performance</u> b) The blower <b>must</b> have a minimum cutting width of 2.5 m (98 in) and cutting height of 1.5 m (58 in).	Substantive information including information on: - Minimum cutting width - Minimum cutting height	
3.14.5	<u>Snow Blower Impellor and Chute</u> d) The chute <b>must</b> be hydraulically controlled and rotate a minimum of 225 degrees.	Substantive Information	
<b>Technical Mandatory Criteria</b>			

PD Reference	PD Requirement	Bid Evaluation Requirement	Location in Bid Proposal
3.14.5	<u>Snow Blower Impellor and Chute</u> e) The chute <b>must</b> be hydraulically extendable to successfully load a dump truck with a minimum box height of 3.5 m (11.4 ft.) from the ground.	Substantive Information	
3.14.5	<u>Snow Blower Impellor and Chute</u> f) The impeller <b>must</b> be capable of flat casting (from the horizontal) on one side to a minimum of 45 degrees on the other side.	Substantive Information	
<b>Proposed Equivalents</b>			
PD Reference	PD Requirement	Bid Evaluation Requirement	Location in Bid Proposal