



CITY OF SAN ANTONIO
Finance Department, Purchasing Division

REQUEST FOR OFFER (“RFO”) NO.: 6100017811

AVIATION AIRCRAFT RESCUE FIREFIGHTING TRUCK

Date Issued: FEBRUARY 12, 2024

RESPONSES MUST BE RECEIVED **NO LATER** THAN:
10:00 AM, CENTRAL TIME, FEBRUARY 16, 2024

Responses may be submitted by any of the following means:

Electronic submission through the Portal

Electronic submission by e-mail

Bid Bond: None Performance Bond: None Payment Bond: None Other: None

See Supplemental Terms & Conditions for information on these requirements.

Affirmative Procurement Initiative: None

DBE / ACDBE Requirements: None

See Instructions for Offerors and Attachments sections for more information on these requirements.

Pre-Submittal Conference: None

Staff Contact Person:

Jody De La Rosa

Procurement Specialist II

Email: jody.delarosa@sanantonio.gov

Phone Number: 210-207-0543

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003 - INSTRUCTIONS FOR OFFERORS

Submission of Offers.

Submission of Offer's. ***Offer(s) maybe submitted through the Portal or by E-mail**

Submission of Electronic Offer's. Submit one offer electronically by the due date provided on the Cover Page. All times stated herein are Central Time. Any offer or modification received after the time and date stated on the Cover Page shall be rejected. All forms in this solicitation which require a signature must have a signature affixed thereto, either by manually signing the document, prior to scanning it and uploading it with your submission, or affixing it electronically.

Submission of Offers by Email. Submit one document by email to the Staff Contact Person, by the due date provided on the Cover Page. All times stated herein are Central Time. Any offer or modification received after the time and date stated on the Cover Page shall be rejected.

Modified Offer. Offer's may be modified provided such modifications are received prior to the time and date set for submission of Offer, and submitted in the same manner as original offer "**electronically**". Electronic offer's, a modified offer will automatically replace a prior offer submission. See below for information on submitting Alternate Offer's.

City shall not be responsible for lost or misdirected offers or modifications.

For electronic offers, Offeror's electronic submission, with accompanying affirmations, constitutes a binding signature for all purposes.

Offerors are cautioned that they are responsible for the security of their log on ID and password, since unauthorized use could result in Offeror's being held liable for the submission.

Certified Vendor Registration Form. If Offeror has not completed the City's Certified Vendor Registration (CVR) Form, Offeror is required to do so prior to the due date for submission of offers. The CVR form may be accessed at <http://www.sanantonio.gov/purchasing/>. Offerors must identify the correct name of the entity that will be providing the goods and/or services under the contract. No nicknames, abbreviations (unless part of the legal title), shortened or short-hand names will be accepted in place of the full, true and correct legal name of the entity.

Alternate Offers. Alternate offers may be allowed at the sole discretion of City.

Electronic Alternate Offers Submitted Through the Portal. All alternate offers are recorded with original offers when submitted electronically.

Catalog Pricing. (This section applies to offers using catalog pricing, unless this is a cooperative purchase.)

The offer will be based on manufacturer's latest dated price list(s). Said price list(s) must denote the manufacturer, latest effective date and price schedule.

Offerors shall be responsible for providing one copy of the manufacturer's catalog for each manufacturer for which an offer is submitted. Offeror shall provide said catalog at the time of submission of its offer. Manufacturers' catalogs may be submitted in any of the following formats: paper copy or CD ROM for offer(s) submitted on paper, or PDF file for offers submitted electronically.

Offerors may submit price lists other than the manufacturer's price list. Said price list(s) must denote the company name, effective date and price schedule. These price lists are subject to approval of the City Finance Department-Purchasing Division.

Specified items identified herein, if any, are for overall offer evaluation and represent the commonly and most used items. Net prices entered for those specified items must reflect the actual price derived from quoted price list less all discounts offered.

Restrictions on Communication.

Offers are prohibited from communicating with: 1) City officials, as defined by §2-62 of the City Code of the City of San Antonio, regarding the RFO or offers from the time the RFO has been released until the contract is posted for consideration as a City Council agenda item during a meeting designated as an "A" session; and 2) City employees from

the time the RFO has been released until the contract is awarded. These restrictions extend to “thank you” letters, phone calls, emails and any contact that results in the direct or indirect discussion of the RFO and/or offer submitted by offeror. Violation of this provision by offeror and/or its agent may lead to disqualification of Offeror’s offer from consideration.

Exceptions to the restrictions on communication with City employees include:

Offerors may ask verbal questions concerning this RFO at the Pre-Submittal Conference.

Offerors may submit written questions, or objections to specifications, concerning this RFO to the Staff Contact Person listed on the Cover Page on or before one calendar days prior to the date offers are due. Questions received after the stated deadline will not be answered. Questions submitted and the City’s responses will be posted with this solicitation. All questions shall be sent by e-mail or through the portal.

Offerors may provide responses to questions asked of them by the Staff Contact Person after responses are received. The Staff Contact Person may request clarification to assist in evaluating the Offeror’s response. The information provided is not intended to change the offer response in any fashion. Such additional information must be provided within two business days from City’s request.

Offerors and/or their agents are encouraged to contact the Small Business Office of the International and Economic Development Department for assistance or clarification with issues specifically related to the City’s Small Business Economic Development Advocacy (SBEDA) Program policy and/or completion of the SBEDA form (s), if any. The point of contact is identified on the Cover Page. Contacting the Small Business Office regarding this RFO after the due date is not permitted. If this solicitation contains Affirmative Procurement Initiatives, it will be noted on the Cover Page.

If this solicitation contains DBE/ACDBE requirements, offeror and/or their agents may contact the Aviation Department’s DBE/ACDBE Liaison Officer for assistance or clarification with issues specifically related to the DBE/ACDBE policy and/or completion of the required form(s). Point of contact is Ms. Barbara Patton, who may be reached via telephone at (210) 207-3592 or through e-mail at Barbara.Patton@sanantonio.gov. Offerors and/or their agents may contact Ms. Patton at any time prior to the due date for submission of offer. Contacting her or her office regarding this RFO after the offer due date is not permitted. If this solicitation contains DBE/ACDBE requirements, it will be noted on the Cover Page.

Pre-Submittal Conference.

If a Pre-Submittal Conference is scheduled, it will be held at the time and place noted on the Cover Page. Offerors are encouraged to prepare and submit their questions in writing in advance of the Pre-Submittal Conference in order to expedite the proceedings.

Pre-Submittal Conference participation is optional, but highly encouraged.

Respondents who join the WebEx Pre-Bid Conference are highly encouraged to email the solicitation’s Staff Point of Contact confirming Respondent attendance and participation through the WebEx.

Any oral response given at the Pre-Bid Conference that is not confirmed in writing and posted with this solicitation shall not be official or binding on the City.

To request an interpreter for the deaf or other assistance, call (210) 207-7245 Voice/TTY. Interpreters for the deaf must be requested at least 48 hours prior to the meeting.

Changes to RFO.

Changes to this RFO made prior to the offer due date shall be made directly to the original RFO. Changes are captured by creating a replacement version each time the RFO is changed. It is Offeror’s responsibility to check for new versions until the offer due date. City will assume that all offers received are based on the final version of the RFO as it exists on the day offers are due.

No oral statement of any person shall modify or otherwise change or affect the terms, conditions or specifications stated in the RFO.

Preparation of Offers.

All information required by the RFO must be furnished or the offer may be deemed non-responsive and rejected. Any ambiguity in the offer as a result of omission, error, unintelligible or illegible wording shall be construed in the favor of City.

Correct Legal Name. If an Offeror is found to have incorrectly or incompletely stated the name of the entity that will provide goods and/or services, the offer may be rejected.

Line Item Offers. Any offer that is considered for award by each unit or line item must include a price for each unit or line item for which Offeror wishes to be considered. All offers are awarded on the basis of low line item, low total line items, or in any other combination that serves the best interest of City, unless City designates this solicitation as an "all or none" offer in the Supplemental Terms & Conditions.

All or None Offers. Any offer that is considered for award on an "all or none" basis must include a price for all units or line items. In an "All or None" offer, a unit price left blank shall result in the offer being deemed nonresponsive and disqualified from consideration. An "All or None" offer is one in which City will award the entire contract to one offeror only.

Delivery Dates. Proposed delivery dates must be shown in the offer form where required and shall include weekends and holidays, unless specified otherwise in this RFO. Proposed delivery times must be specific. Phrases such as "as required", "as soon as possible" or "prompt" may result in disqualification of the offer. Special delivery instructions, if any, may be found in the Specifications / Scope of Services section of this document, or in the Purchase Order.

Tax Exemption. The City of San Antonio is exempt from payment of federal taxes, and State of Texas limited sales excise and use taxes. Offerors must not include such taxes in offer prices. An exemption certificate will be signed by City where applicable upon request by Offeror after contract award.

Samples, Demonstrations and Pre-award Testing. If requested by City, Offeror shall provide product samples, demonstrations, and/or testing of items offered to ensure compliance with specifications prior to award of the contract. Samples, demonstrations and/or testing must be provided within 7 calendar days of City's request. Failure to comply with City's request may result in rejection of an offer. All samples (including return thereof), demonstrations, and/or testing shall be at Offeror's expense. Samples will be returned upon written request. Requests for return of samples must be made in writing at the time the samples are provided. Otherwise, samples will become property of City at no cost to City. Samples that are consumed or destroyed during demonstrations or testing will not be returned.

Estimated Quantities for Annual Contracts.

Designation as an "annual" contract is found in the contract's title on the Cover Page of this document. The quantities stated are estimates only and are in no way binding upon City. Estimated quantities are used for the purpose of evaluation. City may increase or decrease quantities as needed. Where a contract is awarded on a unit price basis, payment shall be based on the actual quantities supplied.

Offerors shall thoroughly examine the drawings, specifications, schedule(s), instructions and all other contract documents.

Offerors shall make all investigations necessary to thoroughly inform themselves regarding plant and facilities for delivery of material and equipment, or conditions and sites/locations for providing goods and services as required by this RFO. No plea of ignorance by Offeror will be accepted as a basis for varying the requirements of City or the compensation to Offeror.

Confidential or Proprietary Information. All offers become the property of City upon receipt and will not be returned. Any information deemed to be confidential by Offeror should be clearly noted; however, City cannot guarantee that it will not be compelled to disclose all or part of any public record under the Texas Public Information Act, since information deemed to be confidential by Offeror may not be considered confidential under Texas law, or pursuant to a Court order. Pricing may be tabulated and posted to City's website, so shall not be considered proprietary or confidential.

Costs of Preparation. Offeror shall bear any and all costs that are associated with the preparation of the Offer, attendance at the Pre-Submittal conference, if any, or during any phase of the selection process.

Rejection of Offers.

City may reject any and all offers, in whole or in part, cancel the RFO and reissue the solicitation. City may reject an offer if:

Offeror misstates or conceals any material fact in the offer; or

The offer does not strictly conform to law or the requirements of the offer;

The offer is conditional; or

Any other reason that would lead City to believe that the offer is non-responsive or Offeror is not responsible.

City, in its sole discretion, may also waive any minor informalities or irregularities in any offer, such as failure to submit sufficient offer copies, failure to submit literature or similar attachments, or business affiliation information.

Changes to Offer Form. Offers must be submitted on the forms furnished. Offers that change the format or content of City's RFO may be rejected.

Withdrawal of Offers. Offers may be withdrawn prior to the due date. Offers submitted electronically may be withdrawn electronically.

Evaluation and Award of Contract.

City reserves the right to make an award on the basis of City's best interests. Award may also be made based on low line item, low total line items, or in any other combination that serves the best interest of City, unless City designates this solicitation as an "all or none" offer in the Supplemental Terms & Conditions.

A written award of acceptance, manifested by a City Ordinance, and a purchase order furnished to Offeror results in a binding contract without further action by either party. Offeror must have the Purchase Order before making any delivery.

City reserves the right to delete items prior to the awarding of the contract, and purchase said items by other means.

Inspection of Facilities/Equipment. Depending on the nature of the RFO, Offerors' facilities and equipment may be a determining factor in making the offer award. All Offerors may be subject to inspection of their facilities and equipment.

Prompt Payment Discount.

Provided Offeror meets the requirements stated herein, City shall take Offeror's offered prompt payment discount into consideration. The evaluation will not be based on the discount percentage alone, but rather the net price as determined by applying the discount to the offer price, either per line item or total offer amount. However, City reserves the right to reject a discount if the percentage is too low to be of value to City, all things considered. City may also reject a discount if the percentage is so high as to create an overly large disparity between the price City would pay if it is able to take advantage of the discount and the price City would pay if it were unable to pay within the discount period. City may always reject the discount and pay within the 30 day period, at City's sole option.

City will not consider discounts that provide fewer than 10 days to pay in order to receive the discount.

For example, payment terms of 2% 5, Net 30 will NOT be considered in offer evaluations or in the payment of invoices. However, payment terms of 2% 10, Net 30 will result in a two percent reduction in the offer price during offer evaluation, and City will take the 2% discount if the invoice is paid within the 10 day time period.

Prohibited Financial Interest.

The Charter of the City of San Antonio and the City of San Antonio Code of Ethics prohibit a City officer or employee, as those terms are defined in the Code of Ethics, from having a direct or indirect financial interest in any contract with City. An officer or employee has a "prohibited financial interest" in a contract with City or in the sale to City of land materials, supplies or service, if any of the following individual(s) or entities is a party to the contract or sale:

- A City officer or employee; his or her spouse, sibling, parent, child, or other family member within the first degree of consanguinity or affinity;

- An entity in which the officer or employee, or his or her parent, child or spouse directly or indirectly owns (i) 10% or more of the voting stock or shares of the entity, or 10% or more of the fair market value of the entity; or
- An entity in which any individual or entity listed above is (i) a subcontractor on a City contract, (ii) a partner or (iii) a parent or subsidiary entity.

By submitting a proposal, Respondent warrants and certifies, and a contract awarded pursuant to this RFO is made in reliance thereon, that it, its officers, employees and agents are neither officers nor employees of the City.

State of Texas Conflict of Interest:

Questionnaire (Form CIQ). Chapter 176 of the Texas Local Government Code requires that persons, or their agents, who seek to contract for the sale or purchase of property, goods, or services with the City, shall file a completed Form CIQ with the City Clerk if those persons meet the requirements under 176.006(a) of the statute.

By law this questionnaire must be filed with the City Clerk not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Texas Local Government Code.

Form CIQ is available from the Texas Ethics Commission by accessing the following web address:

<https://ethics.state.tx.us/forms/conflict/>

In addition, please complete the **City's Addendum to Form CIQ (Form CIQ-A)** and submit it with Form CIQ to the Office of the City Clerk. The Form CIQ-A can be found at:

<http://www.sanantonio.gov/atty/ethics/pdf/OCC-CIQ-Addendum.pdf>

When completed, the CIQ Form and the CIQ-A Form should be submitted together by mail to the Office of the City Clerk. Please mail to:

Office of the City Clerk, P.O. Box 839966, San Antonio, TX 78283-3966.

Do not include these forms with your offer. The Purchasing Division will not deliver the forms to the City Clerk for you.

004 - SPECIFICATIONS / SCOPE OF SERVICES

- 4.1 SCOPE:** The City of San Antonio is soliciting offers for an Oshkosh Striker 6x6 Aircraft Rescue and Fire Fighting Vehicle. Vehicle shall be equipped to seat up to 3 occupants. This vehicle will be used by the Aviation Fire Division. This Request For Offer (RFO) is issued pursuant to cooperative purchasing contract number FS12-23 through H-GAC with Siddons-Martin Emergency Group, who will provide the Oshkosh Striker 6x6 Aircraft Rescue and Fire Fighting Vehicle.
- 4.2 GENERAL CONDITIONS:** The following general conditions will apply to all items within this bid unless specifically excluded within any item.
- 4.2.1** City of San Antonio reserves the right to increase or decrease quantity of units being purchased up to the production "cut-off" date submitted on the bid for the particular item, depending on availability of funds. Prices may not be increased during this period; however, the City should benefit from any price decrease. Additional units may be purchased on an "as needed" basis. Successful vendor is required to notify the City of all production "cut-off" dates necessary for order submission. Vehicles are to be year model 2024 or newer.
- 4.2.2** All components shall be installed new, unused, standard production model, and equipment serviced in accordance with manufacturer's recommended pre-delivery check list, and ready for operation upon delivery, and shall include all manufacturers' standard equipment unless otherwise specified or replaced therein. Equipment offered under the below listed specifications will be considered unacceptable if for any reason its long term availability on the U.S. Market or in the local area is in doubt.
- 4.3 WARRANTY:** All items bid must include the maximum standard manufacturer's warranty available, including both parts and labor, for all components and attachments. All warranties must be for a minimum period of twelve months. The warranty shall begin on the date the vehicle is placed in service, not on the delivery date. All warranty work will be performed at no cost to the City of San Antonio, including cost of transportation to and from location where the work will be performed. Vendor shall attach a copy of the manufacturer's warranty to Vendor's bid. City will notify Vendor by letter of the in-service date for each item by serial number. Warranty service and parts must be available within a 50 mile radius of San Antonio City Hall from a factory authorized dealer. Included warranties are as follows:
- 4.3.1** ONE (1) YEAR BASE VEHICLE MATERIAL AND WORKMANSHIP
- 4.3.2** FIVE (5) YEAR ENGINE WARRANTY
- 4.3.3** FIVE (5) YEAR/UNLIMITED TRANSMISSION WARRANTY EXCLUDING TRANSMISSION COOLER - five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission.
- 4.3.4** TRANSMISSION COOLER - The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). Collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed \$10,000 per occurrence.
- 4.3.6** SUSPENSION SYSTEM – ONE (1) YEAR
- 4.3.7** FIVE (5) YEAR WATER PUMP WARRANTY - Warranty shall cover the water pump for a minimum of five (5) years.
- 4.3.8** LIFETIME WARRANTY ON WATER/FOAM TANKS.
- 4.3.9** The warranty statement shall include the following:
- Manufacturer's obligations
 - Duration of warranty period
 - Warranty procedure
 - Disclaimers
- 4.4 DELIVERY:** All deliveries will be made inside the City limits of San Antonio. Vendor must deliver equipment to a location specified by the Fleet Acquisitions Dept. at (210) 207-4603 or (210) 207-4601. Delivery to a non-specified location will result in non-acceptance of the equipment by the City. All deliveries must be pre-arranged with a minimum 24-hour notification, NO EXCEPTIONS. Vehicles will not be accepted after 3:00 P.M. CST. All vehicles are required to have a full tank(s) of fuel when delivered to City specified location.

- 4.5 EQUIPMENT MANUALS:** Two operator's manuals will be provided per purchase order, which shall include a paper parts and maintenance manual or two USB drives detailing the equipment, accessories, and components as well as construction drawings complete with wiring diagrams. The parts manual will include illustrations or exploded views (as needed) to identify properly all parts, assemblies, subassemblies, and special equipment. All components of assemblies shown in illustrations or exploded views will be identified by reference numbers that correspond to the reference number in the parts lists. All purchased parts will be cross referenced with the original equipment manufacturer's part name and number. The size, thread dimension, torque specifications, and special characteristics will be provided for all nonstandard nuts, bolts, screws, washers, grease fittings, and similar items. The parts manual will contain a list of all of the component vendor names, addresses, telephone, and website (when applicable) to obtain by in-house fleet maintenance staff.
- 4.6 REQUIRED DOCUMENTS AT DELIVERY:** The Manufacturer's Statement of Origin (MSO), Dealer Temporary license plates/tags, proper Invoice, signed 130U form, Vehicle Inspection Report, and State Weight Certificate/slip (for trucks over one ton) are required upon delivery of each unit and are required before payment can be processed. Any of these missing items will delay the payment process.
- 4.7 MINIMUM VEHICLE ACCESSORIES:** All units, must be equipped at the factory with maximum capacity cooling system offered by manufacturer, fresh air heater and defroster units, minimum AM/FM OEM radio, power windows and manual tilt steering wheel. All units must be equipped with steering column mounted gear selector unless otherwise specified. Vehicle shall have a keyless ignition and non-locking doors. All accessories and equipment will be OEM. The manufacturer will rate all equipment provided as low emission on all models available. Vehicles must be equipped with OEM tinted glass.
- 4.8 INCOMPLETE VEHICLES:** All bodies and components in this bid will be installed in accordance with the appropriate Incomplete Vehicle Data Manual. Certification of compliance will be posted on the left door post of the vehicle. Except for manufacturer's data plates (maximum 4" x 6"), vendor or manufacturer's identifying markings (decals and plates) will not be applied to the vehicle or mounted components. Installation will be completed in compliance with Federal Motor Vehicle Department of Transportation Standards and Texas State Highway requirements. Installation of body and accessories on City furnished vehicles will be accomplished by drilling holes in the frame. Welding on or cutting of frame is not authorized forward of the rear spring hanger or support. Bidders will be responsible for the relocation of any truck components to facilitate installation of the body and equipment. Such relocation must be included as part of the basic bid.
- 4.9 BUILD SHEET INSTRUCTIONS:** Upon contract award, vendor shall provide written acknowledgement of order placement. A copy of the finalized build sheet with a San Antonio Representative signature confirming equipment build out shall be provided to the City prior to equipment delivery. The delivery date for the completed unit shall be communicated when the build sheet is finalized. Build out sheets shall include the following shall be provided at time of delivery in paper and in Adobe PDF format:
- 4.9.1** Electrical wiring schematics that include lighting and air conditioning systems for body.
 - 4.9.2** Firefighting system schematics.
 - 4.9.3** Hydraulic schematic.
 - 4.9.4** Pneumatic schematic.
 - 4.9.5** Fuel schematic.
 - 4.9.6** Schedules for required preventive maintenance and required periodic maintenance.
 - 4.9.7** Lubrication locations, procedures, and intervals for parts of the vehicle and equipment that require lubrication.
- 4.10 VEHICLE INSPECTION:** The vendor shall have each vehicle (except cab and chassis units delivered without bodies) properly inspected in compliance with Texas motor vehicle laws.
- 4.11 CHECK-IN INSPECTION:** The City shall check the vehicle upon delivery to ensure compliance with this specification and any other specific requirements. The vendor shall deliver with the vehicle a manufacturer's invoice, and MSO or any official documentation to verify the fact that ordered options, GVWR rating, and other requirements have been met. Failure to provide required documentation as listed may cause the delay of 11 of 32 payment. Payment will be made within 30 days after vehicle's acceptance or receipt of correct invoice, whichever is later. Acceptance will not be made, nor payment initiated on vehicles failing to meet specifications (unless they are brought into full compliance), and all necessary documents (i.e. MSO, odometer statement, etc.) are received by the City. The City shall have a maximum of 20 working days to complete this inspection.

- 4.12 NON-COMPLIANT VEHICLES:** Vendor shall remove noncompliant vehicle(s) from City premises within 5 working days after receiving written notification from Fleet Acquisition staff. If vehicle is not removed by vendor within the specified time frame, the City may arrange for vehicle to be removed and secured by a local towing and storage facility. Vendor will be responsible for payment of all related towing and storage charges. The City will not be responsible or liable for damage or loss of noncompliant vehicles which remain on City premises, or which are removed by towing company, 5 working days after vendor notification.
- 4.13 No dealership nameplates, markings or decals will be permitted on the vehicles.**
- 4.14 BRAND NAMES:** Manufacturer names, trade names, brand names, and product numbers used herein are for the purpose of describing and establishing tested, compatible, approved, and acceptable products that are of the type and quality required by the City. The use of pre-approved brand names is not intended to limit competition; therefore, the phrase "or equal" is added. For purposes of this contract, the proposed "or equal" products shall require close adherence to the established standards of performance and quality inherently derived and reasonably expected from the brand-named products specified herein. The City shall be the sole judge of equality and suitability.
- 4.15 INFORMATION:** A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.
- 4.16 TRAINING:** At the time of delivery Vendor will also provide up to four (4) days of professionally led instruction. This instruction will cover the key safety considerations for personnel to follow when they are driving, operating, and maintaining the Vehicle, including the following: vehicle pre-trip inspection, chassis operation, aerial operation, and safety during maintenance. Vendor shall also provide professionally led instruction that shall cover key maintenance instructions for routine maintenance requirements, critical maintenance components, common parts to have on hand, and any other fleet items that should be known by in-house automotive staff.
- **On-site Training: The dealer, Siddons Martin Emergency Group, after delivery shall provide a factory-trained technician to perform the following:**
 - Post-delivery inspection of the finished vehicle
 - Prepare vehicle for service
 - Complete final adjustments to all operating systems
 - Conduct operator familiarization training for each shift of operators
 - Conduct basic maintenance familiarization training for the maintenance staff
 - On-site training duration shall be for minimum four days.
- 4.17 PERFORMANCE TESTS:** A road test will be conducted with the Vehicle fully loaded and a continuous run of no less than ten (10) miles. During that time the Vehicle will show no loss of power, nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The Vehicle will meet NFPA 414 acceleration requirements and NFPA 414 braking requirements. The Vehicle when fully loaded will not have less than 25 percent or more than 50 percent on the front axle and not less than 50 percent or more than 75 percent on the rear axle.
- 4.18 NFPA 2020 STANDARDS:** Vehicle proposed by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Any customized specifications that differ from NFPA specifications will be indicated in the proposal as "non-NFPA".
- 4.18.1** All vehicles this unit will comply with the NFPA standards effective January 1, 2016, except for fire department directed exceptions. These exceptions will be set forth in the statement of exceptions.
- 4.18.2** The Manufacturer certification will include: all design, production, operational, and performance testing of not only the Vehicle, but those components that are installed on the Vehicle.

- 4.19 MARKINGS:** All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points will be identified on the customer approval print and are shown as approximate. 4.19.1 Actual location(s) will be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers, or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack. 4.19.2 A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating. A placard will be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.
- 4.20 BREATHING AIR TEST:** if the unit has breathing air, Vendor manufacturing will draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, standard on breathing air quality for fire and emergency services respiratory protection.
- 4.21 INSPECTION TRIP(S):** the bidder will provide two (2) factory inspection trip(s) for preconstruction and final inspection for two customer representative(s) before shipment to Texas dealer location. The inspection trip(s) will be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals will be the responsibility of the bidder. Dealer shall also coordinate a final pre-delivery inspection at the dealer's location to inspect any additions that might have been added after received from the manufacturer. This final pre-delivery shall be required for final acceptance by the City of San Antonio
- 4.22 PRODUCT CHANGES AND IMPROVEMENTS:** our components and processes, as described in this proposal document, are as accurate as known at the time of bid submission but are subject to change for the purpose of product or process improvements, or changes in industry standards providing the change does not affect the meaning or definition of the bid specifications.
- 4.23 AFTERMARKET SUPPORT WEBSITE:** Vendor authorized dealer must offer access to comprehensive information pertaining to the maintenance and service for offered vehicle. This tool will provide the authorized dealer the ability to service and support the City of San Antonio to the best of their ability with factory support at their fingertips. The same support website must also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized Vendor dealer for additional support and service.
- 4.24 APPROVAL DRAWING:** A drawing of the proposed Vehicle will be prepared and provided to the purchaser for approval before construction begins. The Vendor sales representative will also be provided with a copy of the same drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc. A "revised" approval drawing of the Vehicle will be prepared and submitted by Vendor will be prepared with any changes made to the approval drawing.
- 4.25 ELECTRICAL WIRING DIAGRAMS:** One (1) USB drive copy and one (1) paper copy OR ON-LINE access of the electrical wiring diagrams, prepared for the model of chassis and body, will be provided.

4.26

ITEM	QUANTITY	DESCRIPTION
1	1	AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLE AUTOMOTIVE CHARACTERISTICS

AUTOMOTIVE CHARACTERISTICS:

4.26.1 This specification covers an Aircraft Fire Fighting Rescue 6x6 vehicle with a maximum capacity of 3,000 gallons (11,356 L) of water, 420 gallons (1,589 L) of AFFF (Aqueous Film Forming Foam), 500 pound (227 kg.) dry chemical system, a water pump, a high-volume roof turret and a fixed rate, fixed place bumper turret. Water/foam handlines with variable pattern nozzles shall also be provided as specified.

4.26.1.1 High Reach Extendable Turret (HRET): A high reach extendable turret shall be provided that shall have water and foam discharge capabilities with entrained dry chemical discharge through a high flow nozzle (Hydro-Chem or approved equivalent)

4.26.1.2 Bumper Turret: A high-volume low attack bumper turret shall be provided that shall have water and foam discharge and entrained dry chemical powder direct injection capabilities, Hydro-Chem or equivalent.

4.26.1.3 Handline: Two water/foam pre-connected handlines shall be provided in a crosslay configuration. The soft jacketed handline shall be designed for automatic energizing by a rotary valve located at the cross lay area.

4.26.1.4 Dual Agent Hose Reel: One electric rewinding hose reel shall be provided in a lower left side compartment and shall have water, foam and entrained dry chemical powder direct injection capabilities, Hydro-Chem or equivalent.

4.26.1.5 Additional Agents:

- A secondary dry chemical agent system is also required as later defined in this document.
- **A Halotron clean tertiary agent system is required as later defined in these specifications.**

4.26.2 Definitions: This document is intended to outline the technical specification requirements for an airport rescue firefighting (ARFF) vehicle in accordance with Federal Aviation Administration Advisory Circular (AC) 150/5110-10E and the National Fire Protection Association (NFPA) 414, 2020 edition. This specification is for one new Class 5 (3,000-gallon, 11,356 L) ARFF vehicle.

4.26.3 Expected Use: This specification covers an all-wheel drive, diesel powered ARFF vehicle having a mechanical foam/water system designed for extinguishing flammable and combustible liquid fuel fires. The specified dry chemical complimentary agent system is an acceptable, optional addition to the basic vehicle as dictated by local operational needs. The primary function of the vehicle described in this specification is to provide an optimum level of ARFF suppression capability throughout the critical rescue and firefighting access area. Vehicles complying with this specification meet the ARFF vehicle requirements of FAR Part 139.

4.26.4 General: Record of Past Performance: To demonstrate a record of past performance, the contractor may submit upon request list of users that have purchased similar ARFF vehicles from their company in the past five years of all types.

4.26.5 Technical Resources: To evaluate the contractor's technical resources, the following representative sample manuals shall be available upon request:

- Operator's Manual
- Service Manual
- Parts Manual
- Service and parts website with information for specific vehicles "as built"

NOTE: A collection of subcontractor or supplier parts or service manuals is not acceptable for functional component installations that are an integral part of the vehicle. It is also preferred that all manuals and component parts be illustrated in electronic format for ease of identification and supply.

4.26.6 Safety Features:

- A warning siren with speaker shall be provided, Whelen model 295 SL. The siren shall produce a minimum sound of 95 dB (A) at 100 feet (30 m) directly in front of the vehicle and 90 dB (A) at 100 feet (30 m) and 45 degrees left and right of front center.
- Two (2) air horns shall be provided, mounted in a protected area below the level of the front bumper and activated by control button on the steering wheel.
- A "vehicle backing" alarm audible up to 25 feet (7.6 m) behind the vehicle shall be provided.
- An illuminated inclinometer with Stability Dynamics LG Alert device shall be provided on the instrument panel.
- The cab roof shall include a hatch with hinged cover, a weather-tight seal and easy opening hardware to allow access from the inside of the cab to the top of the cab roof. The dimensions should be at least 32.5 inches (82.5 cm) wide and 34.5 inches (87.6 cm) tall.

4.26.7 Maintainability:

- The vehicle design shall be such that:
 - Maintenance shall be achieved with general-purpose mechanic tools and equipment.
 - Air tank drains shall be located below the compartment openings on the left side of the vehicle.
 - The engine enclosure shall be designed to access to the engines, cooling, and electrical systems via two (2) roller shutter doors, one left and one right side at the rear sides of the vehicle. These shall have a fold down step and grab handles for access to the engine bay.

4.26.8 Component Protection:

- All oil, hydraulic, air, water, foam concentrate, and electrical system conduits, tubing, and hoses shall be located in protected positions.
- Damage to the radiator, charge air and hydraulic oil coolers that could occur from brush, stones or other foreign objects shall be minimized by mounting these components in protected locations.
- All air reservoirs shall also be mounted within the chassis frame to minimize the potential of damage by foreign objects.
- A mud flap shall be provided at each wheel well position to reduce the damage from stones, brush, etc. being thrown off by the tires.

4.26.9 Painting:

- All aluminum components shall be pre-treated prior to paint using an aluminum conversion coating process.
- All parts of the vehicle shall be cleaned, treated, and primed prior to assembly and final painting with acrylic urethane to include wheels.
- The interior of all compartments and cab shall be painted with a grey/white splatter finish.
- Lettering and logos shall be provided in accordance with customer requirements
- The vehicle shall be painted "safety lime yellow" and lettered in accordance with the marking and lighting standards of Advisory Circular No. 150/5510-5D. The wheel rims shall be painted "safety lime yellow". The chassis shall be painted to match the vehicle exterior. Actual details for lettering will be determined prior to vehicle completion.

4.26.10 Insulation, Air Conditioning and Heating:

- Acoustic and Thermal insulation shall be fire and water resistant.
- A 41,300 BTU/hr. air conditioning (HFC 134A refrigerant) system, integral with the vehicle heater defroster unit shall be provided with compressor driven from the vehicle engine.
- An 85,500 BTU/hr. heating system shall be provided.

4.26.11 Materials: Dissimilar metals that may cause galvanic corrosion shall not be in contact. Protective coatings that chip, crack, or scale with age or extremes of climatic conditions or on exposure to heat shall not be used. The use of proven, non-metallic materials in lieu of metal is permitted to reduce weight, lower cost, or lessen maintenance.

4.26.12 Balances and Clearances: The weight shall be distributed as equally as practical over the axles and tires. The difference in tire load between tires on any axle shall not exceed 5 percent of the average tire load for that axle. The difference in load between axles shall not exceed 10 percent of the load on the heaviest axle.

- Approach & Departure Angles: 30 degrees
- Inter-axle Clearance Angle: 12 degrees
- Underbody Clearance: 22 inches (558 mm)
- Under-axle Clearance at Differential Housing Bowl: 16.5 inches (419 mm)
- Wall-to-Wall Turning Diameter w/ rear steering axle: 84.2 feet (25.66 m) with required TAK-4 independent suspension system and rear steer system.

4.26.13 Dimensions

- Length: 475 inches (1,206 cm) not including any bumper nozzle overhang
- Width: 120 inches (304 cm) not including mirrors
- Height: 150 inches (381 cm)

4.26.14 Load Rating:

- The functional load rating of the frame shall equal or exceed the actual gross vehicle weight (GVW)
- Front Axle Rating: 31,000 lbs. (14,061 kg)
- Rear Tandem Axle Rating: 62,000 lbs. (28,122 kg)
- GVWR: 93,000 lbs. (42,184 kg)

BODY COMPONENTS:

4.26.15 Compartments:

- The compartments shall be weather-resistant, vented, drained to allow collected water to run out under the vehicle and equipped with roller shutter type doors.
- Each compartment shall be provided with weatherproof LED "rope" lighting that are switched to automatically light when compartment doors are open with vehicle master switch "On".
- Each compartment shall be equipped with an indicator light in the cab and audible signal to advise when the door is open.
- All compartment floors and shelves shall include extruded rubber matting.
- Two (2) height adjustable, roll-out shelves shall be located in the RH lower front compartment.
- One (1) fixed height, high sided roll-out shelf shall be located in the RH lower front compartment.
- Two height-adjustable, roll-out shelves shall be located in the RH lower rear compartment
- An aluminum pegboard shall be located in the RH lower rear compartment, same as serial number 808417.
- A roll out tray for three fire extinguishers shall be located in the RH lower rear compartment, same as 808417.
- **Match all compartment changes made to S/N 808417**

4.26.16 Handrails: Extruded aluminum slip resistant handrails or a guardrail shall be provided at all steps, walkways, and elevated workstations.

4.26.17 Running Boards, Steps, Walkways and Towing Devices:

- Running boards, step surfaces, ladder rungs, walkways, and catwalks shall be antiskid.
- The height between steps shall be less than 20 inches (500 mm). The lower steps shall be less than 24 inches (600 mm) from the ground. If the lower most step extends below the approach or departure angle it must be designed to swing clear.
- A ladder with grab rails shall be provided on the rear of the vehicle providing access to the top. This ladder shall be the longer reach style as provided on serial number 792441.
- Heavy duty, stowable steps shall be provided at the front of the lower front compartments for access to the upper compartments. These shall include sturdy stowable grab handles.
- Two (2) towing hooks / eyes with shackles shall be attached directly to the frame rails at the front and rear of the vehicle.
- Scuff plates shall be installed on bottom lip of all compartments and in heavy use areas of cab door frames.
- License plate brackets with LED lighting shall be provided at the front and rear of the vehicle.
- Two ladders shall be placed on the roof on fixed brackets, one Duo Safety A24 and one Little Giant model 26.

CAB AND ACCESSORIES

4.26.18 Crew Space: All crew space shall be restricted to the interior of a fully enclosed 275 cubic foot (7.8 cubic meters) cab with approved 3-point integral restraints as minimum seat belts. The cab can accommodate seating for up to 3 (three) fire fighters.

- The chassis cab shall be designed for a center driver position. The cab shall be fabricated of aluminum components and shall have aluminum and fiberglass exterior panels. The cab shall have a minimum internal volume of 275 cubic feet. The cab shall have these features:
 - Center driver position
 - Right center control console
 - Dash console in front of driver position
 - Metal dash, not formed plastic
 - Integrated electronic control and diagnostic systems
 - Grab handles at each door for safe three point entry and exit
 - Interior coating shall be a durable spackle finish, primary color gray, dash painted black semigloss.
 - Sun visors located above the windshield
 - Roof hatch with two latches, gas strut assist
- The cab shall have a rubber floor mat covering the interior floor. The floor mat shall have a padding to provide cushioning effect and dampen noise. Portions of the cab shall be covered with a vinyl material to dampen noise.

4.26.19 Cab Features:

- 3-point mounted, constructed of welded aluminum extrusions and plates to provide the best strength to weight ratio and prevent cab collapse in the event of a vehicle rollover.
- Shall have design to prevent foam and water from dripping on the windshield and side windows during turret operations.
- Shall have an independent windshield deluge system with an electric pump.
- Shall have a single door located on each side that opens at least to a 90-degree angle with electrically operated door windows. Each door shall open a minimum of 90° and be provided with one canvas strap.
- Shall have a single piece laminated or tempered and tinted safety glass windshield.
- Shall have minimum of 84 sq. ft. (7.8 sq. m) of glass area.
- Have a center steering position with a lateral field of vision of at least 280 degrees (140 degrees left and right of center), with 90 degrees upward and 25 degrees downward visibility and ground visibility to the driver at a point as least 15 feet (4.5 m) and beyond from the vehicle.
- Shall be equipped with a center console to house the turret controls and siren and mounted to allow the driver or turret operator access to the controls from either side.
- The center console shall be designed to accommodate radio installation.
- Shall be weather-tight, acoustically, and thermally insulated to provide noise level not to exceed 85 dB (A) at the driver's ear position.
- Three (3) seats shall be provided, each with an integral, red 3-point seat belt.
- The driver's seat shall be vinyl. The seat shall be capable of 3-way adjustment with air ride suspension. Height, forward/aft and seatback angle shall be adjustable. This seat does not require an integral SCBA holder. An SCBA bracket shall be placed right side behind the drivers' seat.
- The turret operator's seat to the right of the driver shall be air ride, vinyl SCBA type with SCBA holder. Height, forward/aft shall be adjustable.
- One (1) fixed seat shall be mounted to the near left of the driver and shall have vinyl material, SCBA type.
- An aluminum step assembly shall be located below the roof hatch.
- Provisions shall be provided for storing two (2) spare SCBA bottles on each side of the vehicle, four (4) in total. These shall be stored under the cab floor and immediately accessible when the cab doors are opened.
- Shall have (2) 8" (203 mm) x 17" (431 mm) combination flat and convex mirrors, one located on each side of the cab. The mirrors shall be electrically heated and shall be electrically adjustable. The horizontal rotational viewing range shall be no less than 60 degrees. Electrical switches for the mirror adjustment and heating feature shall be provided within easy reach of the driver.

- All dash mounted switches shall be weatherproof illuminated rocker type switches with the ISO symbol legend for the function of the switch embossed into the illuminated area on the switch.
- Shall be equipped with two (2) ceiling mounted map lights.
- A rear vision camera shall be provided to aid the driver in safely backing up the vehicle. A switch shall be provided to allow the driver to manually activate the back-up camera from within the cab. The back-up camera shall also be switched "on" automatically whenever the vehicle is in the reverse mode of operation.
- **Cab shall have 110v power with power strip installed to match S/N 808417. This will run off shoreline power with an auto-eject plug off the left side of the truck. Airport supplied portable changers shall be installed.**

4.26.20 Controls: All instruments, warning lights and controls relative to truck operation shall be displayed to the left of the driver so that they shall be useful, convenient, and visible to the driver. All instruments, warning lights and controls relative to the firefighting system shall be displayed to the right of the driver so that they shall be useful, convenient, and visible to both the driver and the officer (turret operator). Agent activation must be clearly identified with color coded switches providing the operator immediate identification of the agents. Blue will identify water, Yellow will identify water/foam, and Purple will identify dry chemical.

- The following cab mounted controls shall be provided as a minimum:
 - Accelerator Pedal
 - Air Conditioner Controls
 - Brake Pedal
 - Bumper Turret Control Joystick
 - Color coded blue Water Pump
 - Color coded Foam System Activation
 - Color coded purple Dry Chemical Agent / System Activation
 - Rotary Differential Lock Control
 - Dome Light Switch Manual / Door Activated
 - Foam Concentrate Reservoir Control Valve
 - Headlight Switch w/ Bright / Dimmer Control
 - Heater / Defroster Controls
 - Horn Control with foot switch for driver only
 - Master Electrical Disconnect Switch (located in engine compartment)
 - Panel Lights Switch with Dimmer
 - Parking Brake Control
 - Power Adjustable Mirror Control
 - Roof Turret Controls Joystick
 - Rotary Ignition Start/Stop Switch
 - Siren Switch with Microphone
 - Siren foot switch for driver only
 - Switches for Emergency Beacon(s) / Strobe(s)
 - Switches for Exterior Lights
 - Switches for Non-Emergency Amber Beacon(s) / Strobe(s)
 - Tilt / Telescoping Steering Wheel Column
 - Transmission Range Selector
 - Windshield deluge
 - Windshield Wiper and Washer, column mounted

4.26.21 Instruments and Warning Lights: The following instruments and warning lights shall be provided in the cab:

- Air Pressure (brake and other air-driven accessories)
- Complementary Agent Tank-Charged Indicator
- Foam Agent Tank Level Indicator
- Water Tank Level Indicator
- Water Pump Pressure
- Low Air Pressure Warning
- Compartment Door Open Indicator
- Differential Lock Indicator

- Engine Coolant Temperature
- Engine Tachometer
- Fuel Level
- Headlight High Beam Indicator
- Speedometer / Odometer
- Voltmeter
- Low Engine Coolant Audible / Visual Alarm
- Low Oil Pressure / High Water Temperature Audible / Visual Alarm
- Complementary Agent System Pressure and agent level Indicator
- DEF Level Indicator
- Compartment door open

4.26.22 Drivers Enhanced Vision System (DEVS): The vehicle shall be equipped with a "Forward Looking Infrared (FLIR) System". The FLIR camera and monitor shall start with the vehicle's ignition. The FLIR system shall provide vision enhancement in low visibility conditions to include operation during total darkness, fog, severe weather, and firefighting operations during which thick smoke is emitted. It shall also provide the ability to detect hot spots and residual heat in all light conditions, to aid in the directing of firefighting efforts. The FLIR camera system shall be installed on the cab roof turret with the image viewable in the right-side LCD display.

4.26.23 Crew Communications: The vehicle shall have the following components installed.

- 12-volt power source shall be provided in the cab if needed for radios.
- Airport supplied radios shall be installed by the manufacturer.
- Airport supplied portable radio chargers shall be installed in the cab as noted in 4.26.20 Cab Features of the specification.
- Setcom headsets shall be provided for three passengers.

ENGINES, DRIVELINE AND CONTROLS

4.26.24 Engine: The vehicle shall be equipped a single engine and shall be a Scania DC16, 16.4-liter displacement, turbo charged, 4-stroke diesel type with 90-degree V8 cylinder configuration. The engine shall be US EPA Tier 4 final emission compliant. The engine shall be rated at 670 BHP (492 kW) with a peak torque of 1950 lb.-ft (2644 N-m). The engine shall be equipped with an electronic fuel management system. The US EPA Tier 4 final engine shall be equipped with selective catalyst reduction (SCR) and exhaust gas recirculation (EGR) but shall not have diesel particulate filtration (DPF) to meet emission standards.

- Other engine required features include:
 - Extra high-pressure fuel injection system
 - VGT Turbo charger which does not utilize variable impellor vanes
 - Centrifugal oil cleaner
 - Open crankcase ventilation
 - "Wet" cylinder liners with standing liner design
 - Individual cylinder heads
- An engine high idle control shall be provided to maintain the engine idle at approximately 1450 rpm when activated. The control for this system shall be safety interlocked to activate only after the transmission has been placed in the neutral position and the parking brake has been set.

4.26.25 Cooling System: The cooling system shall be of the circulating liquid type with a thermostatic control to maintain coolant temperature consistent with the engine manufacturer's recommendations.

- The cooling system shall include:
 - Belt driven sucker type cooling fan installed adjacent to the radiator.
 - Fan operation shall be automatically controlled by a system which monitors engine coolant, engine oil and intake manifold pressures.
 - Silicone material coolant and heater hoses
 - A Hot Start immersion type electrical engine coolant preheating device (minimum 1500 W) shall be provided as an aid to rapid starting and high initial engine performance.

- Low coolant level indicator light and buzzer mounted in the cab.
- High engine coolant temperature indicator light and buzzer mounted in the cab.
- Bar and plate type radiator core with top and bottom tanks and side members bolted to form a rigid frame surrounding the core. The radiator core shall be e-coated to enhance corrosion resistance.

4.26.26 Exhaust System: The exhaust system shall be routed through the top of the engine enclosure and shall have an exhaust rain cap.

4.26.27 Fuel System: The fuel tank shall have a minimum capacity of 90 gallons (340 L) with bottom drain plug and filler pipe located no higher than 60 inches (152 cm) from ground level. A fuel water separator with auxiliary fuel pump for the engine shall be provided. The auxiliary pump will be manually operated to re-prime the fuel system after replacement of fuel filter(s). The fuel tank shall be fabricated from aluminum.

4.26.28 Transmission: The vehicle drive system shall include a single engine, power divider and transmission integrated in this sequence. A remote mounted transmission or power divider design is not acceptable. The transmission shall be Allison Gen 5 Model 4800 EVS, automatic, multi-speed, electronically controlled transmissions, fully compatible and certified for use with the electronically controlled engine. The transmission shall have a minimum of seven (7) forward and one (1) reverse speed.

4.26.29 Axles:

- The front and rear axles shall have adequate capacity to carry the fully loaded vehicle under all intended operating conditions. For vehicle handling, stability and off-runway performance, the axles shall have identical track width of 96 inches (244 cm).
- Front Axle – 31,000 lb. (14,061 kg) rating, double reduction (axle housing and wheel end), enclosed steering drive ends, bevel gear differential with driver operated differential lock.
- Rear Tandem Axle Set – 62,000 lb. (28,123 kg) rating, double reduction (axle housing and wheel end), and bevel gear differential with driver operated differential lock.

4.26.30 Suspension:

- An off road high mobility all-wheel independent suspension (TAK-4 or equivalent) shall be provided for enhanced ride comfort, cornering and roll stability. The design shall allow the vehicle to travel safely at minimum off-road speeds of 35 mph (56 kph). The suspension design shall allow for a minimum of 16 inches (406 mm) of total wheel travel.
- Upper and lower control arms shall be used on each side of each axle.
- Each axle shall be equipped with an anti-roll bar for increased cornering stability.
- Steering and non-steering axles shall have a tie rod that is adjustable for alignment of the wheel to the center of the chassis.
- Each wheel shall have at least one coil spring and heavy-duty dual acting shock absorber

4.26.31 Steering:

- A tilt / telescoping steering wheel shall be provided.
- The chassis shall be equipped with power assisted front axle steering that shall permit manual steering to bring the fully loaded vehicle to a safe stop in the event of power assist failure.
- The rear tandem axle set shall have a steering system wherein the rear most axle shall steer a proportional percentage of the front tandem axles. Rear steer serves to reduce the turning circle of the vehicle and decrease tire scrub, thereby greatly increasing the life of the tires. The rear steer system shall be mechanical type with a physical driveline and auxiliary power steering pump.

4.26.32 Air and Brake System: The vehicle shall be equipped with dual braking system including tandem front and rear brakes with an overall vehicle tread width of 120" (3,048 mm). The brakes shall be drum type. The brakes shall be equipped with automatic brake adjusters, must be clutch and worm drive type. The system shall feature a dual type brake treadle valve with separate supply and delivery circuits. There shall be an electronic antilock brake system with a sensors and modulators at each wheel controlled by an electronic control unit (ECU). The ECU shall monitor wheel speed during braking and modulate the brakes when excessive wheel slip or lockup is detected. There shall be provision for ABS diagnostics provided. A manual parking brake valve shall be installed in the cab within easy reach of the driver.

- The air and brake system shall have the following features:
 - An automatic air-drying system (Bendix AD-IS desiccant type) downstream of the compressor.
 - Air brake chamber for each brake with self-adjusting mechanisms.
 - Drain on all reservoirs controlled from one common location on the exterior of the vehicle.
 - Visual and audible low air pressure warning device.
 - All wheel anti-locking brake system (Bendix 6S-6M or equivalent) to provide safe controllable stops.
 - The air system shall be supplied with an onboard auxiliary air compressor, electric motor driven, to maintain the vehicle's air system at a working pressure between 80 to 100 psi
 - An auto-eject type air inlet shall be located at the left side of the cab.

4.26.33 Chassis Frame: The vehicle frame shall be designed to provide the required strength and torsional rigidity. The chassis frame rail shall be high strength alloy steel with minimum yield strength of 80,000 psi (551,500 kPa) and section modulus of 49.4 in³ (809 cm³). The main frame rails shall be rectangular tube type with minimum dimensions of 12 inches (305 mm) by 4 inches (102 mm) with minimum .47-inch (12 mm) wall thickness. Frames must use bolted-in cross members with class 10.9 metric fasteners. Minimum width to the outside of the main frame rails in an assembled chassis shall be 36 inches (914 mm). The vehicle frame, suspension, and mounting of major components shall provide for diagonally opposite wheel motion up to 14 inches (360 mm) above the ground without raising the remaining wheels from the ground or causing interference. Integrity and longevity of the main frame rails shall not be compromised by any welding of bracketry, suspension parts, or reinforcements.

4.26.34 Ride Quality: Suspension to provide superior ride quality for safe operation and improved off road capability over rough roads and adverse terrain at speeds of at least 35 mph (56 KPH) without causing injury to the operating personnel, loss of vehicle control, or damage to the vehicle.

4.26.35 Wheel and Tire Assembly: The wheels shall be single disc type with all must be of identical offset, bolt patterns, and size, and must be completely interchangeable for permanent use between front and rear axles. The tires shall be 24R21 XZL steel belted radials. One (1) spare tire and wheel/rim assembly, mounted, shall be provided. The wheel/rim assembly shall be painted to match the other wheel/rim assemblies on the vehicle.

- The wheels shall be equipped with bead locks.

4.26.36 Lubrication: The engines, transmissions and chassis lubricating systems shall be the manufacturer's current standard.

ELECTRICAL SYSTEM

4.26.37 Lighting and Marking System: The system shall include the following:

- Four (4) LED headlights for upper and lower driving beam
- Wig wag feature for head lights to supplement the emergency lighting
- Driving and fog lights at front fascia
- One (1) LED light mounted on the roof turret and one (1) LED light mounted on the bumper turret
- Turn signals, front and rear, with self-canceling control; a visual as well as audible indicator; and four-way flasher switch
- Reflectors, markers, and clearance lights meeting all applicable FMVSS
- Non-glare type engine compartment LED lights to illuminate both sides of the engine and with switches(s) located in the engine compartment
- Non-glare type compartment LED lights to illuminate the inside of all storage, maintenance access, engine, and piping compartments
- LED ground lighting shall be provided
- Emergency Lighting.
 - Four (4) total Whelen L360 LED emergency lights shall be installed on the vehicle's roof. Two (2) red LED lights shall be mounted on the vehicle top front center body section and two (2) red LED lights at the rear as required must be visible from the sides, front, and rear of the vehicle.

- Ten (10) rectangular emergency lights shall be provided. Two (2) shall be on the front, two (2) at the rear and three (3) on each side. The right and left side lens colors shall be red, blue, red. The front and rear lens cover colors shall be red on left, blue on right.
- Non-Emergency Lighting - Two (2) amber LED lights shall be mounted on top of the vehicle
- Six (6) 24-volt DC LED Spectra work lights shall be provided, two (2) each side and two (2) above the windshield.
- Switches shall be provided in the cab for each set of lights. Additional switches shall be provided on the exterior of the vehicle for the side mounted light sets.

4.26.38 Power Supplies: The electrical system shall have the following:

- Four (4) Group 31, 12 A 24-volt electrical system shall be provided.
- Volt Maintenance Free Batteries with 950 CCA @ 0-degree F (each)
- On board battery charger with provisions for shore power (see below)
- A remote voltmeter shall be installed adjacent to the batteries to read the battery charge.
- A switch shall be mounted in the engine compartment that shall prevent the vehicle from being started from the cab during routine maintenance.
- Lockable total vehicle master disconnect switch rated for full vehicle current
- There shall be **three (3)** Kussmaul Super Auto eject shore power receptacles located at the left side of the cab of the vehicle. One shall provide 110 VAC power for the engine pre-heater (rear of the truck), the second shall provide 110 VAC power to the battery charger and auxiliary air compressor (Left side). **The third shall provide 100 VAC to the cab (Left Side).**

4.26.39 Starter: A Scania 24 Volt 6.5 KW or equivalent electric starting system shall be provided.

4.26.40 Wiring: All wiring shall be number coded to match a number coded electrical schematic. Standard quick disconnect plugs shall be provided throughout for ease of maintenance in removing components in the event of system damage. Wires shall be insulated in accordance with SAE standards.

4.26.41 Generator: A 10.0 KW (minimum capacity), 110/240 VAC, 60hz hydraulically powered generator shall be mounted on the vehicle in an enclosed compartment. The generator shall be in-cab remote start/stop controlled and have a light that will indicate when it is running. The generator shall be equipped with a system that will shut down the unit in event a malfunction within the electrical system.

- Two 120 VAC duplex receptacles (one straight blade and one twist lock each), shall be mounted on each side of the cab complete with weatherproof hinged covers. Pigtails shall be provided to adapt each of these for the opposite type (straight to twist, twist to straight).
- An electric cord reel shall be provided with 200 feet of 12/3 SO safety yellow cord. This cord reel shall be wired through a 20-amp circuit breaker and receive its power from the generator. The receptacle at the end of the cord shall conform to NEMA L5-20R. The reel shall be mounted in a side compartment of vehicle's cab. The cord reel shall be equipped with a 12 VDC electric rewind motor with the rewind switch be mounted adjacent to the cord reel. A tension device is not required, but a means to prevent the cord reel from unreeling in the stored position must be provided. A roller system shall be provided to allow for deployment of the cord from the reel without chafing. A junction box with an indicator light and four connections (two twist and two straight blade) shall be provided at the end of the cord.

AUTOMOTIVE PERFORMANCE

4.26.42 Acceleration: The vehicle shall be capable of 0-50 mph (0-80 km/hr.) acceleration time of 35 seconds depending on configured options.

4.26.43 Brake System: NFPA Standard 414 (2020 Edition) as amended by -10E.

4.26.44 Dynamic and Static Stability: The vehicle shall meet the following stability requirements:

- Side Slope Stability (Tilt Table Meeting SAE J2180): 30 degrees (58 percent grade)
- Dynamic Balance (Min. Speed on 100-ft. (30m) Radius Circle): 22 mph (35 kph)

4.26.45 Environmental Conditions: NFPA Standard 414 (2020 Edition) as amended by -10E A/C.

4.26.46 Grade Ability: NFPA Standard 414 (2020 Edition) as amended by -10E A/C.

4.26.47 Top Speed: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The vehicle shall be capable of a top speed of 78 mph (125 km/hr.) depending on the configured options.

4.26.48 Off-Road High Mobility Suspensions: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- An off-road, solid axle high mobility shall be provided.

FIRE EXTINGUISHING SYSTEMS/DRY CHEMICAL SYSTEM:

4.26.49 Agent Container and Components: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- A 500 pound (227 kg) dry chemical system (Ansul or equivalent) shall be provided capable of holding a potassium-based dry chemical fire-extinguishing agent. The container shall be constructed and stamped in accordance with ASME Code for Unfired Pressure Vessels.
- A purple color-coded quick acting agent system activation control shall be accessible to the seated driver and at least one other crew position. A control shall be located near the dual agent handline.
- Cab mounted pressure gauges shall be installed that, when the system is activated, shall allow the vehicle operator to determine the propellant reservoir status as well as the system operating pressure. There shall be provisions for purging agent from all piping and hose after use without discharging the remaining chemical. One (1) dry chemical fill funnel shall be supplied. The on-board nitrogen tank shall be stored vertically in a removable cradle. An electric winch shall be provided for bottle movement with a pendant controller. One (1) spare nitrogen cylinder shall be provided. Each nitrogen bottle shall be equipped with an integral pressure gauge on each bottle so crew members can easily determine the state of charge when the bottle(s) are in storage. A remote gauge for the nitrogen bottle shall be in the compartment in easy view from the ground. 500 pounds of PKP dry chemical shall be provided.

4.26.50 Agent Delivery Piping and Valves: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The installed discharge piping shall be tested at a pressure equal to 150 percent of the system working pressure.

4.26.51 Propellant, Propellant Containers and Components: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The propellant gas shall be nitrogen. All propellant gas cylinders and valves shall comply with United States Department of Transportation (DOT) requirements.

4.26.52 Dry Chemical Handline: The handline for dry chemical shall be a side mounted fixed style hose reel equipped with 100 ft. of one-inch dual agent twinned type booster hose. This handline shall be provided and mounted in the lower left front center body compartment. The hose reel shall be equipped with a 24 VDC electric rewind motor with provision for manually rewinding and a tension device to prevent the unwanted unreeling of the hose. The nozzle shall be a Williams Hydro-Chem brand capable of discharging 60 gpm foam/water and 5 lbs. per second of dry chemical in accordance with the performance requirements of the A/C. Controls at the handline shall allow charging of the nitrogen into the dry chemical tanks and charging of the dry chemical into the handline.

4.26.53 Halotron Clean Agent System/Agent Delivery Piping and Valves and Propellant Containers and Components: The vehicle shall be supplied with a 460-pound Halotron I system. Dash mounted controls shall be provided to charge the Halotron system. A means shall be provided that will indicate the capacity of the agent in the storage vessel.

- The handline for Halotron I shall be 150 ft. of one-inch type booster hose on a hose reel in an upper compartment on the left side of the vehicle. The hose reel shall be equipped with a 24 VDC electric rewind motor with manual rewind provisions. A tension device should be installed to prevent the unreeling of the hose. This handline shall be so installed to provide deployment of the hose from the right-hand side of the vehicle. The nozzle shall discharge 5 lbs. per second of Halotron in accordance with the performance requirements of the A/C. Charging of this handline shall be conveniently done by controls mounted alongside the hose reel.
- **The halotron system shall have the capability to be discharged from the HRET Piercing Tip.**
- There shall be provisions to service the Halotron agent from ground level.
- 1000 pounds of Halotron I shall be provided.
- One (1) complete set of fully charged Argon bottle(s) shall be supplied, to include a spare bottle for re-servicing. This quantity of Argon provided shall be such that it will provide a complete discharge of the Halotron agent plus perform a blow-down operation. Each Argon bottle shall be equipped with an integral pressure gauge on each bottle, so crew members can easily determine the state of charge when the cylinders are in storage.
- An electric winch shall be provided to lift and lower the Argon cylinder from the ground level to the stored position. The design shall be such that it will allow for operators to perform the Argon cylinder re-servicing without the need for any heavy lifting.
- There shall be remote Halotron tank fill provision accessible from ground level. Provide a Halotron vessel pressure gauge adjacent to the fill connection.
- An extended hose to connect to the nitrogen and argon cylinders shall be provided, overall length approximately 83".

WATER AND FOAM SYSTEMS:

4.26.54 Foam Concentrate System: Concentrate Proportioning shall be provided NFPA414 (2020 Edition) Standard for Aircraft Rescue Firefighting Vehicles, as adopted by Federal Aviation Administration (FAA) Advisory Circular 150/5220-10E plus the following:

- The vehicle shall be equipped with a ratio foam proportioning system capable of metering AFFF foam at 3% ratio within +/- 0.1% at any pressure, discharge rate or temperature variation.
- **Vehicle shall be equipped with the EcoEFP on-board foam testing system. This system is FAA approved in FAA Cert alert 21-01**

4.26.55 Foam Concentrate Reservoir and Piping: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The foam liquid concentrate tank shall have a minimum usable capacity of 420 gallons (1,589 Liters) and be constructed of UV stabilized polypropylene.
- The foam reservoir shall be part of the integral water and foam tank system and shall be mounted on a subframe to limit the transfer of the torsional strains from the vehicle's chassis to the reservoir.
- The reservoir shall be separate and distinct from the crew compartment, engine compartment, and chassis. It shall be removable as a unit, without cutting, destroying structural members, vehicle catwalks, decking or skin.
- Provisions shall be made for access for internal and external inspection and service as may be recommended or required by the vehicle or tank manufacturer. Reservoirs, large enough to require baffles, shall be provided with access to each baffled compartment.
- The reservoir shall be fitted with a sump, complete with anti-swirl baffles, and a 1-1/2-inch minimum diameter drains with a valve and an accessible control. The drain shall be fitted with 1-1/2-inch NSFHT connection with a chrome cap and chain.
- The reservoir outlet shall be located above the bottom of the sump and shall permit a continuous flow of foam concentrate to the proportioning system with the system designed to support all discharge requirements.
- The reservoir shall be vented to permit the required fill rate without exceeding the design working pressure and to permit emptying at the maximum design flow rate without danger of collapse. The vent outlet shall be directed to prevent spillage of foam concentrate on vehicle components.
- The fill system shall be capable of delivering foam concentrate to the reservoir at a rate at least equal to the maximum use rate of the foam proportioning system.
- One (1) 1-1/2-inch NSFHT foam tank fill connection shall be provided on the left side of vehicle. The inlet shall be fitted with stainless steel strainers of 1/4 inch mesh.

- A pneumatic foam fill pump shall be located on the left side of the vehicle in the lower left side compartment.
- An audible alarm shall activate in the cab when the foam level in the foam tank drops below 25%. A dash switch shall silence the low-level alarm.
- A top fill opening shall be provided which shall be equipped with a No. 10 gauge mesh, corrosion resistant stainless steel or equal screen. The fill line from the trough shall introduce foam concentrate into the reservoir to minimize foaming.
- The foam concentrate piping shall be sized to permit the flow rates needed to meet the agent discharge requirements of all discharges and shall be arranged to prevent water from entering the foam reservoir.
- The foam concentrate piping shall be so arranged that the entire system, including any foam concentrate pumps, can be flushed with water from the water tank without contaminating the foam reservoir.
- Foam tank level lights shall be provided on each side of the vehicle exterior.

4.26.56 Water Piping, Couplings, Connections and Valves: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The installed discharge piping shall be tested at a pressure equal to 150 percent of the system working pressure.
- A drainage system, with collector tubing from the low points on the pump and piping shall be provided.
- The water system piping shall be constructed of stainless steel or corrosion resistant materials.

4.26.57 Water Pump and Pump Drive: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The vehicle shall be equipped with a water pump. The water pump shall be a single stage design that meets all requirements of ICAO, NFPA 414 as well as FAA Advisory Circular 150/5220/10E. The pump shall have a rated capacity of at least 1950 U.S. gallons per minute at an operating pressure of 225 PSI with suction vacuum at the manifold inlet of 9 IN-Hg. The pump shall have an integrated chain drive ratio box with a ratio of 1:1.06. The pump gearbox shall be driven by a driveline from the truck power divider. The pump and pump transmission shall have the ability to run continuously without overheat issues in ambient temperatures up 110 degrees Fahrenheit. The pump body shall be vertically split on a single plane for easy removal of the entire impellor assembly including the bronze wear rings. The pump shall be constructed of the following materials:
 - Impeller: mechanically and hydraulically balanced brass UNS C87500
 - Pump body: Bronze
 - Transmission: aluminum alloy
 - Transmission seals: nitrile lip seals
 - Transmission input shaft: heat treated 17-4 stainless steel
- The pump shall also feature:
 - Bronze replaceable wear rings
 - Self-adjusting mechanical seal
 - 8-inch flanged intake
 - 5-inch Victaulic discharge
 - Oil splash lubricated, deep-groove ball bearings located outside the pump casing to carry both radial and axial thrust
- The pump body and gearbox shall be painted in a durable red primer. The entire pump shall be bench tested at the original manufacturer to include 400 PSI pressure test and capacity test. A test certificate shall be provided with the vehicle.
- A means shall be provided to automatically prevent the agent pump from overheating while engaged and operating at zero discharge through the installation of an automatic thermal dump line.

4.26.58 Water Reservoir and Piping: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The water reservoir requirements and features shall include:
 - A minimum usable capacity of 3,000 gallons (11,356L)
 - Constructed of UV stabilized polypropylene.
 - Sufficient longitudinal and transverse baffles shall be included to assure stability.
 - Removable manhole covers, plates, or removable tops to permit access to the sump.
 - Fitted with a sump, complete with antiscum baffles
 - A top-fill opening diameter of at least 10 inches, a screen with maximum 1/4-inch mesh and a gasketed, latchable cap. Where practical all metal, hinges, covers, and handles shall be of stainless steel.
 - Be vented to permit filling and overfilling and discharging in accordance with the A/C and 414 without exceeding the design operating pressure or causing the reservoir to collapse. Overflow shall be directed to the ground and away from the fill piping connections and vehicle components. Any restrictions in filling pressures shall be submitted in proposal and if approved, labels shall be installed at each fill station to indicate maximum fill pressure.
 - If drilling of the water tank is necessary during the production of the vehicle, the tank and associated piping shall be thoroughly cleaned and inspected to ensure that scraps from drilling have been completely removed.
 - The discharge piping shall be sized to allow sufficient water to the pump for the simultaneous operation of all turrets, ground sweeps, Handlines and under truck nozzles, at the applicable discharge rates specified.
 - The fill piping and connections shall be sized to permit filling in no more than two (2) minutes when the supply source provides sufficient volume at 80 psi (5.5 bar) at the reservoir fill connection.
 - One (1) 4-1/2-inch fill connection shall be provided on the left side of the vehicle. The connection shall be provided with a protective strainer and fitted with a 5" Storz fitting.
 - One (1) 2-1/2-inch NSFHT fill connection shall be installed on the left side of the vehicle. The connection shall be provided with a protective strainer and fitted with a cap and chain.
 - Quarter turn valves shall have a label affixed to the valve or nearby showing the "OPEN" and "CLOSED" position of the valve.
 - Any standing water in the fill connection manifold shall be drained by bleeder valves.
 - All connections, discharges, inlets, drains, gauges etc. must be labeled.
 - All inlets and outlets shall be equipped with screens to protect from foreign objects and to provide cathodic protection.
 - An audible alarm shall activate in the cab when the water level in the water tank drops below 25%. A dash switch shall silence the low-level alarm.
 - Water tank level lights shall be located on each side of the vehicle exterior.

HANDLINES, REELS, AND COMPARTMENTS

4.26.59 Handlines: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- One (1) pre-connected hand line for the discharge of foam/water shall be provided in a cross-lay configuration at the front of the lower compartment space. The hand line shall have 200 feet of 1-3/4 hose in 50-foot lengths. The hand line shall produce foam or water at a 95 gpm rate at 100 psi.
- The cross lay shall be placed within a high sided poly tray accessible from either side of the vehicle.
- A toggle switch shall be provided to control the flow to the hand line.
- Rotary valve for the automatic charging of the handline shall be placed adjacent to the crosslay area.
- Agent override switch shall be provided to allow an operator to manually by-pass the flow switches to trigger the vehicle to go to operating pressures for the hand lines.
- One (1) fixed "dual agent" hose reel for the discharge of water and foam and dry chemical shall be provided in the left side lower front compartment. The hose reel shall have 100 feet of 1" twinned type booster hose. The hose reel shall be equipped with rollers to assist the hose as it moves on and off the reel. The reel shall have electric rewind and shall have provisions for manual rewind. A dual agent nozzle shall be provided capable of flow of minimum 60 gallons per minute.

TURRETS AND UNDERTRUCK NOZZLES

4.26.60 Bumper Turret: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The bumper turret shall be a high-volume low attack type with a non-aspirating nozzle mounted at the front of the vehicle. The turret and nozzle assembly shall include the following design features:
 - The nozzle shall have a variable pattern control and have an automatic flow mechanism to maintain consistent pressure. The nozzle shall maintain a constant flow at either discharge rate whether in the straight stream or fully dispersed (fog) pattern. The nozzle shall be a non-aspirating type with 24-volt powered electric pattern actuation for straight stream or fog pattern selection. The nozzle shall meet or exceed all performance requirements for a primary turret as defined in the AC and NFPA 414.
 - The nozzle shall be Hydro-Chem non-aspirating direct injection type, capable of water/foam flow discharge rates of either 625 or 1250 GPM with a dry chemical discharge rate of 16 pounds per second.
 - An electronic joystick control shall be provided with integrated controls for discharge activation, selection of agent type, and discharge rates and patterns from straight stream to fully dispersed (fog pattern).
 - The turret shall be high-flow, electric motor driven and shall be adequately reinforced to sustain all anticipated loads and reaction forces when the nozzle is discharging. Each axis of travel shall feature double race bearings. The waterway shall be Teflon impregnated and be a hard-anodized aluminum alloy. The electric motors for horizontal and vertical travel shall be sealed, high-torque type and shall utilize sealed planetary gearboxes. There shall be fully proportional speed control. There shall be absolute position sensors. All electronics shall be fully potted. There shall be provisions for manual override in the event of an electrical failure, for both vertical and horizontal axis.

4.26.61 Roof Turret: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- The roof turret shall be a high reach extendible type (HRET). The HRET shall be an articulating, telescoping aerial nozzle device must be installed, mid ship mounted for maximum stability and best weight distribution. **Elevation of the nozzle shall be approximately 65 feet (19.8 meters), measured from ground level.** Maximum horizontal reach shall be approximately 34 feet (10.4 meters), measured from the base centerline. The nozzle shall be capable of being positioned at or below ground level in front of the vehicle. The nozzle shall be stowed in a forward position, directly in front of the vehicle cab. The nozzle shall be capable of full operation in either the stowed or elevated position as the vehicle approaches the fire.
- The water discharge piping system shall be able to flow 1,000 GPM (3,785 LPM) with minimum friction loss while fully elevated. It shall meet all discharge performance requirements set forth in NFPA 414 and the FAA Advisory Circular A/C 150-5220-10E.
- The extendable turret shall not interfere with access or functions of firefighting equipment, water/foam tanks and normal maintenance items. Due to the pump and roll requirement, the articulating and telescoping boom sections shall have limited rotation. The use of outriggers or stabilizing jacks shall not be required.

4.26.62 Base and pedestal assembly: The pedestal shall be a welded steel assembly with a machined turntable bearing mounting surface. The pedestal shall be bolted to the base structure turntable assembly to transfer the boom movements into the base structure. The pedestal assembly must be attached to the chassis frame using Grade 8 fasteners. The pedestal shall house a vertical water swivel.

4.26.63 Turntable assembly: The turntable drive shall utilize an external ring gear with ball bearings rotation. The ring gear shall be driven by a spur gear reduction input assembly - 20.5" dia. 146,000 ft-lbs. capacity (520.7 mm dia. 20192 m/k) requiring minimum installation space and a superior safety factor. This input assembly pinion shall be in turn driven by a low ratio worm gear box via a reversible high torque, low speed hydraulic motor. The gear box design shall prevent drifting of the turntable with an ultimate holding torque of 98,000 lb.-in/min. A rotation sensor shall be provided to allow for automatic centering and bedding of the booms.

4.26.64 Lower boom (elevation assembly): The lower boom shall be all steel construction utilizing high strength steel alloy tube, adequately reinforced to sustain anticipated loads. The lift cylinder shall be capable of elevating the waterway during maximum specified flow at all nozzle angles and extension. Bushings must be installed for free pivoting when the boom is being operated.

- The lift cylinder shall be equipped with a position sensor to aid in positioning the boom and provide a “soft stop” at the end of the cylinder stroke. An “OK to Rotate” indicator shall be provided with a lock-out to prevent boom rotation unless the boom is elevated to a safe point to clear obstacles on the vehicle.
- Two link arms shall be provided on each side of the lower boom assembly, pinned to the upper boom to provide articulating elevation from 0° to 68° above horizontal. Thus, both booms can move simultaneously with lift cylinder motion.

4.26.65 Tilt down feature: A hydraulic cylinder shall be installed between two telescoping pivot links to provide the capability to tilt the boom at an angle up to 40° below horizontal. The combinations of articulation and “Tilt Down” shall allow the nozzle to be placed at or below ground level in front of the vehicle. The tilt cylinder shall be equipped with a position sensor to aid in positioning the boom and provide a “soft stop” at the end of the cylinder stroke. Clash point protection shall be provided to prevent the boom from accidentally contacting the vehicle cab.

4.26.66 Upper Boom (Telescoping Assembly): The upper boom shall consist of a rectangular steel alloy tube outer section, with an aluminum alloy telescoping inner section. The upper boom shall be adequately reinforced to sustain all anticipated loads and nozzle reaction force at full flow in all sweep directions. The extension and retraction of the upper boom shall be via a hydraulic cylinder providing a fully extended stroke of 16 feet (4.9 meters).

- The telescopic boom shall be supported by Nycast Nyoil (or equal) replaceable wear pads for smooth operation and long life. Electrical and video cable shall be carried inside telescopic boom within a flexible tube support for maximum protection.

4.26.67 Elevated Waterway: The water discharge piping systems shall be able to flow 1000 gpm (3785 lpm) or more with less than 90 psi (41 kg/sq.in) friction loss at all boom and nozzle positions. A single pipe waterway shall be provided to minimize maintenance and service requirements. The waterway shall be 4" (101.6 mm) I.D. and pass through the articulating section with a swivel assembly and extend along the outside of the boom sections.

- A 3¼" (82.5 mm) nominal I.D. telescoping waterway shall be provided inside the 4" (101.6 mm) piping consisting of hard coated aluminum tubing. Telescoping sections shall be sealed by special polypropylene glands. Alignment shall be maintained with a wear band on the overlap portion of the telescoping tube. The waterway shall terminate with a 3" (76 mm) fitting for the nozzle sweep assembly.
- All pipe swivels shall be constructed of hard coated aluminum alloy with o-ring seals. Swivel seals and telescoping seals shall be equipped with grease fittings for long life lubrication.
- A preset relief valve capable of protecting the waterway system by relieving pressure, through the dumping of water to the environment shall be provided. Such dumping shall be via a system of piping terminating in an area facing away from the operator's position.

4.26.68 Nozzle sweep assembly: The nozzle sweep assembly shall consist of a double swivel unit allowing the nozzle to sweep in both horizontal and vertical planes. The double swivel shall be a large diameter long radius type for maximum flow with minimum friction loss. The assembly shall be constructed high-strength aluminum alloy that is hard anodized to resist corrosion.

- The rotation shall allow the nozzle to be directed 90° either side of center for a minimum 180° horizontal sweep (unless restricted by other specified options).
- The nozzle assembly shall be adequately reinforced to sustain all anticipated loads and reaction force of the volume nozzle, plus penetrating forces created by the piercing nozzle. The vertical movement of the piercing nozzle shall be protected by a hydraulic relief mechanism that will allow the nozzle to rotate or slip when encountering an object too difficult to penetrate.

- An “Auto-Level” feature shall be provided for the nozzle assembly to keep it parallel to the ground as the boom is being moved up or down. This feature will keep the nozzle pointed in a safe direction prior to initiating discharge operations. The overall dimensional envelope of the nozzle head assembly including piercing nozzle, lights and camera options shall not exceed 24” (610 mm) wide x 24” (610 mm) high when viewed straight from the end. This dimension will represent the smallest opening that will allow the nozzle assembly to be placed inside a passenger doorway of an aircraft.

4.26.69 Nozzle and controls: The primary nozzle shall be an automatic type capable of adjusting to high flow or low flow settings while maintaining maximum throw range. Flow rates shall be 500/1000 gpm.

- All primary firefighting functions shall be incorporated on the joystick with large buttons and switches that can be operated with gloves. Left and right motion shall control horizontal sweep. Forward and back motion shall control vertical movement. The nozzle joystick shall allow for simultaneous operation of both the nozzle and the boom to keep the nozzle on target as the boom is moved.

4.26.70 The joystick shall contain the following switches and controls:

- Water/foam on-off switches
- Fog/stream selector switch

4.26.71 The nozzle joystick panel shall contain additional switch functions and indicators. Each function shall be ISO labeled and back-lit. When any function is active the back lighting shall turn red. The nozzle joystick panel shall contain the following switches and indicators:

- Auto deploy switch to auto deploy the nozzle to horizontal position
- Auto oscillation switch
- Spotlight switch
- Auto level switch
- Volume switch to activate Volume Mode to the high-volume nozzle
- Pierce selector switch

4.26.72 Hydraulic controls:

- The lift, extension and tilt cylinders shall include holding valves for maximum safety in the event of pressure loss or hydraulic line failure. Flow control shall be electric, remote controlled and proportional type installed to insure smooth operation of the boom assembly. All hydraulic valves shall be equipped with extended handle manual overrides for emergency operation in event of electrical failure.
- The boom joystick shall be a palm grip type located adjacent to the nozzle joystick. The controller shall have four axis functions. Left and right motion shall control telescoping action. Forward and back motion shall control elevation. A “dead man” thumb button on the joystick controller shall serve to prevent accidental boom movement with unintentional movement of the joystick. This thumb button shall be accessible to either right hand or left-hand operation for the driver or officer operator. Twisting the joystick shall rotate the boom right or left. The boom joystick shall allow for simultaneous operation of both the nozzle and the boom to keep the nozzle on target as the boom is moved.
- All boom functions shall be proportionally controlled allowing the operator to adjust the speed of boom movement by the amount of joystick displacement. Cushioned stop shall be incorporated to automatically slow lift and tilt cylinder speed as they reach the end of stroke including rotation and bedding functions.

4.26.73 Automatic boom positioning shall be provided by the joystick control utilizing coordinated boom motions:

- High Attack - Mid Point Position
 - Pulling back on the joystick shall cause the booms to move to a mid-point position, pause and continue movement to a maximum elevation position.

- Low Attack
 - Pushing forward on the joystick shall cause the booms to rotate forward towards a full tilt down configuration.
- Home
 - Depressing both thumb buttons simultaneously shall cause the booms to return to a fully bedded position. This action will include a sequence of centering the boom, retracting the extension section, and properly lowering the upper and lower booms to the bedded position.
- The boom joystick panel shall contain additional indicators. Each function shall be labeled and back-lit. When any function is active the back lighting shall turn red. Indicators shall include:
 - Boom un-bedded indicator
 - OK to rotate indicator (this indicator shall flash when rotated beyond 15 degrees)
 - Control system error indicator

4.26.74 Microprocessor Control System: The hydraulic system shall be controlled by a state-of-the-art electronic control system. The system shall include programming to control boom speeds, joystick sensitivity, joystick ramping, vehicle clash point protection and automatic positioning by coordinated boom motions. The controller shall also provide proportional control of the hydraulic valve functions and provide both digital and analog input and output signals for indicators and safety functions. The system shall include a self-test mode during start-up and cyclic operating with LED diagnostics indicators if an error is detected. The system shall include Control Area Network (CAN-bus), compatible with SAE J1939 communication and system control.

4.26.75 K-Factor Precision Piercing Alignment: A fuselage detection system shall be provided with in cab display. This system will provide a fuselage profile and provide user feedback on the perpendicular point of the fuselage for piercing. Required feedback: Distance from the piercing tip the surface, angle of the piercing tip, and a visual display of the piercing tip orientation.

4.26.76 Minimum hydraulic pumping capacity: The hydraulic pumping system shall be capable of providing full performance at any engine speed. The system shall not exceed 3,000 psi (207 bar). The hydraulic reservoir shall be clearly marked "Hydraulic Oil Only" and located to provide maximum heat dissipation and prevent contamination by water or foam. A self-contained hydraulic power unit consisting of an integral pump/motor shall be provided as an alternative power source in event of main hydraulic pump failure. The unit shall be capable of returning the booms to a bedded position.

4.26.77 Lighting system:

- A red flashing LED or strobe light shall be attached to the end of the boom to identify the boom when elevated. The strobe light will be activated when the boom is elevated and the "BOOM UNBEDDED" light is energized. A lock-out system shall prevent boom rotation until the "OK TO ROTATE" indicator is activated.
- Two (2) LED spotlights shall be attached to the nozzle assembly. The spotlights shall be remotely switched from the cab. The complete system shall be weatherproof. The light shall rotate and elevate with nozzle movement to provide illumination of the water/foam stream or as an independent remote-controlled light tower.
- Two (2) LED spotlights shall be installed, one each side at the rear knuckle, to illuminate the upper boom. The knuckle lights shall be activated when the boom is elevated.

4.26.78 Rotation function: Limited rotation shall be provided for extendable turret. Rotation shall be a minimum of 30° either side of centerline. Outriggers shall not be allowed to meet this requirement. An "OK to Rotate" indicator shall be provided with a lock-out to prevent boom rotation unless the boom is elevated to a safe point to clear obstacles on the vehicle. The "OK to Rotate" light shall flash when the extendable turret has been rotated over 15° either side of center. The rotation function shall be controlled by the boom joystick, utilizing a twisting motion to rotate right or left.

4.26.79 Boom Color: The boom shall be painted metallic grey color prior to final assembly.

4.26.80 Piercing nozzle: An independent auxiliary nozzle with a piercing applicator shall attach to the telescoping boom to provide remote controlled penetrating capability. The piercing tube shall be light weight, high strength aluminum and provide a piercing depth of 36" (914 mm). A high tensile steel tip shall provide a spray pattern with 250 gpm (950 lpm) or more flow. The spray pattern shall be 40 ft (12 m) diameter ball with 30 ft (9 m) forward discharge and 10 ft (3 m) reward discharge. The piercing nozzle shall have the capability to provide a separate water/foam discharge with selector switch labeled "Pierce/Volume". The tip shall be removable and provide a 1 1/2" (38mm) NST hose connection to allow a handline to be extended from the tip for standpipe operations.

- The vertical movement of the piercing nozzle shall be protected by a hydraulic relief that will allow the nozzle to rotate or slip when encountering an object too difficult to penetrate. Resetting a mechanical device shall be unnecessary.
- A 3-way change over valve shall be provided to redirect the volume nozzle flow to the piercing nozzle. The 3-way valve shall be a ball type for long life with minimal service. A single lever quick opening manual override shall be provided for the 3-way valve.
- The piercing nozzle shall be capable of aligning with the telescoping boom for optimum positioning for piercing curved surfaces. The piercing nozzle shall be capable of piercing the aircraft skin at the 30-degree boom rotation angle. This will allow for piercing the cabin at any point over the wing area for maximum interior coverage. The piercing nozzle shall be capable of piercing in both the horizontal and vertical direction, depending on the circumstances. Piercing action shall be by fully proportional valve control allowing for controlled piercing speed and controlled piercing depth. Piercing action shall be continuous full power for piercing of multiple layers without reduction in piercing force.
- When "pierce" position is selected, the high flow tip nozzle shall automatically rotate to a "Park" position to provide for maximum piercing depth of 36" (914 mm). The piercing tip shall "stow" parallel to the boom with the piercing tip facing to the rear.

4.26.81 Piercing Nozzle Extension: A 12" (305 mm) nozzle extension shall be provided that can readily attach to the standard piercing nozzle tube to provide increased piercing depth as might be required for cargo containers or aircraft attic areas.

4.26.82 Under Truck Nozzles: NFPA Standard 414 (2020 Edition) as amended by -10E A/C plus the following:

- A minimum of (4) four under truck nozzles shall be provided, capable of providing a sufficient foam/water combined spray pattern to cover the total under truck area as well as the inner sides of the wheels and tires.

005 - SUPPLEMENTAL TERMS & CONDITIONS

Original Contract Term.

This contract shall begin upon the effective date of the ordinance awarding the contract, or date specified in the award letter if this contract does not exceed \$50,000.00. This contract shall terminate upon completion of all work described herein or delivery of all goods ordered, as applicable.

Cooperative Contract Provisions.

Term Consistent with Cooperative Contract. Notwithstanding anything to the contrary herein, no new orders may be placed hereunder after the expiration or termination of the underlying cooperative contract. Renewals cannot extend beyond the term of the underlying cooperative contract. Extensions cannot extend beyond the term of the underlying cooperative contract.

Contract Documents. The terms and conditions for performance and payment of compensation for this contract are set forth in the following contract documents, true and correct copies of which are attached hereto and fully incorporated herein for all purposes:

This Request for Offer, including any attachments identified herein and addenda issued by City prior to acceptance of an offer from Offeror;

Any Purchase Orders Issued hereunder by City of San Antonio ("City"); and

Exhibit I – All applicable terms and conditions of the Cooperative Purchasing Contract number FS12-23 through the HGAC Cooperative Purchasing.

Order of Priority of Contract Documents. Should a conflict arise among the provisions of the contract documents, this RFO and any Purchase Order issued hereunder shall govern over Exhibit I, unless otherwise specifically provided herein.

This RFO includes the following: Instructions to Offerors, General Terms and Conditions, Supplemental Terms and Conditions, Product Specifications and Description of Services, Definitions, Price Schedule, any Attachments identified herein.

Warranty.

The warranty specified in Exhibit I, if any, a minimum of 90-days product guarantee or the manufacturer's standard commercial warranty, whichever is greater, shall apply to all products and/or services purchased under this RFO, unless otherwise specified in the Specifications/Scope of Services section of this RFO. This warranty shall provide for replacement of defective merchandise, parts, and labor, and shall include pick-up of the defective merchandise from City and delivery of the replacement(s) to the same location. The warranty shall be effective from the date of acceptance of the merchandise, or completion of the service, as applicable.

Rejection of Disclaimers of Warranties & Limitations Of Liability.

ANY TERM OR CONDITION IN EXHIBIT I, OR IN ANY DOCUMENT FURNISHED BY VENDOR, DISCLAIMING THE IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR ATTEMPTING TO LIMIT VENDOR'S LIABILITY SHALL BE OF NO FORCE OR EFFECT, AND SHALL BE STRICKEN FROM THE CONTRACT DOCUMENTS AS IF NEVER CONTAINED THEREIN.

Insurance.

Prior to the commencement of the purchase and delivery of unit under this Agreement, CONTRACTOR must provide a completed Certificate(s) of Insurance to CITY's Aviation Department. The certificate must be:

- clearly labeled with the name of the contract in the Description of Operations block;
- completed by an agent and signed by a person authorized by the insurer to bind coverage on its behalf (CITY will not accept Memorandum of Insurance or Binders as proof of insurance); and
- properly endorsed and have the agent's signature, and phone number.

Certificates may be mailed or sent via email, directly from the insurer's authorized representative. CITY shall have no duty to pay or perform under this Agreement until such certificate and endorsements have been received and approved by CITY'S Aviation Department. No officer or employee, other than CITY'S Risk Manager, shall have authority to waive this requirement.

If the City does not receive copies of insurance endorsement, then by executing this Agreement, CONTRACTOR certifies and represents that its endorsements do not materially alter or diminish the insurance coverage for this contract.

The City's Risk Manager reserves the right to modify the insurance coverages, their limits, and deductibles prior to the scheduled event or during the effective period of this Agreement based on changes in statutory law, court decisions, and changes in the insurance market which presents an increased risk exposure.

CONTRACTOR shall obtain and maintain in full force and effect for the duration of this Agreement, at CONTRACTOR'S sole expense, insurance coverage written on an occurrence basis, by companies authorized and admitted to do business in the State of Texas and with an A.M. Best's rating of no less than A- (VII), in the following types and for an amount not less than the amount listed below. If the CONTRACTOR claims to be self-insured, they must provide a copy of their declaration page so the CITY can review their deductibles:

TYPE	AMOUNTS
1. Workers' Compensation	Statutory
2. Employers' Liability	\$1,000,000/\$1,000,000/\$1,000,000
3. Commercial General Liability Insurance to include coverage for the following: a. Premises/Operations b. Products/Completed Operations c. Personal/Advertising Injury d. Independent Contractors*	For Bodily Injury and Property Damage of \$1,000,000 per occurrence; \$2,000,000 General Aggregate, or its equivalent in Umbrella Liability Coverage
4. Business Automobile Liability a. Owned/leased vehicles b. Non-owned vehicles c. Hired Vehicles	Combined Single Limit for Bodily Injury and Property Damage of \$1,000,000 per occurrence * If AOA access required \$5,000,000 CSL
5. Products liability	\$1,000,000 per occurrence; \$2,000,000 general aggregate, or its equivalent in Umbrella Liability Coverage.
*If Applicable	

CONTRACTOR must require, by written contract, that all subcontractors providing goods or services under this Agreement obtain the same insurance coverages required of CONTRACTOR and provide a certificate of insurance and endorsement that names CONTRACTOR and CITY as additional insureds. CONTRACTOR shall provide CITY with subcontractor certificates and endorsements before the subcontractor starts work.

If a loss results in litigation, then the CITY is entitled, upon request and without expense to the City, to receive copies of the policies, declaration page and all endorsements. CONTRACTOR must comply with such requests within 10 days by submitting the requested insurance documents to the CITY at the following address:

City of San Antonio
Attn: Aviation Department
P.O. Box 839966
San Antonio, Texas 78283-3966

CONTRACTOR's insurance policies must contain or be endorsed to contain the following provisions:

- Name CITY and its officers, officials, employees, volunteers, and elected representatives as additional insureds by endorsement, as respects operations and activities of, or on behalf of, the named insured performed under contract with CITY. The endorsement requirement is not applicable for workers' compensation and professional liability policies.
- Endorsement that the "other insurance" clause shall not apply to CITY where CITY is an additional insured shown on the policy. CITY's insurance is not applicable in the event of a claim.
- Contractor shall submit a waiver of subrogation to include, workers' compensation, employers' liability, general liability and auto liability policies in favor of CITY; and

- Provide 30 days advance written notice directly to CITY of any suspension, cancellation, non-renewal or materials change in coverage, and not less than ten (10) calendar days advance written notice for nonpayment of premium.

Within five (5) calendar days of a suspension, cancellation, material change in coverage, or non-renewal of coverage, CONTRACTOR shall provide a replacement Certificate of Insurance and applicable endorsements to CITY. CITY shall have the option to suspend CONTRACTOR'S performance should there be a lapse in coverage at any time during this Agreement. Failure to provide and to maintain the required insurance shall constitute a material breach of this Agreement.

In addition to any other remedies CITY may have upon CONTRACTOR'S failure to provide and maintain any insurance or policy endorsements to the extent and within the time required, CITY may order CONTRACTOR to stop work and/or withhold any payment(s) which become due to CONTRACTOR under this Agreement until CONTRACTOR demonstrates compliance with requirements.

Nothing contained in this Agreement shall be construed as limiting the extent to which CONTRACTOR may be held responsible for payments of damages to persons or property resulting from CONTRACTOR'S or its subcontractors' performance of the work covered under this Agreement.

CONTRACTOR'S insurance shall be deemed primary and non-contributory with respect to any insurance or self - insurance carried by City for liability arising out of operations under this Agreement.

The insurance required is in addition to and separate from any other obligation contained in this Agreement and no claim or action by or on behalf of City shall be limited to insurance coverage provided.

CONTRACTOR and any subcontractor are responsible for all damage to their own equipment and/or property result from their own negligence.

Incorporation of Attachments.

Each of the attachments listed below is an essential part of this contract, which governs the rights and duties of the parties, incorporated herein by reference, and shall be interpreted in the order of priority as appears below, with this document taking priority over all attachments:

Attachment A – Price Schedule
Attachment B – City of San Antonio Local Preference Program Tracking Form
Attachment C – Veteran-Owned Small Business Preference Program Tracking Form
Attachment D – Certificate of Interested Parties (Form 1295)
Attachment E – Working with COSA
Exhibit I – HGAC FS12-23

006 - GENERAL TERMS & CONDITIONS

Electronic Offer Equals Original. If Vendor is submitting an electronic offer, City and Vendor each agree that this transaction may be conducted by electronic means, as authorized by Chapter 322, Texas Business & Commerce Code, known as the Electronic Transactions Act.

Delivery of Goods/Services.

Destination Contract. Vendor shall deliver all goods and materials F.O.B., City of San Antonio's designated facility, inside delivery, freight prepaid, to the address provided in this RFO or, if different, in the Purchase Order. Vendor shall bear the risk of loss until delivery. Freight charges will be paid only when expedited delivery is requested and approved in writing by City. Vendor shall be responsible for furnishing necessary personnel or equipment and/or making necessary arrangements to off load at City of San Antonio facility, unless otherwise noted herein.

Failure to Deliver. When delivery is not met as provided for in the contract, City may make the purchase on the open market, with any cost in excess of the contract price paid by Vendor, in addition to any other direct, indirect, consequential or incidental damages incurred by City as a result thereof. In addition, Vendor may be removed from City's list of eligible bidders.

Purchase Orders. Each time a City department wishes to place an order against this contract, it will issue Vendor a purchase order. Vendor must have the purchase order before making any delivery.

Acceptance by City. City shall have a reasonable time (but not less than 30 days) after receipt to inspect the goods and services tendered by Vendor. City at its option may reject all or any portion of such goods or services which do not, in City's sole discretion, comply in every respect with all terms and conditions of the contract. City may elect to reject the entire goods and services tendered even if only a portion thereof is nonconforming. If City elects to accept nonconforming goods and services, City, in addition to its other remedies, shall be entitled to deduct a reasonable amount from the price thereof to compensate City for the nonconformity. Any acceptance by City, even if non-conditional, shall not be deemed a waiver or settlement of any defect in such goods and services.

Testing. After award of contract, City may, at its sole option, test the product delivered to ensure it meets specifications. Initial testing shall be at City's expense. However, if the product does not to meet specifications, Vendor shall reimburse City for the costs of testing. City may withhold the cost of testing from any amounts owed to Vendor under this or any other contract, or invoice Vendor for same. If invoiced, Vendor shall pay City within 30 calendar days' of the invoice.

Invoicing and Payment.

Invoice Submissions. City requires all original first time invoices to be submitted directly to the Accounts Payable section of the Finance Department. The preferred method of delivery is electronically to the following e-mail address:

accounts.payable@sanantonio.gov

Invoices submitted electronically to the e-mail address above must be in separate .pdf format file. Multiple invoices cannot be submitted in a single .pdf file; however, Vendor may submit multiple, separate invoice files in a single e-mail. Any required documentation in support of the invoice should be compiled directly behind the invoice in the same .pdf file. Each electronically submitted file must have a unique identifying name that is not the same as any other file name.

Invoices submitted by electronic submission are only considered "original" when the submission comes directly from the Vendor to Accounts Payable using this e-mail address. Vendor may courtesy copy the ordering City department personnel on the e-mail.

Vendors not able to submit invoices with the required file formatting above may mail original invoices, on white paper only, to: City of San Antonio, Attn: Accounts Payable, P.O. Box 839976, San Antonio, Texas 78283-3976.

Information Required On Invoice.

All invoices must be in a form and content approved by the City. City may require modification of invoices if necessary in order to satisfy City that all billing is proper and pursuant to the terms of the contract. Invoices are required to show each City Purchase Order Number. Invoices must be legible. Items billed on invoices must be specific as to applicable stock, manufacturer, catalog or part number (if any). All invoices must show unit prices for each item being billed, the quantity of items being billed and the total for each item, as well as the total for all items on the invoice. If prices are based on list prices basis, then the list prices, the percentage discount or percentage surcharge, net unit prices, extensions and net total prices must be shown. Prompt payment discounts offered shall be shown separately on the invoice.

Payment by City.

In accordance with the Texas Prompt Payment Act, City shall have not less than 30 days to pay for goods or services. Time for payment, including payment under discount terms, will be computed from the later of: (1) the date City receives conforming goods under the contract; (2) the date performance of the service under the contract is completed; or (3) the date City receives a correct and valid invoice for the goods or services. Payment is deemed to be made on the date of mailing of the check. Payment is made in US dollars only.

This provision shall not apply where there is a bona fide dispute between City and Vendor about the goods delivered or the service performed that causes the payment to be late, or where the invoice is not mailed to the address provided herein.

The payment amount due on invoices may not be manually altered by City personnel. Once disputed items are reconciled, Vendor must submit a corrected invoice or a credit memorandum for the disputed amount.

NECESSITY OF TIMELY INVOICE / WAIVER OF PAYMENT. NOTWITHSTANDING THE FORGOING, CITY CANNOT PAY FOR ANY GOODS OR SERVICES WITHOUT AN INVOICE. VENDOR MUST INVOICE CITY NO LATER THAN 90 CALENDAR DAYS FROM THE DATE GOODS ARE DELIVERED OR SERVICES RENDERED. FAILURE TO SUBMIT AN INVOICE WITHIN SAID 90 DAY SHALL NEGATE ANY LIABILITY ON THE PART OF CITY AND CONSTITUTE A **WAIVER** BY VENDOR OF ANY AND ALL RIGHT OR CLAIMS TO COLLECT MONEYS THAT VENDOR MAY RIGHTFULLY BE OTHERWISE ENTITLED TO FOR GOODS OR SERVICES PERFORMED.

The total price for all goods and/or services is shown on the Price Schedule. No additional fees or expenses of Vendor shall be charged by Vendor nor be payable by City. The parties hereby agree that all compensable expenses of Vendor are shown on the Price Schedule. If there is a discrepancy on the Price Schedule between the unit price for an item, and the extended price, the unit price shall govern.

Amendments. Except where the terms of this contract expressly provide otherwise, any alterations, additions, or deletions to the terms hereof, shall be effected by amendment, in writing, executed by both City and Vendor. The Director of the Purchasing and General Services Department, or Director's designee, shall have authority to execute amendments on behalf of City without further action by the San Antonio City Council, subject to and contingent upon appropriation of funds for any increase in expenditures by City.

Termination.

Termination-Breach. Should vendor fail to fulfill in a timely and proper manner, as determined solely by the Director, its material obligations under this contract, or violate any of the material terms of this contract, City shall have the right to immediately terminate the contract in whole or in part. Notice of termination shall be provided in writing to the Vendor, effective upon the date set forth in the notice. City may, in City's sole discretion, provide an opportunity for Vendor to cure the default. If City elects to offer an opportunity to cure, City shall provide notice to Vendor specifying the matters in default and the cure period. If Vendor fails to cure the default within the cure period, City shall have the right, without further notice, to terminate the contract in whole or in part. Such termination shall not relieve Vendor of any liability to the City for damages sustained by virtue of any breach by Vendor.

Termination-Notice. City may terminate this contract, in whole or in part, without cause. City shall be required to give Vendor notice ten days prior to the date of termination of the contract without cause.

Termination-Funding. City retains the right to terminate this contract at the expiration of each of City's budget periods. This contract is conditioned on a best efforts attempt by City to obtain and appropriate funds for payment of any debt due by City herein.

Termination by City may be effected by Director, without further action by the San Antonio City Council.

Independent Contractor. Vendor covenants and agrees that it is an independent contractor and not an officer, agent, servant or employee of City. City shall not be liable for any claims which may be asserted by any third party occurring in connection with the services to be performed by Vendor under this contract and that Vendor has no authority to bind City. The doctrine of respondeat superior shall not apply as between City and Vendor.

INDEMNIFICATION.

VENDOR covenants and agrees to FULLY INDEMNIFY, DEFEND and HOLD HARMLESS, CITY and the elected officials, employees, officers, directors, volunteers and representatives of CITY, individually and collectively, from and against any and all costs, claims, liens, damages, losses, expenses, fees, fines, penalties, proceedings, actions, demands, causes of action, liability and suits of any kind and nature, including but not limited to, personal or bodily injury, death and property damage, made upon CITY directly or indirectly arising out of, resulting from or related to VENDOR'S activities under this Agreement, including any acts or omissions of VENDOR, any agent, officer, director, representative, employee, consultant or subcontractor of VENDOR, and their respective officers, agents employees, directors and representatives while in the exercise of the rights or performance of the duties under this Agreement. The indemnity provided for in this paragraph shall not apply to any liability resulting from the negligence of CITY, its officers or employees, in instances where such negligence causes personal injury, death, or property damage. IN THE EVENT VENDOR AND CITY ARE FOUND JOINTLY LIABLE BY A COURT OF COMPETENT JURISDICTION, LIABILITY SHALL BE APPORTIONED COMPARATIVELY IN ACCORDANCE WITH THE LAWS FOR THE STATE OF TEXAS, WITHOUT, HOWEVER, WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO CITY UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW. In addition, Vendor agrees to indemnify, defend, and hold City harmless from any claim involving patent infringement, trademarks, trade secrets, and copyrights on goods supplied.

The provisions of this INDEMNITY are solely for the benefit of the parties hereto and not intended to create or grant any rights, contractual or otherwise, to any other person or entity. VENDOR shall advise CITY in writing within 24 hours of any claim or demand against CITY or VENDOR known to VENDOR related to or arising out of VENDOR's activities under this AGREEMENT and shall see to the investigation and defense of such claim or demand at VENDOR's cost. CITY shall have the right, at its option and at its own expense, to participate in such defense without relieving VENDOR of any of its obligations under this paragraph.

Assignment. Except as otherwise stated herein, Vendor may not sell, assign, pledge, transfer or convey any interest in this contract, nor delegate the performance of any duties hereunder, by transfer, by subcontracting or any other means, without the consent of Director. As a condition of such consent, if such consent is granted, Vendor shall remain liable for completion of the services and provision of goods outlined in this contract in the event of default by the successor vendor, assignee, transferee or subcontractor. Any attempt to transfer, pledge or otherwise assign this Contract without said written approval, shall be void ab initio and shall confer no rights upon any third person.

Ownership of Documents. Pursuant to Texas Local Government Code Chapter 201, any and all Records produced by Vendor pursuant to the provisions of this contract are the exclusive property of City; and no such Record shall be the subject of any copyright or proprietary claim by Vendor. The term "Record" as used herein shall mean any document, paper, letter, book, map, photograph, sound or video recording, microfilm, magnetic tape, electronic medium, or other information recording medium, regardless of physical form or characteristic. Vendor understands and acknowledges that as the exclusive owner of any and all such Records, City has the right to use all such Records as City desires, without restriction.

Records Retention.

Vendor and its subcontractors, if any, shall properly, accurately and completely maintain all documents, papers, and records, and other evidence pertaining to the services rendered hereunder ("Documents"), and shall make such Documents available to City at their respective offices, at all reasonable times and as often as City may deem necessary during the contract period, including any extension or renewal hereof, and the record retention period established herein, for purposes of audit, inspection, examination, and making excerpts or copies of same by City and any of its authorized representatives.

Vendor shall retain any and all Documents produced as a result of services provided hereunder for a period of four years ("Retention Period") from the date of termination of the contract. If, at the end of the Retention Period, there is litigation or other questions arising from, involving or concerning these Documents or the services provided hereunder, Vendor shall retain the records until the resolution of such litigation or other such questions. Vendor acknowledges and agrees that City shall have access to any and all such Documents at any and all times, as deemed necessary by City, during said Retention Period. City may, at its election, require Vendor to return the documents to City at Vendor's expense prior to or at the conclusion of the Retention Period. In such event, Vendor may retain a copy of the documents.

Vendor shall notify City, immediately, in the event Vendor receives any requests for information from a third party, which pertain to the Documents referenced herein. Vendor understands and agrees that City will process and handle all such requests.

S.B. 943 – Disclosure Requirements for Certain Government Contracts. For contracts (1) with a stated expenditure of at least \$1 million in public funds for the purchase of goods or services by the City, or (2) that result in the expenditure of at least \$1 million in public funds for the purchase of goods or services by the City in a given fiscal year, Vendor acknowledges that the requirements of the Texas Public Information Act, Government Code, Chapter 552, Subchapter J, pertaining to the preservation and disclosure of Contracting Information maintained by the City or sent between the City and a vendor, contractor, potential vendor, or potential contractor, may apply to this offer and any resulting contract. Vendor agrees that the contract can be terminated if Vendor knowingly or intentionally fails to comply with a requirement of that subchapter.

By submitting an Offer, Offeror warrants and certifies, and a contract awarded pursuant to this RFO is made in reliance thereon, that it, has not knowingly or intentionally failed to comply with this subchapter in a previous offer or contract. City hereby relies on Vendor's certification, and if found to be false, City may reject the offer or terminate the Contract for material breach.

Severability. If any clause or provision of this contract is held invalid, illegal or unenforceable under present or future federal, state or local laws, including but not limited to the City Charter, City Code, or ordinances of the City of San Antonio, Texas, then and in that event it is the intention of the parties hereto that such invalidity, illegality or unenforceability shall not affect any other clause or provision hereof and that the remainder of this contract shall be construed as if such invalid, illegal or unenforceable clause or provision was never contained herein. It is also the intention of the parties hereto that in lieu of each clause or provision of this contract that is invalid, illegal, or unenforceable, there be added as a part of the contract a clause or provision as similar in terms to such invalid, illegal or unenforceable clause or provision as may be possible, legal, valid and enforceable.

Compliance with Law. Vendor shall provide and perform all services required under this Agreement in compliance with all applicable federal, state and local laws, rules and regulations.

Certifications. Vendor warrants and certifies that Vendor and any other person designated to provide services hereunder has the requisite training, license and/or certification to provide said services, and meets all competence standards promulgated by all other authoritative bodies, as applicable to the services provided herein.

Non-waiver of Performance. Unless otherwise specifically provided for in this Agreement, a waiver by either Party of a breach of any of the terms, conditions, covenants or guarantees of this Agreement shall not be construed or held to be a waiver of any succeeding or preceding breach of the same or any other term, condition, covenant or guarantee herein contained. Further, any failure of either Party to insist in any one or more cases upon the strict performance of any of the covenants of this Agreement, or to exercise any option herein contained, shall in no event be construed as a waiver or relinquishment for the future of such covenant or option. In fact, no waiver, change, modification or discharge by either party hereto of any provision of this Agreement shall be deemed to have been made or shall be effective unless expressed in writing and signed by the party to be charged. No act or omission by a Party shall in any manner impair or prejudice any right, power, privilege, or remedy available to that Party hereunder or by law or in equity, such rights, powers, privileges, or remedies to be always specifically preserved hereby.

Venue. Venue of any court action brought directly or indirectly by reason of this contract shall be in Bexar County, Texas. This contract is made and is to be performed in Bexar County, Texas, and is governed by the laws of the State of Texas.

Non-discrimination. As a condition of entering into this agreement, Vendor represents and warrants that it will comply with City's Commercial Nondiscrimination Policy, as described under Section III.C.1 of the SBEDA Ordinance. As part of such compliance, Vendor shall not discriminate on the basis of race, color, religion, ancestry or national origin, sex, age, marital status, sexual orientation, or on the basis of disability or other unlawful forms of discrimination in the solicitation, selection, hiring or commercial treatment of subcontractors, vendors, suppliers, or commercial customers, nor shall Vendor retaliate against any person for reporting instances of such discrimination. Vendor shall provide equal opportunity for subcontractors, vendors and suppliers to participate in all of its public sector and private sector subcontracting and supply opportunities, provided that nothing contained in this clause shall prohibit or limit otherwise lawful efforts to remedy the effects of marketplace discrimination that have occurred or are occurring in the City's Relevant Marketplace. Vendor understands and agrees that a material violation of this clause shall be considered a material breach of this agreement and may result in termination of this agreement, disqualification of Vendor from participating in City contracts, or other sanctions. This clause is not enforceable by or for the benefit of, and creates no obligation to, any third party. Vendor shall include this nondiscrimination clause in all subcontracts for the performance of this contract.

As a party to this contract, Vendor understands and agrees to comply with the *Non-Discrimination Policy* of the City of San Antonio contained in Chapter 2, Article X of the City Code and further, shall not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, veteran status, age or disability, unless exempted by state or federal law, or as otherwise established herein.

Attorney's Fees. The Parties hereto expressly agree that, in the event of litigation, each party hereby waives its right to payment of attorneys' fees.

State Prohibitions on Contracts:

This section only applies to a contract that:

- (1) is between a governmental entity and a company with 10 or more full-time employees; and
- (2) has a value of \$100,000 or more that is to be paid wholly or partly from public funds of the governmental entity.

"Company" means a for-profit organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of those entities or business associations that exists to make a profit. This term does not include a sole proprietorship.

Prohibition on Contracts with Companies Boycotting Israel.

Texas Government Code §2271.002 provides that a governmental entity may not enter into a contract with a company for goods or services, unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract.

"Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes.

By submitting an offer to or executing contract documents with the City of San Antonio, Company hereby verifies that it does not boycott Israel, and will not boycott Israel during the term of the contract. City hereby relies on Company's verification. If found to be false, City may terminate the contract for material breach.

Prohibition on Contracts with Companies Boycotting Certain Energy Companies.

Texas Government Code §2274 provides that a governmental entity may not enter into a contract with a company for goods or services, unless the contract contains a written verification from the company that it: (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the contract.

"Boycott energy company" means, without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company: (A) engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuel-based energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; or (B) does business with a company described in (A).

By submitting an offer to or executing contract documents with the City of San Antonio, Company hereby verifies that it does not boycott energy companies and will not boycott energy companies during the term of the contract. City hereby relies on Company's verification. If found to be false, City may terminate the contract for material breach.

Prohibition on Contracts with Companies that Discriminate Against Firearm and Ammunition Industries.

Texas Government Code §2274 provides that a governmental entity may not enter into a contract with a company for goods or services, unless the contract contains a written verification from the company that it: (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association.

"Discriminate against a firearm entity or firearm trade association": (A) means, with respect to the entity or association, to: (i) refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; (ii) refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or (iii) terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association.

By submitting an offer to or executing contract documents with the City of San Antonio, Company hereby verifies that it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and will not discriminate during the term of the contract against a firearm entity or firearm trade association. City hereby relies on Company's verification. If found to be false, City may terminate the contract for material breach.

CONTRACTS WITH COMPANIES ENGAGED IN BUSINESS WITH IRAN, SUDAN, OR FOREIGN TERRORIST ORGANIZATIONS PROHIBITED. Texas Government Code §2252.152 provides that a governmental entity may not enter into a governmental contract with a company that is identified on a list prepared and maintained under Texas Government Code §§2270.0201 or 2252.153. Vendor hereby certifies that it is not identified on such a list. City hereby relies on Vendor's certification. If found to be false, or if Vendor is identified on said list during the course of its contract with City, City may terminate the Contract for material breach.

Delinquent Taxes. In the event that Vendor is or subsequently becomes delinquent in the payment of taxes owed to the City of San Antonio, City reserves the right to deduct any delinquent taxes from payments that City may owe to the delinquent Vendor as a result of this contract.

Binding Contract. This contract shall be binding on and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, and successors and assigns, except as otherwise expressly provided for herein.

Entire Agreement. This contract, including City's final electronically posted online version, together with its authorizing ordinance, and its price schedule(s), addendums, attachments, purchase orders, and exhibits, if any, constitutes the final and entire agreement between the parties hereto and contains all of the terms and conditions agreed upon. No other agreements, oral or otherwise, regarding the subject matter of this contract shall be deemed to exist or to bind the parties hereto, unless same be in writing, dated subsequent to the date hereof, and be duly executed by the parties, in accordance with the Amendment provision herein. **Parties agree that City's final electronically posted online version of this solicitation contains the agreed upon specifications, scope of services, and terms and conditions of this contract, and shall control in the event of a conflict with any printed version signed and submitted by Vendor.**

007 - SIGNATURE PAGE

By submitting an offer, Offeror represents that:

(s)he is authorized to bind Offeror to fully comply with the terms and conditions of City's Request for Offer for the prices stated therein;

(s)he has read the entire document, including the final version issued by City, and agreed to the terms therein;

Offeror is in good standing with the Texas State Comptroller's Office; and

to the best of his/her knowledge, all information is true and correct.

Complete the following and sign on the signature line below. Failure to sign and submit this Signature Page will result in rejection of your offer.

Offeror Information:

Please Print or Type:

Vendor ID No.: _____

Signer's Name: _____

Name of Business: _____

Street Address: _____

City, State, Zip Code: _____

Email Address: _____

Telephone No.: _____

Fax No.: _____

City's Solicitation No.: 6100017811 Aircraft Rescue Firefighting Truck

Signature of Person Authorized to Sign Offer

008 - STANDARD DEFINITIONS

Whenever a term defined by the Uniform Commercial Code ("UCC"), as enacted by the State of Texas, is used in the Contract, the UCC definition shall control, unless otherwise defined in the Contract.

All-or-None Offer - an RFO in which City will award the entire contract to one offeror only.

Alternate Offer - two or more offers with substantive variations in the item or service offered from the same offeror in response to a solicitation.

Assignment - a transfer of claims, rights or interests in goods, services or property.

Bid Bond - security to ensure that Offeror (a) will not withdraw the offer within the period specified for acceptance, and (b) will furnish any required bonds and any necessary insurance within the time specified in the solicitation.

City - the City of San Antonio, a Texas home-rule municipal corporation.

Contractor - the offeror whose offer is accepted by City and is, therefore, the person, firm or entity providing goods or services to City under a contract.

Director - the Director of City's Finance Department, Purchasing Division, or Director's designee.

Line Item - a listing of items in an offer for which an offeror is expected to provide separate pricing.

Offer - a complete, signed response to an RFO that, if accepted, would bind Offeror to perform the resultant contract.

Offeror - a person, firm or entity that submits an offer in response to a solicitation. The offeror whose offer is accepted by City may also be referred to herein as Contractor, Vendor or Supplier.

Payment Bond - a particular form of security provided by the contractor to protect City against loss due to the contractor's failure to pay suppliers and subcontractors.

Performance Bond - a particular form of security provided by the contractor to protect City against loss due to the contractor's inability or unwillingness to complete the contract as agreed.

Performance Deposit - security provided by the contractor to protect City against loss due to the contractor's inability or unwillingness to complete the contract as agreed.

Pre-Submittal Conference - a meeting conducted by City, held in order to allow offerors to ask questions about the proposed contract and particularly, the contract specifications.

Purchase Order - a validly issued order placed by an authorized City department for the purchase of goods or services, written on City's standard purchase order form, and which is the vendor's authority to deliver to and invoice City for the goods or services specified in an RFO for the price stated in vendor's offer.

Specifications - a description of what City requires and what Offeror must offer; a description of the physical or functional characteristics of a product or material, or the nature of a service or construction item.

Subcontractor - a person, firm or entity providing goods or services to a vendor to be used in the performance of the vendor's obligations under the contract with City.

Supplier - the offeror whose offer is accepted by City and is, therefore, the person, firm or entity providing goods or services to City under a contract.

Vendor - the offeror whose offer is accepted by City and is, therefore, the person, firm or entity providing goods or services to City under a contract.

009 – ATTACHMENTS

ATTACHMENT A – PRICE SCHEDULE

ITEM	QUANTITY	DESCRIPTION
1	1	AIRCRAFT RESCUE AND FIRE FIGHTING VEHICLE AUTOMOTIVE CHARACTERISTICS

PRICE EACH: \$ _____

TOTAL: \$ _____

YEAR and MODEL of CAB & CHASSIS:

SPECIFIC MAKE & MODEL OF ENGINE OFFERED (INCLUDE SAE NET HP):

ENGINE WARRANTY (Must meet minimum warranty requirements stated herein):

TRANSMISSION WARRANTY (Must meet minimum warranty requirements stated herein):

WARRANTY (Must meet minimum warranty requirements stated herein):

WARRANTY SERVICE PROVIDER FACILITY NAME:

WARRANTY SERVICE PROVIDER FACILITY ADDRESS:

DELIVERY WILL BE MADE WITHIN _____ CALENDER DAYS AFTER ISSUANCE OF PURCHASE ORDER.

PRODUCTION CUT-OFF DATE FOR YEAR MODEL OFFERED: _____

INDICATE THE LAST DAY THAT THE CITY CAN PLACE ORDERS UNDER THIS CONTRACT WITHOUT MISSING THE PRODUCTION CUT OFF DATE: _____.

BID PRICES SHALL REMAIN FIRM FOR ALL ORDERS PLACED PRIOR TO THIS CUT OFF DATE. IN THE EVENT THAT CITY DOES NOT AWARD A CONTRACT PRIOR TO PRODUCTION CUT OFF DATE, CAN BIDDER PROVIDE BID ITEMS, AT THE BID PRICE SUBMITTED, AFTER THE PRODUCTION CUT OFF DATE? (YES/NO) _____

ITEM

QUANTITY

DESCRIPTION

2

1

Cooperative Fee

PRICE EACH: \$ _____

TOTAL: \$ _____

Prompt Payment Discount: _____% _____days. (If no discount is offered, Net 30 days)