



THE CORPORATION OF THE CITY OF NIAGARA FALLS

**REQUEST FOR TENDER - SUPPLY**

**RFT14-2020 - SUPPLY & DELIVERY OF  
FIRE PUMPER TRUCK**

***SPECIFICATIONS***

NAME OF COMPANY (DEALER): \_\_\_\_\_

ITEM/CATEGORY	CITY REQUIREMENTS	BIDDER TO STATE SPECIFICATIONS
<b>Make</b>	Spartan Metrostar - <i>no exception as this is the fire department fleet standard</i>	<b>Yes/Alternate (with details)</b>
<b>Year</b>	Current model year	
<b>Model</b>	Metrostar 10" ELFD	
	ULC and all other Canadian standards required Pump tested and labelled to 6000LPM	
	ELFD 10" raised roof cab	
	Occupant Advanced Protection System,	
	Classic front cab	
	Cab drip rails	
	PPG FBCH 71663 single paint colour	
	Multi-tone silver gray for all cab interior components	
	Maximum height of 3.50 m.	
<b>STANDARDS &amp; INSPECTIONS</b>	Yellow PMCVI sticker supplied for Ontario prior to delivery	
	Yellow PMCVI inspection/sticker at end of first year and end of second year; warranty items to be automatically replaced, non-warranty chassis items to be quoted and replaced with written approval	
	Pump test/inspection at end of first year and end of second year; warranty items to be automatically replaced	
	Undercoating prior to delivery, with undercoating at the end of the first year	

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	warranty and end of the second year warranty	
	All warranty visits to be in Niagara Falls, or dealer to pick-up and drop-off truck (no additional charges)	
	Ontario license plates (permanent for fire trucks)	
<b>Engine</b>	<p>The chassis engine shall be a Cummins L9 engine. The L9 engine shall be an in-line six (6) cylinder, four cycle diesel powered engine. The engine shall offer a rating of 380 horse power at 1900 RPM and shall be governed at 2100 RPM. The torque rating shall feature 1150 foot pounds of torque at 1400 RPM with 543 cubic inches (8.9 liters) of displacement.</p> <p>The L9 engine shall feature a VGT™ Turbocharger, a high pressure common rail fuel system, fully integrated electronic controls with an electronic governor, and shall be EPA certified to meet the 2017 emissions standards using cooled exhaust gas recirculation and selective catalytic reduction technology.</p> <p>The engine shall include an engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge for use with the engine lubrication system. The engine shall include Citgo brand Citgard 500, or equivalent SAE 15W40 CJ4 low ash engine oil which shall be utilized for proper engine lubrication.</p> <p>A wiring harness shall be supplied ending at the back of the cab. The harness shall include a connector which shall allow an optional harness for the pump panel. The included circuits shall be provided for a tachometer, oil pressure, engine temperature, hand throttle, high idle and a PSG system. A circuit for J1939 data link shall also be provided at the back of the cab.</p>	

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<p><b>Exhaust</b></p>	<p>The exhaust system shall be mounted below the frame in the outboard position with the SCR canister in line rearward of the DPF. The exhaust system shall utilize a 90-degree bend in the exhaust tubing from the turbo into a side inlet DPF canister that allows the entire system to be pulled forward. The exhaust discharge shall terminate on the right side of the vehicle ahead of the rear tires. Nederman Puck location to be consider for body mounting to line up with exhaust discharge. Not below door</p> <p><b>DIESEL EXHAUST FLUID TANK</b> The exhaust system shall include a molded cross linked polyethylene tank for Diesel Exhaust Fluid (DEF). The tank shall have a capacity of six (6) usable gallons and shall be mounted on the left hand side of the chassis frame behind the batteries below the frame.</p> <p>The DEF tank shall be designed with capacity for expansion in case of fluid freezing. Engine coolant, which shall be thermostatically controlled, shall be run through lines in the tank to help prevent the DEF from freezing and to provide a means of thawing the fluid if it should become frozen.</p> <p>The tank fill tube shall be routed under the rear of the cab with the fill neck and splash guard accessible in the top rear step, adjacent to the air cylinder storage area.</p>	
<p><b>Transmission</b></p>	<p><b>TRANSMISSION</b> The drive train shall include an Allison model EVS 3000 torque converting, automatic transmission which shall include electronic controls. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing.</p>	

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	<p>The transmission shall include two (2) internal oil filters and Castrol TranSynd™ synthetic TES 295 transmission fluid which shall be utilized in the lubrication of the EVS transmission. An electronic oil level sensor shall be included with the readout located in the shift selector.</p> <p>The transmission gear ratios shall be:</p> <p>1st 3.49:1 2nd 1.86:1 3rd 1.41:1 4th 1.00:1 5th 0.75:1 Rev 5.03:1</p> <p><b>TRANSMISSION MODE PROGRAMMING</b> The transmission, upon start-up, will automatically select a four (4) speed operation. The fifth speed over drive shall be available with the activation of the mode button on the shifting pad.</p> <p><b>TRANSMISSION FEATURE PROGRAMMING</b> The Allison Gen V-E transmission EVS group package number 127 shall contain the 198 vocational package in consideration of the duty of this apparatus as a pumper. This package shall incorporate an automatic neutral with selector override. This feature commands the transmission to neutral when the park brake is applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.</p> <p>This package shall be coupled with the use of a split shaft PTO and incorporate pumping circuits. These circuits shall be used allowing the vehicle to operate in the fourth range lockup while operating the pump mode due to the 1 to 1 ratio through the transmission, therefore the output speed of the engine is the input speed to the pump. The pump output can be easily calculated by using this input speed and the</p>	

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	<p>drive ratio of the pump itself to rate the gallons of water the pump can provide.</p> <p>A transmission interface connector shall be provided in the cab. This package shall contain the following input/output circuits to the transmission control module. The Gen V-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance.</p> <p>Function ID Description Wire assignment</p> <p>Inputs</p> <p>C PTO Request 142</p> <p>J Fire Truck Pump Mode (4th Lockup) 122/ 123</p> <p>Outputs</p> <p>C Range Indicator 145 (4th)</p> <p>G PTO Enable Output 130</p> <p>Signal Return 103</p> <p><b>TRANSMISSION SHIFT SELECTOR</b></p> <p>An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and easy reach. The shift selector shall have a graphical Vacuum Florescent Display (VFD) capable of displaying two lines of text. The shift selector shall provide mode indication and a prognostic indicator (wrench symbol) on the digital display. The prognostics monitor various operating parameters and shall alert you when a specific maintenance function is required.</p> <p><b>ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR</b></p> <p>The transmission fluid shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal.</p>	

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	<p><b>TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE</b> When the VGT auxiliary brake is engaged, the transmission shall automatically shift to second gear to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.</p> <p><b>TRANSMISSION COOLING SYSTEM</b> The transmission shall include a water to oil cooler system located in the cooling loop between the radiator and the engine. The transmission cooling system shall meet all transmission manufacturer requirements. The transmission cooling system shall feature continuous flow of engine bypass water to maintain uninterrupted transmission cooling.</p> <p><b>TRANSMISSION DRAIN PLUG</b> The transmission shall include an original equipment manufacturer installed oil drain plug.</p> <p><b>TRANSMISSION WARRANTY</b> The Allison EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty.</p>	
<b>Wheel Base</b>	The chassis wheelbase shall be 202.00 inches.	
<b>Suspension</b>	<p>Single axle vehicle. Suspension, wheels and tires must meet GVW. Front axle and suspension minimum 21,500 lbs. Rear axle and suspension minimum 27,000 lbs. Front and Rear Axles shall mean Suspension Specs.</p> <p><b>REAR AXLE DIFFERENTIAL CONTROL</b> A driver controlled differential lock shall be installed on the rear axle. This feature shall</p>	

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	<p>allow the main differential to be locked and unlocked when encountering poor road or highway conditions, where maximum traction is needed, for use at speeds no greater than 25 MPH. The differential lock shall be controlled by a virtual button on the Vista display and control screen. The Vista display shall also indicate when positive engagement of the differential control has occurred.</p> <p><b>REAR SUSPENSION</b> The single rear axle shall feature a Hendrickson Firemax 27,000lbs air suspension with a single air bag on each side attached to a tapered forged drop leaf spring with one adjustable and one fixed torque rod.</p> <p><b>FRONT SHOCK ABSORBERS</b> Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the front suspension system.</p>	
<b>GVW</b>	Weights must meet Loaded Capacity	
<b>Steering</b>	Dual Steering or Single Gears	
<b>Tires</b>	<p><b>FRONT TIRE</b> The front tires shall be Goodyear 425/65R 22.5 G296MSA front tires,</p> <p><b>REAR TIRE</b> The rear tires shall be Goodyear 12R 22.5 G182 RSD rear tires,</p>	
	Polished aluminum wheels, with Polished Nuts & Hub Caps	
<b>Brakes</b>	<p><b>BRAKE SYSTEM</b> A rapid build-up air brake system shall be provided. The air brakes shall include a two (2) air tank, three (3) reservoir system with a total of 4152 cubic inch of air capacity. Air tanks shall include galvanized brackets. A floor mounted treadle valve shall be mounted inside the cab for graduated control of applying and releasing the brakes. An inversion valve shall be installed to</p>	

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	<p>provide a service brake application in the unlikely event of primary air supply loss. All air reservoirs provided on the chassis shall be labeled for identification. The wet tank drain valve location to be accessible for daily manual draining.</p> <p>The rear axle spring brakes shall automatically apply in any situation when the air pressure falls below 25 PSI and shall include a mechanical means for releasing the spring brakes when necessary. An audible alarm shall designate when the system air pressure is below 60 PSI.</p> <p>A four (4) sensor, four (4) modulator anti-lock braking system (ABS) shall be installed on the front and rear axles in order to prevent the brakes from locking or skidding while braking during hard stops or on icy or wet surfaces. This in turn shall allow the driver to maintain steering control under heavy braking and in most instances, shorten the braking distance. The electronic monitoring system shall incorporate diagonal circuitry which shall monitor wheel speed during braking through a sensor and tone ring on each wheel. A dash mounted ABS lamp shall be provided to notify the driver of a system malfunction. The ABS system shall automatically disengage the auxiliary braking system device when required. The speedometer screen shall be capable of reporting all active defaults using PID/SID and FMI standards.</p> <p>Additional safety shall be accommodated through Automatic Traction Control (ATC) which shall be installed on the single rear axle. The ATC system shall apply the ABS when the drive wheels loose traction. The system shall scale the electronic engine throttle back to prevent wheel spin while accelerating on ice or wet surfaces.</p>	



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	<p>A momentary rocker style switch shall be provided and properly labeled “mud/snow”. When the switch is pressed once, the system shall allow a momentary wheel slip to obtain traction under extreme mud and snow conditions. During this condition the ATC light and the light on the rocker switch shall blink continuously notifying the driver of activation. Pressing the switch again shall deactivate the mud/snow feature.</p> <p>The Electronic Stability Control (ESC) unit is a functional extension of the electronic braking system. It is able to detect any skidding of the vehicle about its vertical axis as well as any rollover tendency. The control unit comprises an angular-speed sensor that measures the vehicle’s motion about the vertical axis, caused, for instance, by cornering or by skidding on a slippery road surface. An acceleration sensor measures the vehicle’s lateral acceleration. The Controller Area Network (CAN) bus provides information on the steering angle. On the basis of lateral acceleration and steering angle, an integrated microcontroller calculates a theoretical angular speed for the stable vehicle condition</p> <p>Air tank drain cables routed below rub rails, with labels</p> <p><b>FRONT BRAKES</b> The front brakes shall be Meritor EX225 Disc Plus disc brakes with 17.00 inch vented rotors.</p> <p><b>REAR BRAKES</b> The rear brakes shall be Meritor 16.50 inch X 7.00 inch S-cam drum type. The brakes shall feature a cast iron shoe Long Stroke.</p> <p><b>PARK BRAKE</b> Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical</p>	

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	<p>spring force. This is accomplished by dual chamber rear brakes, satisfying the FMVSS parking brake requirements.</p> <p><b>PARK BRAKE CONTROL</b> A Meritor-Wabco manual hand control push-pull style valve shall operate the parking brake system. The control shall be yellow in color.</p> <p>The parking brake actuation valve shall be mounted on the dash as close as possible for the driver.</p> <p><b>REAR BRAKE SLACK ADJUSTERS</b> The rear brakes shall include Meritor automatic slack adjusters installed on the axle.</p> <p><b>REAR BRAKE DUST SHIELDS</b> The rear brakes shall be equipped with brake dust shields.</p>	
	Auxiliary Engine brake with compression brake	
	Auxiliary shore power plug with auto eject drivers side.	
	Manual Air inlet for air brakes is required	
<b>Electrical System</b>	<p><b>ELECTRICAL SYSTEM</b> The chassis shall include a single starting electrical system which shall include a 12 volt direct current Weldon brand of multiplexing system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311 degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 275 degree Fahrenheit minimum high temperature flame retardant loom. All nodes and sealed Deutsch connectors shall be waterproof.</p> <p><b>MULTIPLEX DISPLAY</b></p>	

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	<p>The multiplex electrical system shall include (2) Weldon Vista IV displays which shall be located one (1) on the right side of the dash in the switch panel and one (1) on the left side of the dash in the switch panel. The Vista IV displays shall feature full color LCD display screens which include a message bar displaying the time of day and important messages requiring acknowledgement by the user which shall all be displayed on the top of the screen in the order they are received. There shall be eight (8) push button virtual controls, four (4) on each side of the display for the on-board diagnostics. The display screens shall be video ready for back-up cameras, thermal cameras, and DVD.</p> <p>The Vista IV displays shall offer varying fonts and background colors. The displays shall be fully programmable to the needs of the customer and shall offer virtually infinite flexibility for screen configuration options.</p> <p><b>DATA RECORDING SYSTEM</b> The chassis shall have a Weldon Vehicle Data Recorder (VDR) system installed. The system shall be designed to meet NFPA 1901 and shall be integrated with the Weldon Multiplex electrical system. The following information shall be recorded:</p> <ul style="list-style-type: none"> <li>• Vehicle Speed</li> <li>• Acceleration</li> <li>• Deceleration</li> <li>• Engine Speed</li> <li>• Engine Throttle Position</li> <li>• ABS Event</li> <li>• Seat Occupied Status</li> <li>• Seat Belt Status</li> <li>• Master Optical Warning Device Switch Position</li> <li>• Time</li> <li>• Date</li> </ul>	

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	<p>Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system. If Not Multiplex, please State Specs.</p>	
	<p>Amdor 12" LED ground lights; located under all cab doors, pump, all compartments, 2x under tailboard; lights to turn on in park and when truck is in reverse</p>	
	<p>Rubber arm marker lights on rear corners of body</p>	
	<p>FRC BCA221-A00 wireless InView TrueSight, rear and right side camera, single monitor mounted in the cab in a best-fit location</p>	
<b>Windshield Wipers</b>	<p><b>WINDSHIELD WIPER SYSTEM</b> The cab shall include a dual arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers which shall be affixed to a radial wet arm. The system shall include a single motor which shall initiate the arm in which both the left hand and right hand windshield wipers are attached, initiating a back and forth motion for each wiper. The wiper motor shall be activated by an intermittent wiper control located within easy reach of the driver's position.</p> <p><b>ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR</b> The windshield washer fluid level shall be monitored electronically. When the washer fluid level becomes low the yellow "Check Message Center" indicator light on the instrument panel shall illuminate and the message center in the dual air pressure gauge shall display a "Check Washer Fluid Level" message.</p>	
<b>Windows &amp; Mirrors</b>	<p><b>REARVIEW MIRRORS</b> Lang Mekra 300 remote, heater with lights and</p>	

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	<p>turn signal cab mirrors, heat on with window defrost system            . The mirrors shall be mounted to the cab doors with tubular stainless steel swing away arms.</p> <p>The flat mirror shall measure 15.00 inches high X 8.00 inches wide. A separate lower convex mirror which shall measure 5.50 inches high X 6.60 inches wide shall be provided below the flat mirror for a wider field of vision. The mirror glass shall be shatter proof and the mirror backs shall be molded plastic with a textured chrome finish and shall include amber colored marker lights.</p> <p>The flat mirrors shall be remotely adjustable vertically and horizontally via four way actuation switches. The control switches shall be mounted in the cab with-in easy reach of the driver.</p> <p>The mirrors shall include LED turn signals as an integral part of the separate lower convex. The mirrors shall be heated for defrosting in severe cold weather conditions.</p> <p><b>REARVIEW MIRROR HEAT SWITCH</b>            The heat for the rearview mirrors shall be controlled through a virtual button on the Vista display and control screen.</p>	
<p><b>Heater &amp; Defroster &amp; Air Conditioning</b></p>	<p><b>CLIMATE CONTROL</b>            The cab shall be equipped with a ceiling mounted combination defrost / heating and air-conditioning system mounted above the engine tunnel in a central location.</p> <p>The system shall offer sixteen (16) adjustable louvers. Six (6) of the louvers shall face forward towards the windshield, offering 45,000 BTU of heat at 320 CFM for defrosting. The system shall include six (6) rearward facing louvers to</p>	

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	<p>direct air for the crew area and four (4) for driver and officer comfort. The HVAC system shall be designed to produce 60,000 BTU of heat and 32,000 BTU of cooling. The HVAC cover shall be made of aluminum which shall be coated with a customer specified interior paint, or protective coating.</p> <p>All defrost/heating systems shall be plumbed with one (1) seasonal shut-off valve at the front corner on the right side of the cab.</p> <p>The air conditioner lines shall be a mixture of custom bent zinc coated steel fittings and Aero-quip GH 134 flexible hose with Aero-Quip EZ-Clip fittings.</p> <p><b>CLIMATE CONTROL DRAIN</b> The climate control system shall include a gravity drain for water management. The gravity drain shall remove condensation from the air conditioning system without additional mechanical assistance.</p> <p><b>CLIMATE CONTROL ACTIVATION</b> The heating, defrosting, and air conditioning controls shall be located on the center switch panel in the lower center section, in a position easily accessible to the driver and officer. The climate control shall be activated by a rotary switch.</p> <p><b>HVAC OVERHEAD COVER PAINT</b> The overhead HVAC cover shall be painted with a Zolatone #20-72 silver gray texture finish.</p> <p><b>A/C CONDENSER LOCATION</b> A roof mounted A/C condenser shall be installed centered on the cab forward of the raised roof against the slope rise.</p>	

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	<p><b>A/C COMPRESSOR</b> The air-conditioning compressor shall be a belt driven, engine mounted, open type compressor that shall be capable of producing a minimum of 32,000 BTU at 1500 engine RPMs. The compressor shall utilize R-134A refrigerant and PAG oil.</p>	
<p><b>Cab and Chassis</b></p>	<p><b>CUSTOM CAB STYLE</b> The cab shall be a custom, fully enclosed, ELFD model with a 10.00 inch raised roof over the driver, officer, and crew area, designed and built specifically for use as an emergency response vehicle by a company specializing in cab and chassis design for all emergency response applications. The cab shall be designed for heavy-duty service utilizing superior strength and capacity for the application of protecting the occupants of the vehicle. This style of cab shall offer five (5) seating positions the rear seats facing forward. The cab shall be constructed of 5052-H32 corrosion resistant aluminum plate. The cab shall incorporate tongue and groove fitted 6061-T6 0.13 &amp; 0.19 inch thick aluminum extrusions for extreme duty situations. A single formed, one (1) piece extrusion shall be used for the “A” pillar, adding strength and rigidity to the cab as well as additional roll-over protection. The cab side walls and lower roof skin shall be 0.13 inch thick; the rear wall and raised roof skins shall be 0.09 inch thick; the front cab structure shall be 0.19 inch thick. ELFD compartments - to be 18” opening, full height and transverse between the left and right sides of the cab, with hinged door, interior unistrut; cab rear wall is in standard location for MFD cab and does not extend into this compartment</p>	

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	<p>3x full width shelves, including lighting to be located in ELFD compartment; \$3000 budget for additional layout of this compartment to be included; provide options/ideas of storage solutions for fire fighter PPE</p> <p><b>OCCUPANT PROTECTION</b> The vehicle shall include the Advanced Protection System™ (APS) which shall secure belted occupants and increase the survivable space within the cab. The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection. All cab entry doors shall be full length in design to fully enclose the lower cab steps Grab Handle for safe exit and entry. The cab shall have successfully completed the preload side impact, static roof load application and frontal impact without encroachment to the occupant survival space when tested in accordance with Section 4 of SAE J2420 COE Frontal Strength Evaluation Dynamic Loading Heavy Trucks, Section 5 of SAE J2422 Cab Roof Strength Evaluation Quasi –Static Loading Heavy Trucks and ECE R29 Uniform Provisions Concerning the Approval of Vehicles with regard to the Protection of the Occupants of the Cab of a Commercial Vehicles Annex 3 Paragraph 5.</p>	
	2x USB and 2x 12V power outlets, locations to be confirmed on cab dash captain side	
	Install Shop air hose line within foot well driver side	
	Opticom control wires programming down Captain seat A post To be predetermined at Pre-conn	



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	New cabin air filtration system with HEPA air filter, located on the rear wall upper/middle location	
	Additional 6 fuse Blue Sea panels located under the switch panel, and on the side of the engine tunnel behind the officer seat	
	68USG unpainted stainless steel fuel tank	
	Galvanized fuel tank strap	
	8' fuel tank service line extension	
	Wheelbase and other frame dimensions as required; previously built truck is 203" with MFD cab	
	Full frame, crossmembers, battery boxes, all straps and other items to be galvanized, no exception (some items from Spartan not available as galvanized, and this is understood)	
	320Amp alternator	
	Cab roof antenna base, routed to under officer seat	
	A/C in cab.	
	Defroster fans for windshield.	
<b>PUMP</b>	<p>Hale Q-max. pump 7000 lpm mid ship.            Pump panel drivers side, both sides to be enclosed.            FRC InControl 400 pressure governor            Water tank poly with minimum of 750 US up to 1000 US gallons.            Foam Pro 2001.            Foam tank with 30 gallon capability and level gauge Class 1 model itl40r, intelli-tank foam tank level gauge.            Front bumper 24" stainless steel extension with hose well to hold 60 m of 44 mm hose and swivel discharge port located on top of bumper extension with checker plate cover to match extension. Lid to have cut out for the hose</p>	

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**SPECIFICATIONS cont'd.**

**NAME OF COMPANY (DEALER):** \_\_\_\_\_

ITEM/CATEGORY	CITY REQUIREMENTS	BIDDER TO STATE SPECIFICATIONS
	Front bumper to have Amber LED poles on bumper corners	
	<p>Driver side pump panel – Controls located 6" steamer with Task Force Tips PN: AXD3SP-NX-T Description: Valve, Ball, Jumbo Low Profile Intake, 4" Storz x 6" F. NH Sw.hydrant valve reducing to 4" storz</p> <ul style="list-style-type: none"> <li>1 - 2.5" intake</li> <li>2 - 2.5" discharge</li> </ul> <p>Passenger side - 6 " steamer Task Force Tips PN: AXD3SP-NX-T Description: Valve, Ball, Jumbo Low Profile Intake, 4" Storz x 6" F. NH Sw.hydrant valve reducing to 4" storz</p> <ul style="list-style-type: none"> <li>- 2.5" discharge</li> <li>- 3" discharge with 4" storz</li> </ul> <p>Rear side- - 2-2.5" discharge</p> <p>Hose beds covered with (4) separate checker plate compartment doors with piano hinges -</p> <ul style="list-style-type: none"> <li>- hose bed and connection front bumper 60 m of 44 mm foam capable</li> <li>- 2 cross lays 60 mm of 44 mm foam capable</li> <li>- divided storage of 240 m of 100 mm and 2-120 m of 65 mm pre connect with foam capable</li> </ul>	
	Canadian threads	
	Winterized, pump enclosed with heater	
	4.5" master gauges with dual pressure kpa/psi, with blue backlights	
	2.5" discharge gauges with blue backlighting, red backlighting for foam capable gauges	
	ITL40M multi-colour water tank level gauge	
	36,000BTU heater inside pumphouse, aimed at rear of gauges; switch, light and label on panel	
	Hale ESP12 primer	

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	Speedlays located forward of the pump panel and enclosed behind the roll-up door; stacked one ontop of the other; include Slide-Master full extension roll-out trays (aluminum construction), IMS spring-locks, aluminum trays with handhold, full removable from slide to set on the ground to repack; both trays to slide out to drivers side	
	Mechanical pump seals	
	3x alloy anodes (1x suction, 2x discharge)	
	<p>Officer seat and 3 crew seats to contain an SCBA bracket (smart Doc) - seats to be Bostrom Tanker 450 ABTS SCBA vinyl, not cloth or equivalent. Officer seat to be non-adjustable H.O. Bostrom or equivalent with storage compartment under seat. Add SCBA storage compartment to left &amp; right side wheel well area forward of the rear axle to hold SCBA cylinders; includes aluminum checker plate door, stainless steel hinge, latch, door ajar-sensor, aluminum tubes with rubber mat Add SCBA storage compartment to right side wheel well area rearward of the rear axle to hold SCBA cylinders; includes aluminum checker plate door, stainless steel hinge, latch, door ajar-sensor, aluminum tubes with rubber mat</p> <p>One EMS medical equipment storage cabinet to be custom made to fit between driver and Officer seat, accessible for the rear occupants. Equipped with buckles straps to hold in storage and rope lighting. Exact specifications/ measurements to be determined.</p> <p>Top Command Light KL-408D-W1 6xheads LED with remote or equivalent, controls storage mounted at pump panel.</p>	

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	<p>Harrison Hydra-gen HU06.0msv-16K/C-01010/00/0.smart power system hydraulic generator with house power outlets on both sides of truck or equivalent.</p> <ul style="list-style-type: none"> <li>- 1 external on body outlet 110/20amp mounted behind rear wheel well on driver <u>and</u> passenger side.</li> <li>- 2 in cab mounted on or near engine cover 110/20 amp.</li> <li>- 1 in right rear compartment 110/20amp.</li> <li>- 1 in right over wheel well compartment 110/20amp.</li> </ul> <p>Cord reel with 200 feet of 10/3 cord Circle D four outlet Junction box mounted on top of truck with access at pump panel driver's side.</p> <p>5 pullout try trays shall be minimum of 600lbs, R1, L1, R3, L3, 1 in rear lower.</p> <p>1 extra long pullout tray to be mounted in rear compartment, 1000lb capacity and Longest tray possible based on the dimensions of the compartment after the water tank and ladder storage is designed.</p> <p>PAC tool board mounting systems L1, L3, R1, R3.- complete rear wall of compartments</p> <p>4 adjustable shelves, R1, L1, R3, L3. 2 pullout tilt down 500 lbs, R2/L2. L1 compartment -1 vertical divider &amp; 1 pull out tool board Compartment sizes to be determined at pre-conn. Dri decking. Compartments painted with Rhino liner or equivalent. Amdor Rollup doors with drip trays. 3 coffin cabins on top, 19" deep, 21" wide</p>	

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	<p style="text-align: center;">and 69½“ long each or larger. Install (2) 12V power outlets Captain side, R3 for Hurst battery chargers</p> <p>Folding steps large Chrome cast aluminum- folding step with upper light, lower light, back lite logo, 1x rear wall right side to match other trucks. to be provided to access hose bed, approx 3x on left side and 1x on right side (for ladder storage access)</p> <p>Maximum length grab handles to be provided at rear body in all locations on both sides - state quantity and lengths provided</p> <p>Ladder storage, interior storage compartment on right side -</p> <ul style="list-style-type: none"> <li>- provision for 4 pike poles to be supplied, 2 12' fiberglass handle pike poles and 1 8' fiber glass handle, 1 New York hook</li> <li>- to be supplied, ground ladders 10' folding, 2 section 24', 16' roof ladder with hooks</li> </ul>	
	<p>Sigtronics system for driver, officer, 3 crew &amp; pump panel with 6 supplied headsets -</p> <ul style="list-style-type: none"> <li>- Model #US-67S intercom system shall be supplied with single radio interface capabilities. The master shall be capable of accepting up to 6 positions (plus exterior) and utilize a 12 volt power supply.</li> <li>- The intercom shall include: <ul style="list-style-type: none"> <li>▪ 6 #SE-8 single plugs behind the head radio transmit headsets shall be furnished. The headset shall have adjustable volume, noise cancelling electric microphone, adjustable head strap and a reversible, flex style boom which rotates for left &amp; right dress.</li> <li>▪ 6 #800120 headset jackets shall be provided at the required seating positions in the cab. One #800121 exterior headset jack shall be provided</li> </ul> </li> </ul>	

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	<p>for remote mounting at the pump panel.</p> <ul style="list-style-type: none"> <li>▪ Three #800122 radio transmit switches shall be provided at the drivers, officers seats and the pump panel. Location to be determined.</li> </ul>	
	<p>Sirens: 2 Hadley brand E-tone air horns located in front bumper recessed into bumper between frame rails, activated by button on Officer side of dash.</p> <p>Siren: Federal Signal Q2B mounted on top of bumper closest to driver's side, activated by button on Officer &amp; driver side of dash Electric eQ2B with speaker mounted in center of front bumper, control panel within reach of Driver and Officer.</p> <p>Traffic Advisor: Whelen TAL 65 or equivalent</p>	
	5 On Scene Solutions Talon Helmet Brackets installed at final inspection	
	<p>MSA Evolution 6000 extreme Thermal Imaging Camera and charging base. Installed 5 stream lights with individual charging systems. No substitution installed MSA altair 5 gas &amp; PID monitor with charging dock. All provided and install 12V wired battery direct. Location to be decided during inspection No substitution</p>	
	Class IV hitch receivers on both sides behind rear tires and front. Minimum of 9000 lbs Ziamatic Quic-chock folding wheel chocks mounted under body.	
	Front receiver/hitch rated to 15,000lbs	
	2x 5"x10' suction hose with compartment coming of the rear of truck Appendix "A" Picture	No required

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	PAC Tool Mounts Below: to be quoted separately on the Appendix A: Form of Tender, actual quantities to be determined at pre-build meeting. Price to be adjusted by change order.	
	<i>Provide per item cost - PAC 1004-Y</i>	
	<i>Provide per item cost - PAC 1070-Y</i>	
	<i>Provide per item cost - PAC 1101</i>	
	<i>Provide per item cost - PAC 1102</i>	
	<i>Provide per item cost - PAC K5020-Y</i>	
	<i>Provide per item cost - PAC 1028</i>	
	<i>Provide per item cost - PAC 1041</i>	
	<i>Provide per item cost - PAC 1040-4</i>	
	<i>Provide per item cost - PAC 1042-1</i>	
	<i>Provide per item cost - PAC 1042-2</i>	
	<i>Provide per item cost - PAC K5009-Y</i>	
	<i>Provide per item cost - PAC K5010-Y</i>	
	<i>Provide per item cost - PAC K5011-Y</i>	
	Black Turtle-Tile on all compartment floors	
	4x maximum size coffin compartments with 2x per side, each approx half-length of the body, 25-28" across and approx 20-24" deep; coffin compartments to be covered and lighted by main hosebed doors and not separate doors	
	Rear tailboard to extend approx 10"	
	Upper step below the hosebed to be provided, approx 8" deep and as wide as possible	
<b>Striping</b>	Scotch–lite striping NFPA compliant matching NF colours. A 6" high Scotch lite stripe shall be provided, stripe shall be applied on a minimum of 60% of	

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	<p>each side of the unit, 40% on the front of the unit. The Scotch-lite stripe shall be determined by the Fire Department. Scotch-lite will be white in colour, rear chevron striping. The entire rear of the truck shall be covered with alternating strips of reflective striping which shall be 6” Scotch-lite and red and yellow in colour. Appendix “A” Picture</p>	
<b>Lighting</b>	<p>Whelen 295HFSA7 electronic siren, located on console Whelen SA315P electronic siren speaker, 1x on each side of bumper Door ajar warning light and audible alarm Whelen 72" Freedom IV Left side red, Right side Blue</p> <p>Left side upper body - 2x M9J red/blue warning lights; 2x M9LZC scene lights Rear upper body - 2x M9J red/blue warning lights; 2x M9LZC scene lights Right side upper body - 2x M9J red/blue warning lights; 2x M9LZC scene lights Front cab grill - 2x M6J red/blue warning lights Left side of cab/body - 3x M6J red/blue warning lights or equal to fit available space Right side of cab/body - 3x M6J red/blue warning lights or equal to fit available space Rear/brake cluster - 2x M6J red/blue warning lights</p>	
<b>Add On</b>	Easy access Right and Left Tow Eyes or Hooks attached to rear and front Frame	
<b>Mfg.'s Corrosion Warranty</b>		
<b>Warranty</b>	Chassis warranty - per Spartan standard warranties offered; 3 year chassis warranty	
	Bumper to Bumper warranty - 3 years	
	Body warranty - 10 year	



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	Paint warranty - 10 year pro-rated	
	Hale pump warranty - standard 5 year parts and 2 year labour	
	Piping warranty - 10 year stainless steel piping	
	Water tank - lifetime warranty	
	Other items - per manufacturer <i>no items under 1 year.</i>	
	<i>Copies of all warranties to be included.</i>	
<b>Build Inspection</b>	Pre-construction meeting at manufacturer for three (3) FD reps	
	Mid-build inspection for three (3) FD reps	
	Final-inspection for three (3) FD reps	
	Inspections include airfare, hotels, meals	
<b>Service Diagnostics</b>	Supply Lap Top Diagnostic Software	
<b>Manuals</b>	Complete Parts Manuals	
<b>Manuals</b>	Complete Service Repair Manuals	
<b>Delivery</b>	Must be delivered by April 1, 2021	
<b>License</b>	City will License	
<b>Filters</b>	Supply all Filters for First Service	

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This picture shows the opening for the Hard Suction location. The opening is 10.5 inches square.



This picture shows the lettering that is on our apparatus. "Niagara Falls Fire" is 124 inches long and the height of the gold is 11 inches then the black shadowing