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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

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Vehicles & Industrial Products Division

11 Laurier St./11, rue Laurier

7A2, Place du Portage, Phase III

Gatineau, Québec K1A 0S5

Title - Sujet Truck, Pump, Vacuum, Septic	
Solicitation No. - N° de l'invitation W8476-185703/A	Amendment No. - N° modif. 007
Client Reference No. - N° de référence du client W8476-185703	Date 2018-01-10
GETS Reference No. - N° de référence de SEAG PW-\$\$HP-539-73502	
File No. - N° de dossier hp539.W8476-185703	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-01-19	
Time Zone Fuseau horaire Eastern Standard Time EST	
F.O.B. - F.A.B.	
Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Cafferty, Kathy	Buyer Id - Id de l'acheteur hp539
Telephone No. - N° de téléphone (873) 469-3322 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

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Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

1. This Solicitation Amendment 007 is raised to:

- a. answer bidders' questions; and
- b. provide an updated Purchase Description dated 2017-01-09.

2. The following are answers to bidder questions:

Q6: Will you accept an electronic or faxed tender or an electronic copy and courier proof?

A6: Instructions for submitting proposals are included in Part 2, Bidder Instructions, Para 2.1, 2003 (2017-04-27) Standard Instructions.

Q7: The high pressure water system (item 3.14) does not specify flow or pressure. It takes quite a large capacity pressure washer to operate a 1" hose. Is a smaller hose (5/8") acceptable with pressure of 40PSI and flow of 7GPM?

A7: Please see response for Question 9.

Q8. Under instrumentation item 3.18 you ask for the controls to be viewable to the seated operator. This is impractical for some of the items such as items C, J, and K. Can the controls be located outside the cab on a centrally located panel? The water and vacuum septic tank indicators (item K) are not recommended in the cab.

A8. The PD at Para 3.18 is amended as follows:

DELETE: **Instrumentation** – Instruments **must** be metric and visible to the seated operator in all lighting conditions and include:

- a) An ammeter, voltmeter or charging indicator;
- b) An engine coolant temperature indicator;
- c) A hydraulic oil temperature and level indicator;
- d) An engine oil pressure indicator;
- e) An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours;
- f) A fuel level indicator;
- g) A speedometer;
- h) An engine tachometer; and
- i) Differential lock indicator.
- j) Vacuum tank pressure gauge.
- k) Vacuum and water tank level indicators.

INSERT: **Instrumentation** – Instruments **must** be metric and visible to the seated operator in all lighting conditions and include:

- a) An ammeter, voltmeter or charging indicator;
- b) An engine coolant temperature indicator;
- c) An engine oil pressure indicator;
- d) An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours;
- e) A fuel level indicator;

- f) A speedometer;
- g) An engine tachometer; and
- h) Differential lock indicator.

The PD at Para 3.18 is amended as follows:

INSERT: Para 3.18.1 **Other Instrumentation** – The following instruments **must** be metric and provided:

- a) A hydraulic oil temperature and level indicator;
- b) Vacuum tank pressure gauge; and
- c) Vacuum and water tank level indicators.

Q9. The 1" hose specified for the pressure washer system is only capable of handling 1300 psi but the pump can put out up to 3000 psi which creates a dangerous situation. The hose will burst. We are going to quote you on ½" hose that will handle the pressure.

A9. The PD at Para 3.14 is amended as follows:

DELETE: **High Pressure Water Wash-down System**

- a) A high pressure water wash-down system **must** be provided to clean lavatory cabins being serviced by the vehicle described in this purchase description.
- b) The water wash-down system **must** be compatible with the water tank in Paragraph 3.14.1.
- c) The water wash down system **must** include a pump.
- d) A water hose of minimum length 15 m (50 ft) and minimum diameter 25 mm (1 in) **must** be provided.
- e) A heavy duty water hose reel **must** be provided to accommodate the aforementioned water hose.
- f) The wash-down system **must** be provided with a wand wash-down gun.
- g) The wand wash-down gun **must** be equipped with a long reach lance and a high pressure three-nozzle rotating head.

INSERT: **Low Pressure Water Wash-down System**

- a) A low pressure water wash-down system must be provided to clean lavatory cabins being serviced by the vehicle described in this purchase description.
- b) The water wash-down system must have a minimum capacity of 75.7 litres per minute (20 GPM) with 206.84 kPa (30 PSI) pressure.
- c) The water wash-down system must be compatible with the water tank in Paragraph 3.14.1.
- d) The water wash down system must include a pump.
- e) A water hose of minimum length 15 m (50 ft) must be provided.
- f) A heavy duty water hose reel must be provided to accommodate the aforementioned water hose.
- g) The wash-down system must be provided with an adjustable nozzle.

The PD at Para 3.14.1 is amended as follows:

DELETE: **Water Tank**

- a) The water tank **must** have a minimum capacity of 1,200 litres (300 US Gal).
- b) The water tank **must** be constructed from a corrosion resistant material and resist cracking and fatigue due to movement in off road conditions.
- c) The tank material **must** be of sufficient thickness to provide complete structural integrity of the tank for the expected life of the vehicle, and for the required application.
- d) The tank **must** be fitted with a drain valve that will allow the tank to be completely drained.
- e) The tank **must** have a combination vent and manual fill tower.
- f) The fill tower **must** have a debris screen.
- g) The tank **must** be provided with a bracket rack and a minimum 50 mm (2 in) water valve.

INSERT: **Water Tank**

- a) The water tank must have a minimum capacity of 1,200 litres (317 US Gal).
- b) The water tank must include insulation to meet cold weather operations described in section 3.2.1.
- c) The water tank must be constructed from a corrosion resistant material and resist cracking and fatigue due to movement in off road conditions.
- d) The tank material must be of sufficient thickness to provide complete structural integrity of the tank for the expected life of the vehicle, and for the required application.
- e) The tank must be fitted with a drain valve that will allow the tank to be completely drained.
- f) The tank must have a combination vent and manual fill tower.
- g) The fill tower must have a debris screen.

Q10: 3.5.2A
Our Detroit dd13 engine has no glow plugs or intake heater but meets the criteria 3.2.1 is this an acceptable engine?

A10: Yes. The requirement for glow plugs/intake heater will be removed.
3.5.2 a) will be deleted.

Q11: Para 3.7.A
An oil heater for an Allison 4500 automatic transmission is not available from Allison nor recommended as it meets 3.2.1. Is this acceptable?

A11: Yes this is acceptable.

Q12: Para 3.7 F
The Allison transmission has an automatic level and warning system a dipstick is not available is this acceptable?

A12: Yes this is acceptable.

The PD at Para 3.7 (f) is amended as follows:

DELETE: A transmission oil dipstick **must** be provided.

INSERT: A transmission oil dipstick or other means to determine oil level **must** be provided.

Q13: 3.4.1 A
Are you sure that you require a gradeability of 5% @56 mph could it be 0.5% at 56 mph?

A13: No. The gradeability requirement will be removed from the PD.

The PD at Para 3.4.1 (a) is amended as follows:

DELETE: The fully laden vehicle **must** maintain a minimum top speed of 90 km/h (56 mph) on a 5.0% (percent) slope.

INSERT: The fully laden vehicle **must** maintain a minimum top speed of 90 km/h (56 mph).

Q14: Para 3.21 A
Are halogen headlights acceptable?

A14: Yes this is acceptable.

The PD at Para 3.21 (a) is amended as follows:

DELETE: The vehicle **must** be equipped with LED lights.

INSERT: The vehicle **must** be equipped with LED lights. Halogen headlights are acceptable.

Q15: Para 3.24A
Is a base coat clear coat paint acceptable for the truck cab & chassis?

A15: Yes this is acceptable.

3. All references to "Annex "B" - Purchase Description – Septic Vacuum Servicing Truck dated 2017-05-31" must now read "Annex "B" - Purchase Description – Septic Vacuum Servicing Truck dated 2017-01-09".

ALL OTHER TERMS AND CONDITIONS OF THIS SOLICITATION REMAIN UNCHANGED.



**PURCHASE DESCRIPTION
FOR
Septic Vacuum Servicing Truck
ECC 189507**

OPI DSVPM 5 – DAVPS 5

Issued on Authority of the Chief of the Defence Staff
Publiée avec l'autorisation du chef d'état-major de la Défense

Canada

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RDIMS #4462789



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.

1. SCOPE

1.1 **Scope** - This Purchase Description details the requirements for a Septic Vacuum Service System mounted on an off road truck with a minimum capacity of 4,500 Litre (1188 Gal US).

1.2 **Instructions** - The following instructions apply to this specification.

- 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** - The following definitions apply to the interpretation of this Purchase Description:
- a) **Technical Authority** - The government official responsible for technical content of this requirement;
 - b) **Contractor** – The Company responsible for the vehicle/equipment design, development, assembly, test and evaluation, and performance configuration;
 - c) **“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 the requirement is provided.
 - d) **“Road Legal”** – Applies to a self-propelled vehicle designed for or capable of transporting persons, property, material or permanently or temporarily affixed apparatus on a highway.
 - e) **“5th 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.
 - f) **“95th 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.
 - g) **“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.
 - h) **“Gross Vehicle Weight Rating (GVWR)”** - The value specified by the vehicle manufacturer as the loaded weight of a single vehicle.
 - i) **Vehicle** - refers to the completely manufactured vehicle with all related parts and equipment installed.

2. APPLICABLE DOCUMENTS

2.1 **Publications** - The following documents form part of this Purchase Description. Web sites for the organization are given when available. Effective documents are those in effect on date of manufacture. Sources are as shown:

Automotive (On-road) Diesel Fuel

CAN/CGSB Standard 3.517-2015
Standards Council of Canada
270 Albert Street, suite 200
Ottawa, ON K1P 6N7
<https://www.scc.ca/en/standardsdb/standards/27037>

Motor Vehicle Safety Regulations (MVSR)

Government of Canada / Transport Canada
<http://www.tc.gc.ca/eng/act-regulations/regulations-crc-c1038htm>

Canadian Occupational Health and Safety Regulations 2015

Health Canada
Address Locator 0900C2
Ottawa, Ontario K1A 0K9

SAE Handbook

Society of Automotive Engineers Inc.
400 Commonwealth Dr.,
Warrendale, PA, 15096
<http://www.sae.org>
<http://standards.sae.org/arp1247d/>
<http://standards.sae.org/arp1328a/>
<http://standards.sae.org/arp1328b/>

Yearbook

Tire and Rim Association Inc.,
3200 West Market St.,
Akron, Ohio, 44321
<http://www.us-tra.org/traHome.htm>

International Organization for Standardization 27470:2011

1, ch. de la Voie-Creuse
CP 56 - CH-1211 Geneva 20
Switzerland
Tel: +41 22 749 01 11
http://www.iso.org/iso/home/store/catalogue_ics.htm
www.iso.org/obp/ui/#iso:std:iso:27470:ed-1:v1:en

Advisory Circulars

Transport Canada, Government of Canada
330 Sparks Street
Ottawa, ON, K1A 0N5
<https://www.tc.gc.ca/>

3. REQUIREMENTS

3.1 Standard Design

- a) **Latest Model** - The vehicle design **must** be the manufacturer's latest model.
- b) **Road Legal** - The vehicle design **must** be legal for operation on Canadian roads according to the requirements set out in the Motor Vehicle Safety Regulations (MVSR)
- c) **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.
- d) **Engineering Certification** - The vehicle design **must** have engineering certification available, upon demand, for this vehicle/equipment from the original manufacturers of major drive train components and major equipment systems and assemblies.
- e) **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.
- f) **Published Ratings** - The vehicle **must** have system and component capacities equivalent to published ratings (i.e. product or component brochures).
- g) **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.
- h) **Spare Parts** - The manufacturer **must** select components readily available for a minimum period of fifteen (15) years from the date of manufacture.

3.1.1 Maintainability

- a) The vehicle **must** permit access to all items required for servicing and maintenance.
- b) The vehicle **must** allow the manufacturer's recommended daily maintenance without having to raise the cab.
- c) Spin on style filters **must** be provided where available.

3.2 Operating Conditions

3.2.1 **Weather** -The vehicle **must** operate under the extremes of weather conditions found in Canada in temperatures ranging from -40 to 37° C (-40 to 99° F) and cold starting from -40° C with external aids.

3.2.2 **Terrain** - The vehicle **must** be operated off-road. Terrain conditions **must** include year round operations on snow, mud, swamp, sand and ice.

3.3 **Safety Standards**

3.3.1 **Vehicle Safety Regulations**

- a) The vehicle **must** comply with the Motor Vehicle Safety Regulations (MVS).
- b) The vehicle **must** have Safety Compliance Certification Label with a National Safety Mark (NSM), as a seal of compliance **or** be accompanied by a Vehicle Import Form containing proof of Inspection by the Registrar of Imported Vehicles.

3.3.2 **Human Factors Engineering** - The vehicle, all systems, and components **must** comply with the relevant sections of the COHSR and **must**:

- a) 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;
- b) 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;
- c) Be equipped, with warning and instruction plates, non-slip walking surfaces and heat shields, for operator safety

3.4 **Vehicle Performance, Ratings and Dimensions**

3.4.1 **Performance**

- a) The fully laden vehicle **must** maintain a minimum top speed of 90 km/h (56 mph).
- b) The vehicle **must** have both an angle of approach and an angle of departure of at least 20 degrees.
- c) When operating at the GVWR, the vehicle **must** tow an 8,000 kg (17,600 lbs) trailer.

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.
- d) Axle loads **must** comply with all the provincial weight restrictions across Canada.

3.4.3 **Dimensions**

- a) The vehicle **must** have road legal dimensions across Canada;

- b) The maximum overall height of the vehicle **must** be 3.75 metres (12.5 feet).
- c) The maximum overall width of vehicle **must** be 2.59 metres (8.5 feet).
- d) The minimum vehicle ground clearance **must** be 450 mm (17.7 inches).

3.5 **Engine**

- a) The engine **must** operate on diesel fuel to the CAN/CGSB Standard 3.517. Engine manufacturer's certification **must** be available upon request.
- b) The engine **must** have sufficient power to meet the specified performance requirements outlined in paragraph 3.4.1.

3.5.1 **Engine Components**

- a) Replaceable air filters **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 governor **must** be provided.
- e) A full flow replaceable oil filter **must** be installed.
- f) An engine shutdown or de-rate system **must** be provided, including a visual warning indicator visible from the operator position.

3.5.2 **Engine Cold Weather Starting Aids** - The engine **must** be equipped with cold weather aids applicable to the operating conditions in Paragraph 3.2.

- a) A thermostatically controlled water separator/fuel filter **must** be provided to preheat diesel fuel prior to starting.
- b) A thermostatically controlled in-line fuel heater **must** be provided.
- c) A 110-volt engine heater(s) **must** be provided.
- d) A 110-volt battery heater(s) **must** be provided.
- e) All cold weather aids **must** be connected together with a single, cover-protected, external electrical power plug, accessible from the ground level.

3.5.3 **Cooling System** - The engine **must** be provided with extended life coolant (ELC), cooling system and radiator which operates within the conditions stated in Paragraph 3.4.1.

3.5.4 **Fuel Tank(s)**

- a) The fuel tank(s) **must** have a fuel capacity that will provide the greater of at least 400 km of fully laden cruise or ten (10) continuous hours of pumping operations.
- b) If more than one fuel tank is used, separate fuel gauges **must** be provided.

3.5.5 **Drivetrain** – The drivetrain consists of components transmitting power from the engine output shaft to driven wheels.

- a) The vehicle's drivetrain **must** be a 4x4 or AWD.
- b) The drivetrain **must** include a "Park" or "Neutral" starting interlock.
- c) The drivetrain **must** include limited slip or driver controlled locking differential(s) on the drive axle(s).

3.6 **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.

3.7 **Transmission** - The vehicle **must** be equipped with a rugged heavy duty fully automatic transmission.

- a) The transmission **must** have an oil heater, if required to meet the operating conditions specified in Paragraph 3.2.
- b) The transmission **must** have an oil cooler.
- c) The transmission **must** have a replaceable oil filter.
- d) The transmission shift control **must** clearly indicate the position of the shift column under all lighting conditions.
- e) The transmission **must** supply power to all 4 wheels.
- f) A transmission oil dipstick or other means to determine oil level **must** be provided.

3.7.1 **Power Take Off (PTO)**

- a) The PTO **must** be of the hot shift type with pump direct mount.
- b) The PTO **must** be transmission mounted, and have a torque rating that will allow the hydraulic oil pump to meet its rated performance.

c) The gearbox **must** be of sufficient size to withstand the engine torque for the range of pump operating conditions and be selected to give the maximum performance with the engine, transmission, and PTO.

d) PTO activation controls **must** be provided in the cab, within reach of the driver.

3.8 **Brakes** - The vehicle **must** be equipped with a braking system, including a parking brake.

3.9 **Suspension System**

a) The vehicle **must** be equipped with multi-leaf type springs with bumper pads, an air suspension system, heavy-duty on/off highway air suspension or rear rubber block.

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 expello valve **must** be provided.

3.10 **Steering**

a) The vehicle **must** be provided with a power assisted steering system.

b) The steering system **must** be provided with a telescopic/tilt steering column.

3.11 **Wheels, Rims and Tires**

a) Tires and rims **must** be selected in accordance with MVSR Technical Standards Documents No. 120, Revision 1R.

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) If applicable, all tires **must** be the same size, ply ratings, make and model.

e) For each tire size provided, one full size spare tire assembly **must** be delivered with each vehicle.

3.12 **Cab** -The vehicle **must** be equipped with a two-person weatherproof cab.

a) A fully adjustable driver and passenger seats **must** be provided, with suspension and arm rests.

b) Driver and passenger seats **must** have dark upholstery and retractable (3-point) seat belts.

c) A minimum of two (2) doors **must** be provided with power locks, be keyed alike, and have keyless entry.

d) 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.

- e) An air conditioning system **must** be provided equipped with all components and controls required for regulation of the cab interior temperature.
- f) Rear window and powered side windows **must** have glass tinting between 10% and 20%, to reduce solar heating effects. If aftermarket tinting is used, it **must** be a metallic film with between 10% and 20% "Visible Light Transmission" of a smoke charcoal colour.
- g) 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.
- h) The cab floor or floor mats **must** be weatherproof.
- i) Two rotating interior sun visors **must** be installed.
- j) A back-up camera system **must** be installed in the cab with a screen size of at least 17.7 cm (7 inches).
- k) An AM/FM stereo radio with an auxiliary port **must** be provided.
- l) Two heavy-duty, powered and heated exterior side mirrors, with convex section, **must** be provided with in-cab controls.
- m) The cab **must** be equipped with a 2.3 kg (5 lb) ULC approved and rechargeable dry chemical fire extinguisher, with a minimum rating of 3A10BC, equipped with a pressure gauge, service inspection tag, and accessible to the operator.
- n) The cab **must** have steps and grab handles on each side of the cab to provide easy and safe access.

3.13 **Septic Service System** - The vehicle **must** be equipped with a septic vacuum service system.

3.13.1 **Vacuum Tank**

- a) The vehicle **must** be equipped with a vacuum tank.
- b) The vacuum tank **must** include insulation to meet cold weather operations described in section 3.2.1.
- c) The vacuum tank provided **must** be a minimum of 4,500 litres (1 188 US Gal's) and **must** be the manufacturer's latest commercial standard vacuum tank design.
- d) The vacuum tank **must** be of heavy duty construction to handle stresses and flexing induced from dirt and gravel road operations.
- e) The vacuum tank **must** be constructed with sufficient thickness to provide complete structural integrity of the tank for the expected life of the vehicle, and for the required application.
- f) The vacuum tank **must** be made of a corrosion resistant metal.

- g) A ladder **must** be provided on the left side of the tank.
- h) The ladder **must** have anti slip rungs.
- i) A man way **must** be mounted on top of the tank for ease of cleaning.
- j) The vacuum tank **must** be provided with baffling that will minimize water surging while in transport.

3.13.2 **Vacuum Pump**

- a) A hydraulic vacuum pump **must** be provided.
- b) The vacuum pump **must** lift sewage from a minimum distance of 7.0 m (23 ft) below grade into the vacuum tank.
- c) The pump **must** be liquid cooled.
- d) The pump **must** have automatic lubrication.
- e) The pump **must** have a minimum flow rate of 200 CFM.

3.13.3 **Valves**

- a) An intake valve with a minimum 76 mm (3 inch) quick open brass gate valve with an aluminium male coupling and cap including a minimum of a 76 mm (3 inch) diameter riser pipe and impact wear plate **must** be provided.
- b) The intake valve **must** be heated.
- c) A discharge valve with a minimum of a 75 mm (3 inch) brass gate with aluminium male coupling and cap.
- d) The discharge valve **must** be heated.
- e) The vacuum tank **must** be equipped with a primary shut off valve.
- f) The vacuum tank **must** be equipped with a secondary shut off valve.
- g) The vacuum tank **must** be equipped with one (1) pressure relief valve.
- h) The vacuum tank **must** be equipped with one (1) vacuum relief valve.
- i) All valves **must** be mounted so as to prevent damage while driving in conditions outlined in Paragraph 3.2

3.13.4 **Vacuum Tank Hoses**

- a) Industrial type, flexible hose compatible with intake and discharge valves **must** be provided.

- b) The hose **must** be a minimum of 15 m (50 ft).
- c) The flexible hose **must** have a minimum diameter of 75 mm (3 in).
- d) The vehicle **must** be equipped with a storage location for the vacuum tank hose(s).

3.14 **Low Pressure Water Wash-down System**

- a) A low pressure water wash-down system **must** be provided to clean lavatory cabins being serviced by the vehicle described in this purchase description.
- b) The water wash-down system **must** have a minimum capacity of 75.7 litres per minute (20 GPM) with 206.84 kPa (30 PSI) pressure.
- c) The water wash-down system **must** be compatible with the water tank in Paragraph 3.14.1.
- d) The water wash down system **must** include a pump.
- e) A water hose of minimum length 15 m (50 ft) **must** be provided.
- f) A heavy duty water hose reel **must** be provided to accommodate the aforementioned water hose.
- g) The wash-down system **must** be provided with an adjustable nozzle.

3.14.1 **Water Tank**

- a) The water tank **must** have a minimum capacity of 1,200 litres (317 US Gal).
- b) The water tank **must** include insulation to meet cold weather operations described in section 3.2.1.
- c) The water tank **must** be constructed from a corrosion resistant material and resist cracking and fatigue due to movement in off road conditions.
- d) The tank material **must** be of sufficient thickness to provide complete structural integrity of the tank for the expected life of the vehicle, and for the required application.
- e) The tank **must** be fitted with a drain valve that will allow the tank to be completely drained.
- f) The tank **must** have a combination vent and manual fill tower.
- g) The fill tower **must** have a debris screen.

3.15 **Accessories**

- a) The vehicle **must** have front and rear licence plate holders.
- b) The vehicle **must** be equipped with towing hooks or equivalent attachments at the front and rear of the vehicle of sufficient strength to permit recovery of the vehicle, and accessible without having to crawl under the vehicle.

- c) The vehicle **must** have mud flaps.
- d) The vehicle **must** have a heavy duty truck mounted rear bumper for protection of valves.
- e) A pintle hitch provided rated for a minimum tow capacity of 8,000 kg (17,600 lbs.) and support a minimum tongue weight of 1,000 kg (2,200 lbs) **must** be provided.

3.16 **Tool Box**

- a) The vehicle **must** be equipped with a water proof curb side tool box compartment.
- b) The tool box compartment **must** be made of corrosion resistant material and **must** have heavy duty hinges and lockable handles.
- c) The tool box **must** be at a minimum 460 mm (18 in) high by 460 mm (18 in) deep by 900mm (36 in) wide.

3.17 **Road Storage Compartment**

- a) The vehicle **must** be equipped with a road side compartment.
- b) The compartment **must** be made of corrosion resistant material and **must** have heavy duty hinges and lockable handles.
- c) The compartment **must** be fitted with track matting.
- d) The compartment **must** be at a minimum 460 mm (18 inches) high by 460 mm (18 inches) deep by 900 mm (35 inches) wide.

3.18 **Instrumentation** – Instruments **must** be metric and visible to the seated operator in all lighting conditions and include:

- a) An ammeter, voltmeter or charging indicator;
- b) An engine coolant temperature indicator;
- c) An engine oil pressure indicator;
- d) An hour-meter with numeric display, which accurately records accumulated engine running time up to at least 9,999 hours;
- e) A fuel level indicator;
- f) A speedometer;
- g) An engine tachometer; and
- h) Differential lock indicator.

3.18.1 **Other Instrumentation** – The following instruments **must** be metric and provided:

- a) A hydraulic oil temperature and level indicator;
- b) Vacuum tank pressure gauge; and
- c) Vacuum and water tank level indicators.

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) All sept vacuum service system related 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 **Electrical System**– The vehicle **must** be equipped with a 12-volt electrical system

- a) Wiring **must** be protected by insulating grommets, where passing through metal.
- b) A 7-pin electrical trailer socket **must** be provided
- c) Heavy-duty, maintenance free batteries **must** be provided and secured in an accessible well-protected location.
- d) A master disconnect switch, accessible from the ground, **must** be provided.
- e) An alternator **must** be provided.

3.21 **Lighting system**

- a) The vehicle **must** be equipped with LED lights. Halogen headlights are acceptable.
- b) Lights **must** be recessed or otherwise protected from damage with all components accessible for servicing.
- c) In-cab instrument panel lights **must** be dimmable.
- d) A goose neck style map light for in cab passenger task lighting **must** be equipped.
- e) 2 Work lights **must** be mounted at the rear of the vehicle.
- f) The vehicle **must** have an emergency strobe amber emergency light mounted at the rear.
- g) All controls for the lights **must** be located in the cab.

h) Automatic LED lighting **must** be provided for the compartment and toolbox.

3.22 **Lubricants and Fluids** - The vehicle **must** be serviced with standard lubricants and fluids compatible with the delivery location and season.

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.

c) A commercial rust prevention coating **must** be applied to the vehicle, such as Krown Rust Control or Rust Check.

d) A decal and warranty papers for the rust prevention coating **must** accompany the vehicle.

3.24 **Exterior Paint and Retroreflective Tape**

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 colour **must** be white.

d) Retroreflective tape **must** be placed on the vehicle in accordance with the Motor Vehicle Safety Regulations (MVSR).

3.25 **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.

3.25.1 **Vehicle identification** - The following information **must** be permanently affixed in a conspicuous and protected location:

a) The cab and chassis manufacturer's name, model number, serial number, and model year;

b) The body manufacturer's model and serial number;

c) The equipment manufacturer's model and serial number; and

d) The GVWR and GAWR ratings.

4. **INTEGRATED LOGISTIC SUPPORT**

4.1 **Vehicle Manuals**– 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 (bilingual 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 (bilingual 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 (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.

- e) The maintenance manual **must** include special tools list as per Paragraph 4.3.4.

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/trailer 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, shipped to each location.
- 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 Paragraphs 4.1.4 and 4.1.5.

4.1.9 **Translation and Reproduction Rights**– The Canadian Government **must** reserve the right to translate and reproduce, for Government use only, all or any part of the publications supplied, including the training packages delivered against the contract agreement.

4.1.10 **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**

- a) The warranty letter **must** include a list of all Canadian designated warranty service providers that will honour the warranty for the equipment and attachments (if applicable) procured under this contract, including the contact person and phone number at each warranty service provider.
- b) 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).
- c) The warranty letter **must** include warranty period as negotiated in the contract.
- d) The warranty letter **must** include Contractor contact information, name and phone number, for warranty support.

4.2.1 **Warranty Letter Delivery** - 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** - The following deliverables **must** be provided in electronic format prior to the delivery of the last vehicle.

4.3.1 **Data Summary** - 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** – The Contractor **must** provide photographs in colour, taken against a plain background, and in digital JPEG format with a minimum 10 megapixel resolution and with the following views:

- a) One left front three-quarter view of a completed unit; and
- b) One right rear three-quarter view of a completed unit.

4.3.3 **Dimensioned Drawing** - One side and front view 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) Manufacturer's part number (OEM);

- c) Quantity recommended per delivery location;
- d) Contractor's part number;
- 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;
- 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** – The Contractor *must* provide a list detailing the spare parts deemed necessary to maintain the vehicle for a period of 12 months exclusive of any warranty period, and include:

- a) Part description;
- b) Original Equipment Manufacturer;
- c) Original Equipment Manufacturer Part Number;
- d) Suggested quantity; and
- e) Unit cost.

4.4 **Safety Recalls and Servicing Data** - 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.
- c) One kit per location **must** include the special tools listed in Paragraph 4.3.4.

4.6 **Familiarization Training**

- a) The Contractor **must** perform at least 1-day (8 hours) familiarization instruction at each destination, for a maximum of 8 personnel (at each destination).
- b) The instruction **must** include the detailed operation and normal servicing of the vehicle/equipment and will be attended by CAF operators and maintainers.
- c) Familiarization instructions **must** be available in both official languages for destinations in the province of Quebec or as requested by the Technical Authority.
- d) The final dates **must** be arranged with the Technical Authority.
- e) After completion of the familiarization session, the Contractor **must** have a "PROOF OF FAMILIARIZATION INSTRUCTION" certificate signed by the consignee. The Technical Authority will supply this document in an electronic format, when requested.