FORM A: BID
(See B8)

1. Contract Title — SUPPLY AND DELIVERY OF AN AERIAL LADDER FIRE APPARATUS

2. Bidder

_____
Name of Bidder

_____
Usual Business Name of Bidder as it appears on Invoice (if different from above)

_____
Street

_____
City Province Postal Code

_____
Email Address of Bidder

_____
Facsimile Number

(Mailing address if different)

_____
Street or P.O. Box

_____
City Province Postal Code

_____
GST Registration Number (if applicable)

The Bidder is:

(Choose one)

☐ a sole proprietor

☐ a partnership

☐ a corporation

carrying on business under the above name.

3. Contact Person — The Bidder hereby authorizes the following contact person to represent the Bidder for purposes of the Bid.

_____
Contact Person Title

_____
Telephone Number Facsimile Number

_____
Email Address

4. Definitions — All capitalized terms used in the Contract Documents shall have the meanings ascribed to them in the General Conditions and D4.

5.	Offer	The Bidder hereby offers to perform the Work in accordance with the Contract for the price(s), in Canadian funds, set out on Form B: Prices, appended hereto.
6.	Commencement of the Work	The Bidder agrees that no Work shall commence until he/she is in receipt of a notice of award from the Award Authority authorizing the commencement of the Work.
7.	Contract	By submitting a bid in response to this Tender, the Bidder certifies that it has read, understands, and agrees to the terms and conditions of this Tender and that the Tender, in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Bid.
8.	Addenda	The Bidder certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract: No. _____ Dated _____ _____ _____ _____ _____
9.	Time	This offer shall be open for acceptance, binding and irrevocable for a period of sixty (60) Calendar Days following the Submission Deadline.
10.	Indigenous Self-Declaration	The City is requesting that Bidders identify if their business is at least 51% owned by one or more Indigenous persons of Canada. ☐ YES, 51% or more Indigenous ownership ☐ NO, it is not This information is being gathered for statistical purposes only and will not be used for purposes of evaluation.

11. Signatures

The Bidder or the Bidder's authorized official or officials have signed this

_____ day of _____ , 20_____ .

Signature of Bidder or
Bidder's Authorized Official or Officials

_____

_____
(Print here name and official capacity of individual whose signature appears above)

_____

_____
(Print here name and official capacity of individual whose signature appears above)

FORM B: PRICES
(See B9)

SUPPLY AND DELIVERY OF AN AERIAL LADDER FIRE APPARATUS

UNIT PRICES

ITEM NO.	DESCRIPTION	SPEC. REF.	UNIT	APPROX. QUANTITY	UNIT PRICE
1.	Aerial Ladder Fire Apparatus (100')	20031	Each	1	

_____
Name of Bidder

FORM N: DETAILED SPECIFICATIONS 20031
AERIAL LADDER FIRE APPARATUS

1.0 DESCRIPTION OF EQUIPMENT/APPLICATION

1.1 These specifications describe **Aerial Ladder Fire Apparatus** and other equipment and features as specified herein. The Winnipeg Fire Paramedic Service (WFPS) wishes to acquire Aerial Ladder Fire Apparatus that is a highly specialized piece of equipment that will be responding to fire, rescue, medical and various other types of calls. The vehicle must incorporate the highest level of safety components to effectively protect WFPS personnel when travelling in and subsequently when operating this unit.

1.2 The **Aerial Ladder Fire Apparatus** shall be a new 2021 model year or newer.

1.3 The **Aerial Ladder Fire Apparatus** and all other items/components shall be the manufacturer's latest model. The equipment shall be furnished complete and ready for operation. Any parts or accessories not specifically mentioned, but which are required to complete and place the equipment and associated attachments in successful operation shall be furnished as though specifically mentioned in these specifications. The equipment and associated attachments, and all parts thereof, shall conform in strength and quality of material and workmanship, to the best standards and engineering practice of the industry.

1.4 It will be the responsibility of the Bidder to inform the City of any errors or omissions in these specifications, for under this Contract the Contractor shall be held responsible for the satisfactory operational function of the equipment.

2.0 OTHER SPECIFICATIONS AND STANDARDS

2.1 All applicable SAE standards form an integral part of these specifications and shall have precedence in any conflict concerning minimum acceptable standards.

2.2 The **Aerial Ladder Fire Apparatus** shall comply with the applicable regulations:

(NFPA 1901) National Fire Protection Association Standard latest revisions

Transport Canada, National Safety Mark, NSM:
http://www.tc.gc.ca/eng/acts-regulations/acts-road.htm

Manitoba Safety and Health Regulation, Parts 12, 16, 22:
http://web2.gov.mb.ca/laws/regs/current/217.06.pdf

Canadian Motor Vehicle Safety Standards C.M.V.S.S.
http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1038/section-sched3.html

PART B - Manitoba Highway Traffic Act regulations and requirements including, but not limited to, a Manitoba Government Inspection with Safety Sticker.
http://web2.gov.mb.ca/laws/regs/index.php?act=h60

Canadian Standards Association, CSA:
http://www.csagroup.org/

Under Writers of Canada, U/L:
http://www.ulc.ca/

Society of Automotive Engineers, SAE:
http://www.sae.org/

City of Winnipeg Lighting Visibility Standard:
http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.

2.3 In Canada, Modification to new vehicles can only be done at facilities that are recognized by Transport Canada. All of these facilities must have a National Safety Mark from Transport Canada. Transport Canada National Safety Mark is a label that indicates that the modifications are compliant with all current Canadian Motor Vehicle Safety Standards (CMVSS).

STATE (NSM) # _____

2.4 The vehicle shall be complete with a current Manitoba Safety Sticker affixed to the driver's side window.

2.5 It will be the responsibility of the Bidder to inform the City of any deficiencies in these specifications, for under this Contract the Contractor shall be held responsible for the design, performance, reliability and satisfactory operational function of the units.

3.0 SERVICE FACILITY

3.1 For the purpose of warranty repairs, the Bidder shall have an authorized service facility located within 10 km of the boundaries of the City of Winnipeg. The facility, or a portion thereof, shall be dedicated to the service and maintenance of the type equipment being offered. Further to 9.1, Bidders shall provide a description of the service facility including, but not limited to, number of qualified service staff, years of service experience, and general service capabilities within three (3) Business Days upon request of the Contract Administrator. The Winnipeg Fire Department's Emergency Mechanical Services Branch shall be an authorized warranty repair facility. The emergency mechanical services branch shall have the ability to do authorized warranty repair work and provide an invoice to bill back parts and labour to the bidder. It shall be the decision of the Director of the Emergency Mechanical Services Branch as complete the warranty work at the WFPS facility or to send the work to the OEM for warranty. The OEM service facility must be able to start the requested work within three (3) business days.

4.0 REFERENCES

4.1 Provide five (5) references where this equipment is used in a working environment where climatic conditions are similar to the City of Winnipeg.

5.0 MAKE & MODEL

5.1 **State** make, year and model of the equipment bid- _____

6.0 INSTRUCTIONS FOR COMPLETION OF SPECIFICATIONS

6.1 Each bid will be evaluated based on adherence to all terms, conditions and requirements outlined in the Bid Opportunity package.

6.2 All items in these specifications must be answered indicating compliance or non-compliance. **BIDDERS SHALL STATE "YES" FOR COMPLIANCE OR STATE DEVIATION**, or give reply where requested to do so. Deviations and/or equivalents shall be clearly stated and fully detailed. Deviations and/or equivalents will be considered subject to evaluation. In every instance where a brand name or design specification is used, the City will also consider deviations and/or equivalents.

6.3 **EACH BIDDER IS REQUIRED TO FILL IN EVERY BLANK. FAILURE TO DO SO MAY BE USED AS A BASIS FOR REJECTION OF BID**

7.0 PERFORMANCE RELIABILITY

7.1 The responsibility for the design of the **Aerial Ladder Fire Apparatus**, its performance and reliability shall rest upon the Contractor.

7.2 The term “repeated failures” as used herein is defined to mean that the same component, subassembly, or assembly develops repeated defects, breakdowns and/or malfunctions rendering the vehicle inoperative, or requiring repeated shop correction, service and/or replacement during the warranty period applicable for said component, subassembly, of assembly. Minor items or ordinary service adjustments are not included, or considered under the scope of “repeated failures”, as well as other factors, such as operational damage due to accidents, misuse or lack of proper maintenance, service and lubrication attention by not following the manufacturer’s preventative maintenance schedule.

7.3 Where the **Aerial Ladder Fire Apparatus** develops “repeated failures” in service, the Contractor shall make any necessary engineering changes, repairs, alterations or modifications in order to guarantee reliability of performance.

7.4 The equipment shall be capable of consistent top performance in City of Winnipeg Environment. Note: The City of Winnipeg has four seasons with ambient temperatures ranging from approximately 90°F (32°C) to -40°F (-40°C)

8.0 FUEL

8.1 Where applicable, all equipment must be full of fuel upon delivery **(no exceptions).**

9.0 QUALIFICATIONS OF MANUFACTURER & CONTRACTOR

9.1 The manufacturer of the **Aerial Ladder Fire Apparatus** shall have experience manufacturing the equipment.

9.2 The manufacturer shall have in effect a documented quality control program ensuring that the quality of materials and workmanship, including welding, conforms to the best standards and engineering practice of the industry.

9.3 The Contractor shall have experience servicing, repairing and maintaining **Aerial Ladder Fire Apparatus** of the type being offered.

10.0 CHASSIS SPECIFICATIONS

GVWR, DIMENSIONS, WEIGHT DISTRIBUTION & TURNING RADIUS

10.1 Weights: _____

The Truck shall not exceed the City of Winnipeg’s limit for gross vehicle weight, axle and tire loads

Note: The City of Winnipeg and the Province of Manitoba limits the gross vehicle weight and axle and tire loads to:

- Front axle (steering axle) – 7300 kg (16,094 lbs.)
- Rear axle (single axle) – 9100 kg (20,062 lbs.)
- Tire load – 9 kilograms for each millimeter width of tire (approximately 500 lbs. per inch of tire width).

10.2 **Weigh Scale Ticket:** _____

The Contractor shall provide a certified weigh scale ticket upon delivery of the completed unit. The scale ticket shall include front and rear axle weights including five (5) operators, full of water, foam all equipment as specified in this tender and full of fuel.

10.3 **Weight distribution:**
State weight distribution with water and foam and all associated tools and equipment.
Front: _____

Rear: _____

10.4 **Center of gravity:** _____
The vehicles shall meet all safety standards in relation to center of gravity.

10.5 **GVWR**
Gross vehicle weight rating (GVWR), **state.** _____

10.6 **Front (GAWR)**
Gross axle weight rating front (GAWR), approx. 21,000lbs. shall be a 10% greater than actual vehicle weight carried on front axle, **state.** _____

10.7 **Rear (GAWR)**
Gross axle weight rating rear (GAWR), approx. 27,000lbs. shall be 10% greater than actual vehicle weight carried on rear axle, **state.** _____

10.8 **Tare weight**
State the tare weight of the apparatus being bid:

Front: _____
Rear: _____
Total: _____

10.9 **Dimensions**
State the following dimensions: (***Note: No part of the vehicle, including lights, shall exceed the overall height specified.***

_____

a) **Overall width** – Shall not exceed 102 in.

b) **Overall height** – Shall not exceed 144 in. Preference is to achieve as low an overall height as possible. _____

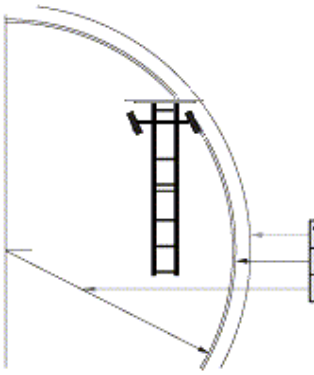
c) **Overall length** – Shall not exceed 48 ft. Preference is to achieve as short an overall length as possible. _____

d) **Wheelbase** – **State.** _____

e) **Ground clearance** – Shall not be less than 8 in. _____

f) **Turning Radius**- **State** turning radius- See example: _____

10.10 **Turning Radius- State** the vehicle turning radius, wall to wall. Curb to Curb.
Example:



	Left Turn	Right Turn	Tolerance
Wall to Wall Diameter (ft)	130.9	111.4	+/- 3.0
Curb to Curb Diameter (ft)	127.2	106.9	+/- 3.0
Turning Radius (ft)	62.9	52.7	+/- 1.5

a) **Wall to Wall (ft.)** _____
b) **Curb to Curb(ft.)** _____
c) **Turning Radius (ft.)** _____

ENGINE

10.11	Type	Six cylinder Cummins ISX12, ISX15 or Detroit DD15 with integrated exhaust brake. Must meet current EPA Standards. Cummins diesel Tier IV Final - Emergency Service Vehicle) rated.	_____
10.12	Engine location	Over front axle.	_____
10.13	Horsepower	Approximately 550-600 HP gross.	_____
10.14	Torque	Approximately 16,500 lbs-ft.	_____
10.15	Engine governor	Electronic, compatible with fire pumper operation.	_____
10.16	Oil drain plug	Magnetic type.	_____
10.17	Oil filter	As recommended by the engine manufacturer, full flow, spin-on filter.	_____
10.18	Fuel filter/primary	Recommended by the engine manufacturer, spin-on filter, remote mounted on the chassis frame such that it is easily accessible for servicing.	_____
10.19	Fuel filter/secondary	(If recommended) spin-on filter. The filter shall be remote mounted on the chassis frame, easily accessible for servicing.	_____
10.20	Starter	12-volt electric with over crank protection. The starter shall be shielded from exhaust heat where required.	_____
10.21	Air cleaner	Heavy-duty replaceable element, dry type, as recommended by the engine manufacturer.	_____

ENGINE COOLING SYSTEM

10.22	Engine cooling	The engine cooling system shall be in accordance with the engine manufacturer's recommendations for front-engine fire pumper application and an ambient	_____

		temperature range of 95F (35C) to -45F (-43C). The cooling system shall be of adequate capacity to maintain the coolant temperature within the recommended range during operation of the fire pump and under high ambient temperature conditions without the use of an auxiliary cooler. The normal operating temperature of the coolant system shall be approximately 180F (92C).	
10.23	Radiator	Pressurized type with surge tank or coolant recovery system.	_____
10.24	Fan drive	Thermostatically controlled fan clutch, viscous type or air clutch.	_____
10.25	Coolant	**Extended Life** coolant, antifreeze to -35°F (-37°C).	_____
10.26	Coolant filter	Spin on type, as recommended by manufacturer.	_____
10.27	Coolant hoses	Green line heavy-duty heater hose P#G6304-063.	_____
10.28	Hose clamps	Spring loaded constant torque type.	_____

ELECTRICAL SYTEM

10.29	Electrical supply	Multiplex Electrical System, Cold Cranking Amp Heavy Duty Batteries, Battery Charging System, Ground Wire, and Heavy Duty Alternator with thermal protection and over crank protection**.**	_____
10.30	Batteries	Minimum Four (4) batteries, 12-volt, group 31, approximately 2700-2850 CCA.	_____
10.31	Battery location	Galvanized battery housing **state** location.	_____
10.32	Battery cables	4/0 gauge, colour coded welding type cable, with connector ends crimped, pull tested and sealed with heat shrink tubing at all connections. Positive battery cables secured to the frame and isolated from shorting to ground. All battery & starter cables shall be properly isolated from the frame rail and secured individually so they won't rub against each other.	_____
10.33	Battery charging system	Blue sea systems P12 Battery Charger (40A) 7532 , with P12 Battery Charger LED Remote 7520, SureEject 7851 auto eject and Air Brake Compressor**.**	_____
10.34	Charging system plugin	Located between driver's door and the rear passenger door. Automatic ejector type with a 20 Amp receptacle. Located approx. 60 to 80 in. (1524 – 2032 mm) above ground level.	_____
10.35	Ground wire	The electrical wiring harness shall have a dedicated ground wire running the full length of the truck. Weather tight junction boxes shall be provided at the dash, pump panel and the rear of the truck. This ground wire shall be connected directly to the	_____

		battery negative post. All electrical systems shall be grounded to this ground wire. The total resistance of this ground wire shall not exceed 0.2 Volts drop at any point with all circuits turned on. The conventional grounding system using the frame shall be maintained. Ground wires must be secured to the frame rail	
10.36	Alternator	420 Amp leece Neville alternator	_____
10.37	Battery disconnect	Power to all electrical systems shall be wired through a power disconnects system with the master switch or switches located in the cab for operation by the driver. The system shall be designed to prevent alternator damage in the event that the master switch is placed in the off position while the engine is running. **State** details of the power disconnect system. _____ _____ _____ _____ _____ _____	_____

FUEL SYSTEM

10.38	Fuel tank (galvanized)	Approx. 65-75 Imp. Gallons (246-283L) Capacity. Fuel tank to be mounted as high as possible in the frame.	_____
10.39	Tank straps	Galvanized steel straps with 1/16 in. rubber or neoprene isolators to prevent galvanic corrosion.	_____
10.40	DPF tank	**State** capacity and location	_____
10.41	Fuel transfer pump	Pump is to be external to fuel tank, back flow checked and in line with fuel supply lined.	_____

EXHAUST SYSTEM

10.42	Horizontal muffler and exhaust	Aluminized or stainless steel.	_____
10.43	Tailpipe	Located on the right side of the apparatus, suitable for use with an exhaust extraction system. The tailpipe shall be 90 degree to the rub rail, shall extend ½ in. (13 mm) beyond the rub rail and shall be 3 in. (76 mm) below the rub rail. Hanger brackets shall be 18 in. (457 mm) from the rub rail. **Note: The tailpipe configuration is intended for use with a "Plymovent" automatic exhaust disconnection system and shall include the installation of the appropriate adapter.**	_____

10.44	Exhaust Accessories	The body manufacturer on the vehicle shall ship an exhaust temperature mitigation device loose for installation. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet.	_____

TRANSMISSION

10.45	Transmission	Transmission shall be an Allison EVS 4000 automatic transmission as for Fire and Emergency use and rated for the requested horsepower and torque. The transmission shall have an intergraded hydraulic transmission retarder.	_____
10.46	Torque converter	As recommended by the Manufacturer.	_____
10.47	Direct drive lockup	For pumping operation.	_____
10.48	Shifter	As recommended by the Manufacturer.	_____
10.49	Transmission filter	As recommended by the Manufacturer.	_____
10.50	Drain plug	Magnetic type.	_____
10.51	Oil level dipstick	Bayonet type with high and low level markings.	_____
10.52	PTO opening	For this application.	_____

DRIVE SHAFTS

10.53	Drive shaft	Drive shaft Spicer 1710 Series drive shafts with Glide-coat splines. Bidder to provide engine/transmission SCAN and OEM recommendations for best-suited match.	_____
10.54	Drive shaft clearance	Adequate clearance to allow for greasing of the drive shaft U-joints from underneath the vehicle.	_____

AXLES AND SUSPENSION

10.55	Front axle	24,000 lbs. capacity c/w oil lubricated wheel bearings.	_____
10.56	Front Suspension	Heavy duty suspension that will create a smooth driving experience for the crew, while being able to preform on degraded road conditions, torsion bar front suspension, or a straight axle with leaf spring	_____
10.57	Shock absorbers	Front, heavy duty, double acting.	_____
10.58	Rear axle	Meritor RT-50-160 Tandem axle, 54,000 lbs. capacity. Heavy-duty differential housing.	_____
	Differential control	Driver Controlled rear differential	_____

10.59	Drive ratio	Capable of achieving 100 km/hr (60 mph).	_____
10.60	Differential drain plugs	Magnetic type.	_____
10.61	Differential vent	Remote vent. Vent to c/w 10 micron breathable filter, water/dust cap and check value.	_____
10.62	Rear suspension	Hendrickson firemaax air ride suspension with capacity to best match GAWR to come with levelling valve for each spring. Standard leaf spring suspension is also acceptable.	_____

WHEELS AND TIRES

10.63	Front wheels	Black aluminum hub piloted, 10 bolt with gold pin stripe on outer face.	_____
10.64	Front tires	Michelin, 425/80/R 22.5 all-weather tread design	_____
10.65	Rear wheels	Black aluminum hub piloted, 10 bolt. with gold pin stripe on outer face.	_____
10.66	Rear tires	Michelin 12R22.5 all-weather tread design.	_____
10.67	Spare wheel & tire	One (1) wheel and tire to match front wheel and tire. Spare wheel & tire to be shipped loose.	_____

BRAKE SYSTEM

10.68	Brake system	Full air service brake system with spring loaded parking brakes and an anti-lock system.	_____
10.69	Antilock braking system	Comes with roll stability control, Meritor/Wabco four channel systems, providing independent antilock braking control at four wheels and traction control at rear drive wheels.	_____
10.70	Disc brakes (front)	Front disc brakes.	_____
10.71	Drum brakes (rear)	Meritor outbound drum brakes rear.	_____
10.72	Slack adjusters	Meritor automatic type.	_____
10.73	Parking brakes	Spring set parking brake on rear service brake system.	_____
10.74	Air lines	Colour-coded, reinforced nylon tubing.	_____
10.75	Air compressor	Water-cooled, pressure-lubricated compressor, approx. 18.7CFM capacity. The compressor air intake shall be plumbed into the engine air intake after the air cleaner.	_____
10.76	Air dryer	Heated, spin-on desiccant type.	_____
10.77	Moisture ejector	Heated, automatic, in wet tank only.	_____
10.78	Drain valves	Cable operated manual drain valve P#WA12105, in each air tank except the wet tank. The cables shall	_____

		be vinyl coated and shall terminate at the bottom at the bottom edge of the cab or at the rub rail on the body.	
10.79	Auxiliary air reservoir	Nominal 1200 in^3 (20 L) air reservoir to operate the vehicle air horns and to function as an emergency parking brake release. A dash-mounted control, located directly below the main parking brake release, shall allow the air in the reservoir to be used to release the parking brakes. The control shall be non-detented, spring return type such that it cannot be left engaged in the brake release position.	_____
10.80	External air inlet	Milton A style air fitting installed on left side of chassis so the WFD can plug their shop air lines into the truck. Shall be plumbed to the outlet side of the air dryer for the option to put alcohol into the air system without going through the dryer.	_____
10.81	Airline sources	All air lines shall be sourced after the air dryer.	_____
10.82	Auxiliary pump	Blue sea systems air brake compressor pump. Horizontal or vertical accepted	_____
10.83	Park brake valve location	Park brake valve must be located as close to the driver as possible. This item shall be discussed at the preproduction meeting	_____
	STEERING		
10.84	Power steering	Hydraulic power steering with thermostatically controlled oil cooler, tilt and telescopic style, rated for front GVWR rating.	_____
10.85	Steering wheel	2 spoke. Padded style.	_____
	FRAME		
10.86	Galvanized frame and components	Heavy duty custom steel plate aerial frame with integral torque box or a Galvanized steel double frame rail(s) with aerial torque box. The frame shall be designed and constructed to match the GVWR and application of the vehicle as an aerial ladder fire apparatus. The frame shall be hot dip galvanized prior to assembly and attachment of any components. The frame rails shall have an OEM approved undercoating. The components that shall be galvanized shall include: • Main frame “C” channel or channels • Front splayed rails and fish plates • Cross members (excluding suspension cross members) • Cross member gussets • Fuel tank mounting brackets • Fuel tank straps • Air tank mounting brackets	_____

- Exhaust mounting brackets
- Air cleaner skid plate
- Radiator skid plate
- Battery supports, battery trays and battery covers

10.87	RBM	RBM shall be rated for GVWR request, application and intended use.	_____
10.88	Front frame extension	Bolt on as required for front bumper stated herein.	_____
10.89	Front bumper	Black heavy-duty front bumper. Bumper bolted to the chassis frame. Bumper apron to be 3/16" –anti-slip. The front bumper shall have 45 degree angled corners. There shall be Chevron on the front face of the bumper.	_____
10.90	Front tow hooks	Frame shall have forward “forks” to which the eyehooks are affixed.	_____
10.91	Rear tow hooks	Two (2) eyehooks, bolted to the chassis frame. A cross-member shall be located in the chassis frame at the tow hook location. The tow hooks shall be easily accessible.	_____

CAB AND CAB EQUIPMENT

10.92	Custom cab	a) This apparatus shall fully incorporate a clean cab concept. The clean cab shall allow for easy decontamination. The cab interior shall be of a light color to show dirty easily. There shall be anti-slip seamless cab floor to allow for easy decontamination and washing. There shall be no firefighting equipment stored in the cab.	_____
		b) The details of the clean cab shall be discussed at the preproduction meeting.	_____
		c) The cab shall be a custom aerial cab, fully enclosed, 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 up to five (5) seating positions.	_____
		d) The cab shall have two non-SCBA seats located on the rear wall that face forward. These two seats shall be positioned in the middle of the rear wall to allow for a clear forward view of the fire scene. There shall be a third seat that is offset to one side that functions as a jump seat and has a flip up seat bottom. There shall be enough space between the three forward facing rear seats to allow crew personnel to be seated	_____

comfortably.

10.93	Cab design	a) The cab shall incorporate a fully enclosed design with sidewall roof supports, allowing for a spacious cab area with no partition between the front and rear sections of the cab. To provide a superior finish by reducing welds that fatigue cab metal; the roof, the rear wall and side wall panels shall be assembled using a combination of welds and proven industrial fabrication	_____
		b) Adhesives designed specifically for aluminum fabrication for construction.	_____
		c) Cab tilt system shall allow for electric over hydraulic tilting of the cab with a permanently mounted rocker switch mounted in the right side pump panel. Cab tilt system shall include a hydraulically operated manual cab tilt option in the event the pump fails	_____
10.94	Cab construction	a) The vehicle shall be distinguished by an all-welded aluminum and fully enclosed tilt cab. The cab shall be designed exclusively for fire/rescue service and shall be pre-engineered to ensure long life. The cab shall be constructed using multiple aluminum extrusions in conjunction with aluminum plate, which shall provide proven strength and the truest, flattest body surfaces ensuring less expensive paint repairs if needed. All aluminum welding shall be completed to the American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum.	_____
		b) The cab shall be constructed of corrosion resistant aluminum plate or stainless steel. The cab shall be constructed from minimum of 3/16" 6061-T6 or 6063-T6. Aluminum extrusions for extreme duty situations. The cab and sub structure shall create an occupant compartment that will create a roll over protection system. The cab shall meet or exceed NFPA 1901 standards. The cab shall be fully crash test rated.	_____
10.95	Cold weather insulation	Extreme climate full insulation under cab, doors, roof, ceiling, firewall, and walls and vinyl padding package for walls and ceiling. Insulation shall be non-hygroscopic, mildew proof and fire retardant. Vinyl shall be grey, heavy-duty automotive type. Also, as required to meet HVAC needs and acceptable sound suppression requirements.	_____
10.96	Interior and exterior seams	All interior and exterior seams shall be sealed for optimum noise reduction and to provide the most favourable efficiency for heating and cooling retention.	_____

10.97	Exterior width	**State** width.	_____
10.98	Cab interior design	The cab interior shall be designed to afford the maximum usable interior space and attention to ergonomics with hip and legroom while seated which exceeds industry standards. The crew cab floor shall be flat across the entire walking area for ease of movement inside the cab.	_____
10.99	Cab interior height	**State** interior height.	_____
10.100	Cab doors	The cab shall be a four-door design. The cab doors shall be large enough for personnel in full firefighting gear to enter and exit. The cab shall incorporate a progressive two (2) step configuration from the ground to the cab floor at each door opening. The progressive steps are vertically staggered and extend the full width of each step well allowing personnel in full firefighting gear to enter and exit the cab easily and safely.	_____
10.101	Cab steps	Shall meet the requirements of NFPA 1901.	_____
10.102	Insulating material	Insulating material to prevent galvanic corrosion shall be provided at all possible areas of contact between aluminum and steel. The insulation material used shall be nonporous.	_____
10.103	Door handles/latches exterior	As recommended by manufacturer.	_____
10.104	Door handles/latches interior	Flush-mounted, paddle handle type, located such as to prevent accidental actuation.	_____
10.105	Door latch striker plates	Recessed such as not to protrude into the door opening area.	_____
10.106	Door hinges	As recommended by manufacturer.	_____
10.107	Weather stripping	Automotive style.	_____
10.108	Grab handles	Grab handles as per NFPA standard. Grab handles shall be of a one-piece design.	_____
10.109	Step area lights	LED recessed, side mounted light in each entrance step area. The lights shall be activated by door switches.	_____
10.110	Seats/seating layout	All seats shall be with grey non-absorbent extreme duty vinyl. Three Front Facing seats on rear wall of cab	_____
10.111	Driver’s seat	Heavy duty fire/rescue air seat 5" Fore/Aft Adjust and occupancy switch.	_____
10.112	Officer’s seat	Heavy duty fire/rescue, non SCBA air seat 5" Fore/Aft Adjust and occupancy switch.	_____
10.113	Air seat supply	Air supply for the seats shall be taken from the auxiliary air reservoir.	_____

10.114	Rear seats	Forward Facing Crew (2): HO. Heavy duty fire/rescue, non SCBA seats and occupancy switches. One non-jump seat.	_____
10.115	Seat belts	Three-point, retractable type for all seats. Seat belts shall be designed to be long enough for large operators, and female Deutsch connections to extend so as to be easily accessible.	_____
10.116	Winter Front	Apparatus shall come with a custom fit removable winter front with adjustable openings that allow air to go through if required.	_____
10.117	Occupant Protection System	The system shall include the following components:	
		a) Frontal air bags to protect the driver and officer	_____
		b) Side curtain air bags to protect occupants in all seating positions	_____
		c) Seat belt retractor pre-tensioners tighten the seat belts around the occupants, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.	_____
		d) Control Module- receives inputs from the outboard sensors, selectively deploys APS systems, and records sensory inputs immediately before and during a detected qualifying event.	_____
		e) Integrated outboard crash sensors mounted at the perimeter of the vehicle - detects a qualifying front or side impact event and monitors and communicates vehicle status and real time diagnostics of all critical subsystems to the control module.	_____
		f) Fault-indicating Supplemental Restraint System (SRS) light on the driver's instrument panel.	
10.118	Floor covering	Heavy duty rubber anti-slip seamless floor-mat that is non-absorbent and works with the clean cab concept and will allow for easy decontamination	_____
10.119	Headliner	Grey, heavy duty non-absorbent vinyl with padding.	_____
10.120	Windows	Tinted safety glass for all windows including windshield. Apparatus shall be equipped with power windows. The apparatus shall include an automatic windows up feature, when the apparatus is placed in pump gear the multiplex system shall automatically close the windows to keep diesel exhaust emissions out of the cab	_____

10.121	Window fans	If recommended by the manufacturer to assist in defrosting the windows, four (4) auxiliary defroster fans with metal blade guards and individual switches. Two (2) located at the front windshield and two (2) in the rear section. A master power switch for all fans shall be provided on the drivers switch panel.	_____
10.122	Sun visors	Two (2) swivel visors. One positioned each in the front of the driver and officer. These visors swivel to provide coverage of the front door windows.	_____
10.123	Mirrors exterior	a) The cab exterior shall include bus style mirrors, one (1) mounted on the drivers' door and one (1) mounted on the right front cab corner radius below the windshield. Flat and convex mirrors heated and remote controlled located within easy reach of the driver.	_____
		b) Left side mirror head, injection moulded chrome plated ABS plastic that measures approx. 9.50 inches wide X 17.50 inches high and is mounted with a polished die-cast aluminum arm.	_____
		c) Right side mirror, injection moulded chrome plated ABS plastic that measures approx. 9.50 inches wide X 17.50 inches high and is mounted with a 19.00 inch long polished cast aluminum arm. The right-side mirror shall have the convex on top of the mirror and must be clearly visible by the driver.	_____
10.124	Front/Rear heater and air conditioner	Heating/Ventilating/Air Conditioning System (HVAC) The HVAC shall be a high output, fresh air type with multi-speed fan, controlled by the driver. There shall be a HEPA filtration system capable of stripping the outside air of pollen, bacteria, and pollution before they enter the cabin and systematically scrubbing the air inside the cabin to eliminate any trace of these particles air. Outlets shall be provided at dashboard level and in the driver and officer's foot area to ensure occupant comfort when heat is required. Defroster outlets shall be provided to defrost entire windshield and the drivers and officers side windows. Coolant flow (preferred) in the heater circuit shall be passively controlled by a dash mounted heat control device. The system/s shall meet or exceed the BTU's required to heat/cool the cab for the temperatures common to the City of Winnipeg, i.e., 35°C, to -40°C. When the apparatus is placed In pump gear the air conditioning system shall automatically switch into recirculation mode so as not to pull in contaminated outside air.	_____
10.125	Rear heat/air conditioner/Aux. coolant heater	Rear heater and air conditioner shall meet or exceed the BTU requirements necessary to ensure floor area heating and cooling the rear of the cab to ensure occupant comfort and shall be separately	_____

		controlled from the front of the cab. ***Note: The Heating/Ventilation/Air conditioning systems (front and rear) shall dehumidify the air in the defrost mode to assist in preventing the fogging or frosting of the windows due to excess humidity from wet firefighter clothing.***	
10.126	Dome lights	LED four (4) lights, two (2) in the front and two (2) in the rear portion of the cab to fully illuminate the cab interior. Dome lights shall be combination type with clear and red lenses. All lights shall be operated by door switches.	_____
10.127	Instrumentation	Full instrumentation on a removable or flip down panel, or pullout gauges.	_____
10.128	Metric instrumentation	To include, but not limited to: a) Speedometer/odometer: metric b) Tachometer. c) Oil pressure gauge. d) Coolant temperature gauge. e) Transmission oil temperature gauge or warning light. f) Low oil pressure/high water temperature warning lights(s) g) Voltmeter h) Fuel level gauge i) Air reservoir pressure gauge(s). j) Engine hour meter. k) Air cleaner restriction indicator gauge. l) Engine oil filter bypass indicator lights. m) Fuel filter bypass indicator lights. n) Transmission filter bypass indicator lights if recommended.	_____
10.129	Ignition switch	Keyless type.	_____
10.130	Interior door panels	Heavy-duty construction with stainless steel inside door panels. Doors shall have a led light that flashes when the door is open.	_____
10.131	Warning system	OEM engine warning system.	_____
10.132	Radio	AM/FM stereo, mounted inside of dash, controlled by the driver.	_____
10.133	Mobile radio	12V fused power & ground prewired. **(To be prewired during manufacture as determined at pre-production meeting).**	_____
10.134	Lap top computer provision	12V power & ground at center dash area (purchaser to supply support bracket) **(To be prewired during manufacture as determined at pre-production meeting).**	_____
	Communication	Four (4) GPS and Radio antenna's mounted on cab	_____

	antenna's	roof and pre-wired. **(To be prewired during manufacture as determined at pre-production meeting).**	
10.135	USB charging ports	Two (2) located at center dash area.	_____
10.136	Switch Activated Vehicle Immobilizer	Unmarked dash mounted switch so when activated it will disable the vehicle from moving. Shall be integrated with the multiplex system to allow for automatic anti-theft engagement with park brake application. The anti-theft shall automatically dis-engage when the apparatus is placed in pump gear.	_____
10.137	Cab door hardware	Hardware to be heavy duty in design and operator glove friendly.	_____

FIRE PUMP AND ASSOCIATED EQUIPMENT

10.138	Hale fire pump	Hale QMAX XS 2200gpm, mid-ship factory mounted, single stage centrifugal fire pump with a rated capacity of 2250 (US) GPM @ 150 psi. Mechanical seal pumps only.	_____
10.139	Pump overheat protection system	Thermal relief valve with automatic reset.	_____
10.140	Pump Anodes	Three (3) pump magnesium anodes, to protect pump by reducing galvanic corrosion. Two (2) suction and 1-discharge anodes.	_____
10.141	Relief valve system	Relief valve system shall provide discharge and suction protection (against excess pressures), control located on pump operator's panel. **Note: Inlet relief valve to be plumbed to drain when pump not in use, c/w manual drain if required.**	_____
10.142	Priming pump	Hale electric primer.	_____
10.143	Piping	All intake and discharge piping shall be sized to meet or exceed the flow capacity corresponding to the intake and outlet discharge size, taking into account flow loss (resistance) due to valves, elbows, port openings, etc. All pipes shall be corrosion resistant, schedule 40, stainless steel, butt welded continuous length pipes.	_____
10.144	Valves	All intake and discharge valves shall be sized to meet or exceed the flow capacity corresponding to the intake or discharge size. 4 in. Valves may be either gate or piston type with 30° elbow, c/w pressure relief valve. Valves 3 in. (76 mm) or larger shall be slow opening type, meeting NFPA requirements. All valves shall be Akron electric ball valves. All valves shall be controlled from the pump operator's panel. Valve sizes at various locations are specified herein.	_____

10.145 Suction relief control valve

Shall be mechanical. _____

10.146 Pump intakes

Intakes shall be provided as follows: _____

10.147 _____

INTAKE LOCATION	QTY	SIZE	THREAD TYPE	GATED
Left Side Pump Panel	1	6 in. (152 mm)	National Standard (Male)	Yes
Right Side Pump Panel	1	6 in. (152 mm)	National Standard (Male)	Yes
Tank-to-Pump Line	1	3 in. (76 mm)	N/A	Yes

10.148 The 6-inch (152mm) intakes

The 6 in. (152 mm) intakes shall be located to provide sufficient clearance for hard suction lines. Both intakes shall be equipped with a Hale Master Intake Valve (MIV) or equivalent, removable strainers and 6 in. to 4 in. storz reducer and suction intake drain. _____

Note: Storz cap shall be attached to all storz inlets and outlets with vinyl coated, stainless steel cables or an approved alternative.

10.149 Tank-to-pump line

The tank-to-pump line shall be insulated from the water tank to the pump enclosure. A flexible or Victaulic coupling in the line shall prevent transmission of pump vibrations to the tank. _____

(Design Engineering) Victaulic coupling- A development in which a groove is cut around each end of pipe instead of the usual threads; two ends of pipe are then lined up and a rubber ring is fitted around the joint; two semicircular bands, forming a sleeve, are placed around the ring and are drawn together with two bolts, which have a ridge on both edges to fit into the groove of the pipe; as the bolts are tightened, the rubber ring is compressed, making a watertight joint ,while the ridges fitting in the grooves make it strong mechanically.

10.150 External tank fill intake the top

Intake shall be provided as follows: to fill tank from the top. _____

10.151 _____

INTAKE LOCATION	QTY	SIZE	THREAD TYPE	GATED
Left Side Pump Panel	1	2 ½ in. (64 mm)	WCT (Female)	Yes
Rear Waterway Intake	1	4” in.	Storz	Yes

10.152 Intake plumbing

The intake shall be plumbed into the pump-to-tank fill line such that the tank can be filled from an external source without flooding the pump. The valve for the intake line shall be a manually controlled Akron ball valve with the control handle for the valve located at the pump panel adjacent to the intake. The intake shall be labelled “tank fill” and shall be equipped with a cap with a vinyl coated, stainless steel cable or an approved alternative. _____

10.153 Pump discharge outlets

Discharge outlets shall be provided as follows: _____

10.154 _____

DISCHARGE OUTLET LOCATION	QTY	SIZE	THREAD TYPE	GATED
Right Side Pump Panel	1	4 in.	Storz	Yes
Right Side Pump Panel	1	2½ in	WCT (Male)	Yes
Left Side Pump Panel	1	2 ½ in	WCT (Male)	Yes
Left Side Pump Panel	1	2 ½ in.	WCT (Male)	Yes
Left side Pump Panel (Water Way)	1	4’	Internal	Yes

10.155 Discharge piping

The discharge piping shall be sized to achieve rated flow capacity of outlet. _____

10.156 Discharge valves

The valves for the discharge outlets sized to achieve rated flow capacity of outlet. The 4” discharge shall be Akron Model # 8840 and manual hand wheel. The 2 ½” discharge valves shall have a “T” handle valve design _____

10.157 Drain valves

Innovative Control 1/4 turn valve with "T" handle and label. Individual or ganged manual ball valve, located in the lowest section of all discharge and intake piping that is not equipped with automatic drains and in the pump to completely drain the entire system. Drain valves shall be ¾ in. (19 mm) diameter. The controls for all manual drains valves shall be located near the drain valve outlet and shall be appropriately labelled. _____

10.158 Pump compartment

The pump compartment shall be designed to be as small as possible while able to achieve installation of all the specified components. Fully enclosed on all sides including the bottom with hinged door for access to pump. The bottom portion of the enclosure shall be a removable, bolt-on, minimum 3/16 in. (5 mm) aluminum pan constructed with a 2 piece loose fitted aluminum panel. All discharge, intake and drain valves in the pump area shall be located inside the pump compartment. The pump compartment shall be closed off on all four sides to prevent excessive heat loss. _____

10.159 Pump panels

The right and left side pump panels shall be minimum 14ga. stainless steel or aluminium, _____

		designed to permit easy removal without disassembly of any pumps, gauges, controls, inlets, outlets, drains, lighting or electrical componentry. Trim plates, located behind the main pump panels, shall be used to provide a well-sealed pump panel and a clean appearance. The trim plates shall be easily removed when the main pump panel is removed. Gasket Material around all Discharges, Intakes and Handle Slots on Pump Panel to hold in heat of Module Plumbing.	
10.160	Access panel	A large access panel to the pump compartment shall be provided. The panel shall be easily removable and permit sufficient access to pump and valving for repairs. There shall be a bolt on removable panel to allow for easy removal of the MIV valves.	_____
10.161	Pump compartment heater	Two (2) 35,000 BTU coolant heaters, suitable to prevent freezing of the pump and plumbing. The heaters shall be located to be protected from damage and water spray. The heater shall be equipped with an on/off switch, located for convenient operation on the pump operator's panel. The pump house heaters shall come on automatically depending out outside temperature.	_____
	PUMP DRIVE		
10.162	Pump drive	The pump shall be driven via a split shaft main drive with a single speed transfer case with 4th gear lockup solenoid mounted in pump house. Separate power for the pressure governor and 4th gear lock up solenoid.	_____
10.163	Shifting mechanism	Shifting mechanism shall be Hale Electric powered shift mechanism bolted to the transfer case.	_____
10.164	Shift control	Hale shift control located in the cab for operation from the driver's position. The shift control lever shall have a positive locking feature or protective cover to prevent accidental disengagement.	_____
10.165	Warning lights	Two warning lights at the shift control and one light at the pump operator's panel, in accordance with N.F.P.A. requirements, shall indicate when the transfer case shift to pump operation has been completed and the transmission is in pump gear.	_____
	PUMP OPERATOR'S PANEL		
10.166	Location	Driver side external pump panel. The LED strip lighting shall illuminate the entire pump panel without causing glare for the operator.	_____

10.167	Pump operator's panel (left)	The pump operator's panel shall contain the following controls, gauges, warning lights, etc. a) FRC In Control TGA-400 Pressure Governor. b) Master Intake and Discharge Gauges. c) Priming control. Hale electric priming control. d) Heater controls for pump compartment heater. e) Threaded intake and discharge ports for NFPA 1911 pump tests.	_____
10.168	Panel plate	Stainless steel or aluminum plate with slots for the valve control handles. The slots shall be fully sealed using flexible rubber boots.	_____
10.169	Name plates	Color coded, metal nameplates, block lettered in English, for all controls, gauges, warning lights, etc.	_____
10.170	NFPA 1901 test plate	Located on or immediately above the pump operator's panel. The plate shall show discharge flows and pressures in SI units (L/min, kpa).	_____
10.171	Passenger side pump panel	The pump panel shall be an external pump panel. The LED strip lighting shall illuminate the entire pump panel without causing glare for the operator.	_____
10.172	Diagram (control panel)	Bidders shall provide a diagram illustrating the control panel layout.	_____
	APPARATUS BODY	**Note: Compartment configurations to be finalized at Pre-production meeting. All tools shall be mounted for proper weight distribution.**	
10.173	Type	***a)*** Aerial style, heavy-duty body, aluminum or 304L stainless. If submitting an aluminium.	_____
		b) Note: Aluminum or 304L stainless bodies on steel sub frame shall not be acceptable.	_____
		c) The body compartments doors shall be roll up doors with pull down straps. A combination of roll up doors and swing out doors is acceptable.	_____
10.174	Rub rail	Extruded aluminum rub rail, bolted in place and located along the lower edge of the body, both sides nonconductive.	_____
10.175	Compartment floors	All compartment floors shall be a minimum 3/16 in. (5mm), with continuous welds.	_____
10.176	Insulating material	Insulating material to prevent galvanic corrosion shall be provided at all possible areas of contact between aluminum and steel. The insulation material used shall be nonporous.	_____

10.177	Drip mouldings	Located above all compartment door openings.	_____
10.178	Storage compartments	Located along each side and rear of the body and the storage compartments. Shall provide a combined interior volume.	_____
10.179	Compartment design	All compartments shall have vents for ventilation. All compartments shall have sweep-out style compartments. Bottom shelves to have provisions for water drainage. All compartments shall have dry-floor matts.	_____
10.180	Compartment doors	Roll-up doors lock/lifting bars c/w door Ajar warning circuit c/w magnetic sensor located near top of door. The door sensor shall have a mounting bracket that is bolted to the compartment. (Sensors on door handles not acceptable) All compartment doors shall have anodized aluminum slats. The roll up door drum shall have a drip tray.	_____
10.181	Warning circuit	"Door ajar" warning circuit to indicate an open storage compartment door with a nominal 2 in. (51 mm) diameter flashing red warning light located in the cab and shielded to protect from visibility from oncoming traffic.	_____
10.182	Compartment lights	LED lighting in each compartment to the right and left of opening, full length of opening. The opening of each compartment door shall activate the lights in each compartment.	_____
10.183	Shelves	All compartment shelves shall be 3/16 in. (5 mm) aluminum and shall cover the full width of the compartment. Shelves shall be lined with an Interlocking matting, dry floor matting.	_____
10.184	Slide-out trays	All slide-out trays shall be 3/16 in. (5 mm) aluminum with heavy-duty steel sliders, with ball bearing rollers capable of supporting a capacity of 500 lbs. The slide-out trays shall have paddle-handle type latches with dual point locks or dual T-handle type latches. The trays shall lock in the open and closed positions. All slide out trays shall be marked with chevron pattern decal.	_____

Compartment Descriptions

10.185	Left side, front compartment (L1)	This compartment shall hold fire hose adapters, tools, appliances, nozzles etc. These items shall be mounted with PAC mounts on tracking	_____
10.186	Left side, center compartment (L2)	Clean Cab compartment. This compartment shall have a pull-out tray with a vertical divider in the middle. One side of the divider shall have two push in SCBA mounts, one side will have storage for bunker pants and a hook for a bunker jacket and two helmet hooks	_____

10.187	Left side, above the tandems (L3)	There shall be enough storage for the following equipment: Prosser pump, salvage master, ropes, extension cords. LED scene lights.	_____
	Left side, above the tandems (L4)	There shall be enough storage for the following equipment: Prosser pump, salvage master, ropes, extension cords. LED scene lights	_____
	Left side compartment (L5)	This compartment shall store One (1) battery Stihl K12, One (1) battery Stihl chainsaw and spare K12 blades	_____
10.188	Right side, front compartment (R1)	This compartment shall hold fire hose adapters, tools, appliances, nozzles etc. These items shall be mounted with PAC mounts on tracking	_____
10.189	Right side, center compartment (R2)	Clean Cab compartment. This compartment shall have a pull-out tray with a vertical divider in the middle. One side of the divider shall have two push in SCBA mounts, one side will have storage for bunker pants and a hook for a bunker jacket and two helmet hooks	_____
10.190	Right side, rear compartment (R3)	Fire extinguishers, water can	_____
	Right side compartment (R4)	Honda gas power generator with LED light	_____
	Right side compartment (R5)	One (1) 50ft 4” hose pony length, hose clamp, 4” water manifold with a relief valve	_____
10.191	Rear compartment	Ground ladder and pike pole storage.	_____

Equipment Compartments/Ladders/ Back Board/Scoop

10.192	Ladder storage	Center mounted ladder storage to accommodate ground ladder and pike pole storage	_____
10.193	Ladders	Ladder storage shall be able to accommodate: One (1)35 ft. 3-section extension ladder, Duo-Safety. One (1)28 ft. (4.3 m) extension ladder Duo-Safety One (1) 24ft. (4.3m) two section extension ladder One (1) 20ft roof ladder with folding hooks One (1) 16ft roof ladder with folding hooks One (1) 10 ft. (3.0 m) folding (attic) ladder, Duo-Safety 585-A Series.	_____
10.194	Pike Poles	There shall be storage for six (6) pike poles in the ladder storage compartment. Three (3) 6ft	_____

		Two (2) 8ft Two (2) 12ft	
10.195	Equipment compartments	The bidder shall design all equipment compartments to accommodate the equipment specified in FIRE FIGHTING EQUIPMENT (10.237) and Appendix #1. The bidder shall be responsible for it location, securing, and weight distributions. All tool brackets shall be PAC mount tool mounting hardware included within the compartment construction as per attached tool list. Fire Extinguishers stored horizontally in compartments.	_____
10.196	SCBA storage	Four (4) SCBA high-pressure (45) minutes cylinder storage pods within rear wheel well fenders on the officer's side of the apparatus. The pods shall be equipped with weather tight doors c/w slam locks.	_____
10.197	Rear step	NFPA compliant and the step height shall be 22 in. (559 mm) above ground level. Step surfaces shall be non-slip and drain opening shall be provided to facilitate cleaning of the non-slip surfaces.	_____
10.198	Hose bed access steps	Located to allow personnel to climb from the rear step onto the hose bed. Step surfaces shall be aluminum anti-slip grip strut.	_____
10.199	Handrails	NFPA handrails, located to assist in access to hose bed.	_____
10.200	Wheel wells	Equipped with full liners 5052-H321 aluminum or composite materials wheel fender and lined with Full Metal Jacket protective spray on liner.	_____
10.201	Checker plate	The front corners and the area immediately above the wheel wells shall be covered with polished aluminum or stainless-steel checker plate.	_____
	HOSE BED		
10.202	Hose bed loading (floor) height	Shall not exceed 72 in. above ground level.	_____
10.203	Hose bed bottom	The hose bed shall have a flat bottom of removable vinyl or aluminum slats and a smooth interior free of any projections such as bolts, brackets, etc., which may damage the fire hose.	_____
		Space for 1000 ft. of 4 in. (102 mm) high volume rubber covered fire hose.***Note: Fire hose shall be supplied with the apparatus*****.**	_____
10.204	4" Hose bed cover	Heavy duty anti-slip aluminum clam shell hose bed cover, with locking mechanism.	_____

Aerial Ladder

Aerial Ladder Design	Aluminium or steel construction shall be considered. The aerial ladder shall be min three-fly design with a minimum 100ft of vertical reach. Must meet all NFPA 1901 specifications	_____
Aerial Controls	Left side console, located at the turntable	_____
Aerial Control System	The Aerial control system shall be a fully electronic controlled system with an LCD display and multiplexing	_____
Aerial Waterway	The aerial water way shall be capable of being supplied by the midship pump or an external water source. 5" rear water way inlet with a 5"-4" storz gate valve for rear mounted aerials with inlet cap and pressure gauge. Must have a pressure relief valve	_____
Aerial Waterway Drain	Waterway drain located on the same side as the water way inlet.	_____
Monitor	Akron Stream Master 2, 1577 Saber Master Nozzle, mounted on the water way pipe.	_____
Aerial Intercom	FRC ACT 2-way aerial intercom	_____
Aerial outriggers	The outriggers shall have short jacking capability	_____
Technical Rescue Tie Off Points	There shall be NFPA rated life safety tie-off points along the aerial frame, ladder and tip.	_____
Cradle Interlock System	There shall be a cradle interlock system to prevent the lifting of the aerial ladder without deploying the outriggers and prevent the lifting of the outriggers is the Aerial is deployed	_____
Aerial Hydraulic System	The Aerial hydraulic system shall meet NFPA 1901 requirements. O-ring seals must be used where ever possible to prevent leaking. Each aerial will be evaluated as to the region and climate where it will be used to determine the optimum viscosity and proper oil grade. Ball valves will be provided in the hydraulic suction lines to permit component servicing without draining the oil reservoir. The system hydraulic pressure will be displayed on the turntable display. The hydraulic system will be additionally protected from excessive pressure by a secondary pressure relief valve set at 3,500 psi. In the event the main hydraulic pump compensator malfunctions, the secondary relief will prevent system damage.	_____
Emergency Pump System	The hydraulic system will be designed with an auxiliary power unit meeting the guidelines of the current NFPA 1901 standard.The aerial will be	_____

		equipped with an emergency hydraulic pump, electrically driven from the truck batteries. The pump will be capable of running for 30 minutes for limited aerial functions to stow the unit in case of a main pump or truck system failure. A momentary switch will be located at the stabilizer and aerial control locations to activate the emergency pump.	
	Aerial Man saver Turntable bar	The aerial turn table shall be equipped with a man saver turn table bar. The following tools will be provided for retorquing of all specified bolts as recommended by the manufacturer: Torque Wrench	_____ _____
	Aerial Service Tools	All Required Extensions, Sockets and Adapters 4-to-1 Multiplier.	_____

ELECTRICAL SYSTEMS, GENERAL

10.205	Electrical	The complete Aerial Ladder Fire Apparatus shall be equipped with a multiplex electrical system. Vmux or equivalent multiplex systems shall be accepted. All electrical wiring harness shall be encased in pre-engineered weatherproof loom. All harness connections shall be weather tight connections. Each circuit shall be colour coded and/or marked the entire length. The marking shall be easy to read. Individual wires shall be multi-strand copper with cross linked polyethylene insulation. Volts drop in any electrical wiring circuit shall not exceed 0.5 volts at highest operating temperature within normal working range.	_____
10.206	Wiring	All wiring shall be in pre-engineered harnesses with weatherproof, guided pin-snap-together connectors. Each circuit shall be colour coded and marked the entire length of the wire with easily read numbers and/or letters for identification.	_____
10.207	Connectors	Where crimp-on type electrical connectors are necessary, the connectors shall be fastened to the wiring, pull tested to 40 lbs., then sealed using heat shrink tubing.	_____
10.208	Solder	Any soldered connections shall be performed using flux core solder, then sealed using heat shrink tubing. Acid and/or acid core solder shall not be used.	_____
10.209	Electrical standard	All wiring shall be properly secured and routed. All holes required for routing shall be grommeted and sealed as required.	_____

10.210	Circuit breakers	Circuit breakers shall be used in lieu of fuses for all circuits requiring overload protection (reset type circuit breakers preferred).All circuit breakers and relays shall be located behind quick removable panels, located to be readily accessible for servicing. All circuit breakers and relays shall be labelled to indicate their function. Circuit breaker box cleared and labelled.	_____
10.211	Electrical distribution panels	The electrical distribution panels for the apparatus body shall be located in an easily accessible location for the maintenance people to access. The panels shall have a removable weather tight front cover. The dedicated ground cable shall have a ground terminal in these panels with sufficient connection point available for all circuits.	_____
10.212	360 Degree Camera Package	Camera system Safety Vision Total View 360 degree bird's eye view or equivalent. Includes 4 cameras located front, rear, left and right, and wireless remote control. Preference is to use multiplex screen with the camera system. Note: cameras must be located as high as possible with side cameras centrally located.	_____
10.213	Collision Avoidance system	Collision Avoidance Systems model CAS-4HW rear obstacle detection and proximity system. Includes 4 sensors at rear of vehicle and speaker in cab.	_____
10.214	110v Power Supply	The apparatus shall be equipped with a heavy duty inverter and 110v charging outlets. There shall be two (2) 110v outlets in the rear of the cab and two (2) in the rear compartments, one on each side of the apparatus. This shall be powered off of shore power and battery power	_____
10.215	Head Set communications	Headset communications Fire Com headset system located in the cab. Wired or wireless is acceptable.	_____
10.216	Power Distribution	Each compartment shall have a blue sea power and ground distribution block to all for future accessory add-ons. There shall be a Blue Sea 12V power distribution module model 5032. Location: behind officer's seat.	_____
10.217	12v power and ground wiring for accessories	There shall be a minimum of two 12v fused direct battery powered terminals in the fuse panel. There shall be a minimum of two shore powered 12v terminals and four fused ground terminals in the fuse panel.	_____

VEHICLE LIGHTING AND WARNING EQUIPMENT

10.218	All lighting to conform to: C.M.V.S.S. Manitoba Highway Traffic Act.		_____

City of Winnipeg Lighting Visibility Standard
http://winnipeg.ca/matmgt/pdfs/PublicWorksEquipLightingVisibility.pdf.

10.219	Lighting	Supplier installed **high count** LED lighting.	_____
10.220	LED optical warning system	The apparatus shall have an LED optical warning system that meets and exceeds NFPA 1901.	_____
10.221	Light bar (LED)	Two (2) Whelen Mini Freedom LED side facing cab light bars, Model # FT8RRRRF. 24" with MKEZ7 mounts. All red LED's with clear lens.	_____
10.222	LED lights	FireTech 72" 12V brow light with integrated marker lights and black housing. Includes switch accessible to driver. Replaces front brow marker lights.	_____
10.223	Warning Lights	a) Warning light Whelen super LED beacon model L31H with red domes. Location above L2/R2 compartments, offset reward to supplement upper rear warnings.	_____
		b) Warning light Whelen super LED beacon model L31H with red domes. Located rear upper body on aerial style brackets.	_____
		c) Warning light Whelen MR6 series linear super LED (PR) red. Location: One (1) each side of cab centered over wheel well.	_____
		d) Warning light Whelen M6R series linear super LED (PR) red. Location: One (1) each side in front quad inboard of NFPA warning light.	_____
		e) Hazard (door ajar) Light 2" LED. Location Center overhead.	_____
10.224	Warning light Package	Whelen M6 Super LED lower level warning light package. Includes (8) red M6R LED light heads and (2) red M2R LED lights. Locate side facing lights: at forward most position, centered in the rear wheel well, and side facing at rear of body in rub rail if equipped.	_____
10.225	Scene lights	a) Whelen Pioneer plus LED model PFP@ 12V brow mount, powder coated black, includes switch in cab. Driver and officer lights switched separately. Location: One (1) driver and officer side above cab door	_____
		b) Whelen pioneer plus LED model PFP@ 12v with PBAPEDD pedestal mount. Includes switch in cab, switch separately. Location One (1) on each side or aerial body.	_____

		c) Whelen LED model PFBP12C (PR) deck light. Location: One (1) on each side over rear ladder tunnel	_____
		d) Whelen PFBP12C LED hose bed light. Location: One center front of hose bed. Switch in cab, labeled as hose bed light.	_____
10.226	Aerial lighting	Outrigger warning lights, Truck-Lite model 91R	
		a) Whelen M6 super LED warning lights (4). Located on the Aerial ladder near the tip.	_____
		b) Whelen M6 super LED, Two (2) one located on each side of the tip of the aerial ladder	_____
		c) Whelen M6 super LED, Two (2) one located on either side of the aerial ladder midway between the base and the tip	_____
10.227	Load management system	An automatic electrical load management system to be provided.	_____
10.228	LED Head Lights	Fire Tech 4x6 LED head lights. FT-4X6-4KIT.	_____
10.229	Tail lights	Whelen C6 series LED vertical mount tail lights. Includes LED stop/tail, arrow turn and back-up lights with vertical chrome ABS 4 housing and weatherproof connectors.	_____
10.230	Turn signals	Weldon auxiliary turn signal model 9186-8580 LED (PR). Location: (1) each side in body wheel well offset forward. As per NFPA 1901 (current edition).	_____
10.231	Wig wags	Alternately flashing headlights operating on high beam only.	_____
10.232	Siren	Federal e-Q2B siren with two (2) speakers with mounted in the front bumper spaced as wide apart as possible. Federal Rumbler secondary siren. Includes amp, timer, and two speakers mounted under vehicle with heavy fabricated brackets. Requires control switch. The siren speakers must be insulated to prevent excessive noise in the cab	_____
10.233	Warning lights and siren controllers	The warning light controller shall be mounted with the arrow stick controller mounted to the right of the driver for primary operation by the driver from the normal seated position. The officer's position shall be equipped with a siren tone control switch. This switch when activated shall only be able to change siren tones of siren wail, yelp and electronic air horn. It will not select stand by or on/off selection. The switch position shall be to the left of the officer. Officer to operate Siren to be a Federal PA 4000.	_____

10.234	Air horns	Two (2) heavy duty air horns mounted in the front bumper. The air horns shall be operable from the driver's position via the steering wheel horn activator and a centre mounted chain.	_____
10.235	Back-up alarms	Electronic, self-adjusting (87-112 dB) type.	_____
10.236	Spotlights	LED heavy-duty hand held spotlight with momentary switch, dash mounted in the officer area.	_____

FIRE FIGHTING EQUIPMENT

10.237 The following equipment shall be supplied as part of the apparatus and shall be mounted where applicable. **All firefighting equipment shall be mounted with proper weight distribution in mind.**

a) Eight (8) 100mm X 33M Angus Hi-Volume Storz Hose. _____

b) Two (2) 100mm X 15M Angus Hi-Volume Storz Hose. _____

c) One (1) Set of Wheel Chocks (mounted). _____

PAINT COLOUR The apparatus shall be painted as follows:

10.238	Cab	Painted two tone colour scheme with the bottom half Red to match SIKKENS Brand Code 911662 (Red) and the top half Black to match SIKKENS Brand Code 910788 (Black), using a polyurethane enamel paint. (DuPont Imron or Sikkons paint).	_____
10.239	Apparatus body	Painted red to match the bottom half of the cab.	_____
10.240	Chrome Accents	All body components that are normally chrome shall be powered coated or painted black, including the front bumper.	_____
10.241	Apparatus body compartments, interior	Painted with light grey, scratch resistant, automotive grade paint.	_____
10.242	Chassis Frame, Axles, & Undercarriage	Painted using smooth black corrosion resistant paint. Paint Application - All paint shall be applied in accordance with the paint manufacturer's recommendations. All surfaces shall be properly cleaned, prepared and primed with a suitable primer prior to painting. Painting shall have been performed in an atmosphere-controlled spray booth. The cab and Aerial Ladder body shall have been painted with all trim and hardware removed. All mounting holes shall have been drilled and deburred and nutserts shall be installed in blind holes prior to painting. Any caulking of body seams shall be performed prior to painting. Caulking material shall be of the highest industry standards.	_____
10.243	Paint application	All paint shall be applied in accordance with the paint manufacturer's recommendations. All surfaces shall be properly cleaned, prepared and primed with a suitable primer prior to painting. Painting shall have been performed in an atmosphere-controlled	_____

		spray booth. The cab and apparatus body shall have been painted with all trim and hardware removed. All mounting holes shall have been drilled and deburred and nutserts shall be installed in blind holes prior to painting. Any caulking of body seams shall be performed prior to painting. Caulking material shall be of the highest Industry standards.	
10.244	Reflective stripping	All reflective striping shall be 3M diamond grade striping where ever possible. The reflective striping shall be red on white and/or aluminum background and white on red background. The side striping shall be stylized Z pattern front to back of vehicle. The striping shall be composed of 5 bands. The band width shall be 10". Example: white stripe on red background. From top down shall be: one 1" white stripe, one 1' red stripe, one 6" white stripe, one 1" red stripe, one 1" white stripe. The stripes shall not be spaced apart to reveal background. The stripe shall be edge sealed as per 3M guidelines. Incorporated within the cab reflective stripe shall be stylized WFD. Cab drivers and officer's door shall be location of Winnipeg Fire Department crest (size 12 ¾" x 12" wide) crest shall be within reflective stripe. Were diamond grade reflective striping is difficult to apply; series 680 reflective film shall be allowable Example: on roll up door slats. The reflective striping shall at all times meet and/or exceed NFPA 1901 as the standard guideline. The reflective striping on the cab rear entrance doors shall incorporate the Fire Department's stylized WFD' logo. (A diagram of the logo shall be provided to the Contractor by the City).	_____ _____
	NOISE LEVEL		
10.245	Sound level	The sound level in the cab at all seated positions shall not exceed 80 dB(A), measured in accordance with SAE J336, with the apparatus traveling at any speed up to governed speed with the sirens off and doors and windows closed. **Bidder to provide recommendation for extra sound insulation. State dba.**	_____
10.246	**TESTING & CERTIFICATION-**	Testing- The completed vehicle shall be tested and labelled to (NFPA) National Fire Protection Association Standard latest revisions by an independent third-party certification organization.	_____
10.247	Third Party Organization-	The third-party organization accredited for testing systems on fire vehicle in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.	_____
10.248	Certification-	The certification organization shall not be owned or controlled by manufacturers or vendors of the	_____

		vehicle being tested. Manufacturer's certification is not acceptable. (No exceptions)	
10.249	Labelling-	A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab.	_____
10.250	Safety Labelling	A warning label shall be provided in the cab within sight of the driver stating the seating capacity of the cab/crew cab.	_____
10.251	Dimension Plate-	A warning label shall be provided in the cab within sight of the driver stating the following vehicle dimensions:	_____
		•Height and length in standard and metric measurements.	_____
		•Gross vehicle weight rating in pounds and kilograms.	_____
10.252	Voltage Testing	The wiring and permanently connected devices and equipment shall be subject to a dielectric voltage withstand test of 900 volts for one minute. The testing shall be performed after all body work has been completed. The electric polarity of all permanently wired equipment, cord reels, and receptacles shall be tested to verify that wiring connections have been properly made.	_____
10.253	Fluid Capacity and Type Label	A permanent label shall be provided and shall state the type and quantity of the following fluids used in the vehicle: • Engine Oil • Engine Coolant • Chassis Transmission Fluid • Drive Axle Fluid • Pump Gear Case • Primer Lubricant (If Applicable)	_____
10.254	Vehicle Data Recorder	Meeting the requirements of NFPA 1901-2009, Vehicle Data Recorder is required. Recorded to Include the following Data: • Vehicle Speed • Acceleration • Deceleration • Engine Speed • Engine Throttle Position • ABS Event • Seat Occupied Status • Seat Belt Status • Master Optical Warning Switch • Park Brake • Service Brake • Time • Date • Engine Hours	_____

10.255	Inputs	Five (5) seat position inputs for occupied and belts buckled. Additional six (6) seat expansion module available. Easily interfaces with V-MUX™ or other multiplexing systems. Data is extracted by a standard, mini USB cable	_____
10.256	Occupant restraint indicator	Occupant Restraints designed to alert driver and officer, this module will indicate where restraints of occupied seats are properly fastened keeping personnel safe. The indicator shall be low profile compact size. Support commercial and custom cab seating layouts up to 12 seats. A dimming feature adjusts indicator intensity to synchronize with dash lights and have a built-in audible alarm.	_____
10.257	Visual Tire Pressure Monitoring	There shall be a visual six (6) wheel tire pressure system supplied that monitors all of the tires on the vehicle. An LED valve cap shall be attached to the tires valve-stem that contains a Pressure Sensor to alert the operators of a developing tire problem	_____
10.258	Transportation Road Safety Kit	Fire Extinguisher One (1) 2.5 lb. ABC vehicle type fire extinguisher with mounting bracket.	_____
		First Aid Kit- One (1) standard First Aid Kit shall be provided.	_____
		Warning Flares- One (1) set of three (3) dual faced triangular warning flares to meet the Department of Transportation's Motor Vehicle Safety Standards	_____

DRAWINGS

10.259	Two (2) sets of three (3) view drawings showing complete unit including cab/chassis, body, compartments, tool locations, etc.	Bidders shall include drawings, within 72 hours of the request of the Contract Administrator.	_____

11.0 WARRANTY

11.1 All warranty information be detailed and includes all exclusions. The successful bidder shall provide all published warranty information upon delivery of the equipment. Contractor shall State: all warranty information _____

BODY WARRANTY

11.2	Structural	**State:**	_____
11.3	Body Vehicle basic coverage	**State:**	_____
11.4	Body compartment latches, hinges and shelving	**State:**	_____

11.5	Components e.g. Pumps	**State:**	_____
11.6	Electrical	**State:**	_____
11.7	Body Lighting	**State:**	_____
11.8	Body Paint	**State:**	_____

CAB & CHASSIS WARRANTY

11.9	Basic Vehicle - Chassis	**State:**	_____
11.10	Electrical	**State:**	_____
11.11	LED Lighting	**State:**	_____
11.12	Batteries	**State:**	_____
11.13	Drivetrain	**State:**	_____
11.14	Cab Structure/Corrosion	**State:**	_____
11.15	Frame & Cross-Members (Structural)	**State:**	_____
11.16	Frame & Cross-Members (Corrosion)	**State:**	_____
11.17	Cab Paint	**State:**	_____
11.18	Engine	**State:**	_____
11.19	Transmission	**State:**	_____
11.20	Axles - Front & Rear	**State:**	_____
11.21	Components	**State:**	_____
11.22	Warranty Literature	All warranty literature and Documentation or “fine print” documentation provided within three (3) Business Days of the request from the Contract Administrator. This warranty documentation will be entered into the City of Winnipeg Fire Department’s Service Data Network to expedite and administrate warranty claims and repairs.	_____

12.0 **DELIVERY**

12.1 Delivery Point: The complete unit shall be serviced, ready for operation and delivered F.O.B. with the freight prepaid, including invoice and N.I.V.S. (if applicable) to the WFMA 185 Tecumseh Street, Winnipeg MB. The Contractor shall be notified by the Contractor Administrator the delivery address prior to issuance of the purchase order _____

12.2 Delivery Time: Equipment shall be delivered between 8:00 am and 2:00 pm on Business Days.
State: Delivery Date. _____

12.3 Delivery Contact: The Contractor shall contact the Contract Administrator prior to delivery of the equipment. _____

12.4 P.D.I: A pre-delivery inspection shall be performed by the Winnipeg Fire Paramedic Service on the Apparatus and equipment. _____

13.0 **MANUALS**

13.1 Manuals supplied under this Contract shall cover the complete equipment including all components thereof; CD or USB flash drive is preferred where available. _____

13.2 The following manuals shall be supplied with the units when delivered:

a) Operator's manual – Two (2) per unit (one operator manual shall be sent to the Winnipeg Fire Paramedic Service Training Academy 2546 McPhillips Street Winnipeg, Manitoba
Office- (204).986.8398
Fax- (204).986.4266 _____

b) Parts and service manuals – One (1) complete set including preventative maintenance schedules. CDs or USB flash drive are preferred. _____

14.0 **PARTS/LABOUR DISCOUNT**

14.1 Bidder to provide City of Winnipeg Parts Discount % Pricing from retail parts pricing. **State: percentage discount** _____%

14.2 Bidder to provide City of Winnipeg Labor Discount % Pricing from Retail shop labor rate. **State: percentage discount** _____%

15.0 **FIRST SERVICE PREVENTATIVE MAINTENANCE KIT**

15.1 In order to assure minimum downtime of the equipment in future service, the Contractor shall provide one (1) complete replacement set of new OEM filters for each unit purchased. The set of required filters shall include (if applicable to the equipment type) air, fuel, oil, cab and hydraulic, or otherwise all known necessary common replacement filters required for the first preventative maintenance servicing. _____

15.2 The Contractor shall provide a list of factory recommended lubricants to be used with the equipment, as well as a complete cross reference guide for all warranty approved lubricants and filters that can be used during preventative maintenance servicing. _____

APPENDIX #1

Listing of Equipment on WFD Engines (The purpose of this appendix is to _____

illustrate what a typical WFD engine carries as a full equipment load. The bidder shall provide drawings of tool locations as best suited by the manufacture. The bidder shall be responsible for the method of securing the equipment and all weight distributions. This list will not match the equipment being purchased in section 10.237 (FIRE FIGHTING EQUIPMENT) and is for compartment configurations only.

Cab:

1 Medeco Key/ Ace Lock Box Key (ea)
1 Panasonic Toughbook Computer
2 Sherlock Map Book
4 Portable Radios w Remote Microphones
1 Fuel Card
2 Quick Fit Sprinkler Tongs
1 Cab Jack Bar
3 Radio Headsets (in office)
1 Garbage Container
1 Seat Belt Cutter
1 CO Detector
2 Hand Sanitizers
1 Emergency Response Guide book
1 Medical Clipboard
1 Fire Alarm Clipboard / CO Detector
1 Tactical Clipboard
1 Inventory Clipboard
1 After the Fire Kit
2 Erik Kits
1 Vehicle Registration

COMPARTMENT

1 O2 Cylinder
1 K.E.D.
1 Frac Pac
1 Trauma Bag

COMPARTMENT

2 Storz to 65 mm Male
1 Storz to 65mm Female
2 65 mm Double Female Adaptors
2 65 mm Double Male Adaptors
1 Rubber Mallet
1 44mm Flake cw Akron 4820 Pistol Grip Nozzle and Reducer
1 High Pressure Kit cw High Pressure Hydrant Key, 1- 3 1/2 " Female to 4 ½ " male, 1- 3 ½ Female to 100mm Storz, 1- 65mm Male to 100 Storz
2 Hydrant Keys
4 Storz keys
2 65 mm Spanner Wrenches
3 Hose Hangers
1 65 mm Akron AssaultFog Nozzle
1 65 mm Akron Smooth bore w Tips 1 ¾", 1 3/8", & 1"
1 Turbojet Foam Nozzle
1 Cellar Nozzle
1 Socket Set
1 Set Road Deflectors (triangles)
1 65 mm Hydrant Gate
1 100mm Storz Manifold to 3- 65 mm Outlets
1 65 mm to 44 mm Gated Wye
1 Command Light Control
1 Deluge Gun Control
1 Spray Bottle R.V. Anti-freeze
2 Scene Tape (rolls)

1 Tool Box cw:Crescent wrench, Needlenose Pliers, Linesman Pliers, Waterpump Pliers, side Cutters,Cable Cutter, Utility Knife, Hacksaw c/w 3 blades, Screwdriver set, Pipe Wrench, BallPeen Hammer, Vise Grip Pliers, adjustable rubber strap wrench

COMPARTMENT

1 Piercing Nozzle
2 Water Back Packs
1 Plug N Dyke (container) & Wedges
1 Medical Bag (collars, blankets, headblocks)

COMPARTMENT

2 Sand Bags & 2 Containers of Sand
1 Sledge Hammer
1 Halligan/ Axe New York Tool
1 Axe
1 Bolt Cutter
1 Kelly Tool
1 20’ Pony Length 100mm w Hyd. Adaptor
1 30’ Pony Length 100mm w Hydrant Adaptor
1 50’ roll 44mm Hose
1 50’ Roll 44mm Hose cw Akron 4820Pistol Grip Nozzle w Reducer
1 24” Pry Bar
1 High Rise Kit

COMPARTMENT

1 Hydrant Kit w: hydrant gate, 1- Storz to 65mm Female Adaptor, 2 Storz Keys, 1-Adjustable Hydrant Key,1-Hydrant Key
1 Retractable Power Supply Box 200’
1 Heavy Gauge Electrical Cord 30’
1 Heavy Guage Electrical cord 50’
2 Sliding Female to 3 Prong Male Electical Adaptors
2 Sliding Male to 3 Prong Female Electrical Adaptors

COMPARTMENT

1 Burn Bundle / OB Kit
1 SAED/ &/ or Life Pak 12 Lead Monitor
1 O2 Therapy Kit
1 Incident Command Board/ Pas Kit
1 Universal Precautions Kit
2 Trauma Bears

COMPARTMENT

1 Foam Tank Filler Hose

COMPARTMENT

1 Hose Clamp 100mm
2 24’ Pry Bars
1 Axe
1 Dry Chemical Extinguisher
1 CO2 Extinguisher
1 Pressurized Water Extinguisher
1 Air Pump (hand)
1 Water Cooler
1 Bag w 3 Mustang Jackets and Set Throwballs
1 Rabbit Tool

COMPARTMENT

4 Tarps
1 Utility Rope (bag)

COMPARTMENT

1 PPV Fan (Battery)
2 Portable Lights w Cord Reels
1 Ground Monitor w 4 Tips
1 Little Giant Ladder
1 D-Handle Pike Pole (short) 4'

WHEEL WELL STORAGE

4 SCBA Air Cylinders

BACKBOARD COMPARTMENT

1 Spine Board w Straps, Head Bed
1 Scoop Stretcher

TOP OF PUMP

2 Corn Brooms
1 30' Extension Ladder
1 14' Roof Ladder
1 6' Pike Pole
1 10' Pike Pole
1 10' Collapsible Attic Ladder
1 4' Straight Lining Bar
2 Squeegees
2 Square Mouth Shovels

HOSE BED

8 100' Lengths of 100mm Hose cw Hydrant Adaptor
8 50' Lengths of 65mm Hose w Water Thief

FRONT BUMPER

1 Trash Line (75') cw Nozzle

CROSS-LAY HOSE BED

2 4 -50' Lengths 44mm Preconnected Hose c/w Nozzle
1 4 -50' Lengths 65mm Preconnected Hose c/w Nozzle

MISCELLANEOUS

Lennox Hacksaw c/w 3 blades.
One (1) set of wheel chocks (mounted).
30 in. bolt cutter.
Two (2) combination Storz wrenches with mount.
Two (2) combination Stroz wrenches loose.
One (1) hose clamp.(manual able to accept 4 inch hose).
One (1) Honda EU2000i Portable Generator.
Two (2) Portable LED Lights c/w Cord Reels.
Four (4) Energizer Hard Case Lanterns. With batteries.
One (1) Bullard T3 truck mount battery charger.
Two (2) (50') extension cord 12/3 (20 amp twist lock plugs).
Two (2) 12" 12/3 adapter (20 amp twist lock female to 15 amp u ground male)
Two (2) 12" 12/3 adaptor (15 amp u ground female to 20 amp twist lock male.
One (1) 1 gallon RotoPax gasoline pack with built in spout.
One (1) 2 gallon RotoPax gasoline pack with built in spout.
One (1) braid on braid 150' utility rope w/ bag.

One (1) Chainsaw Stihl MS 260 c/w Wrench.
One (1) bracket for 3 Oxygen D cylinders.
Two (2) poly bush fire backpacks (folding).
One (1) Halligan Tool.