COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF GENERAL SERVICES
COUNTY GOVERNMENT CENTER•SAN LUIS OBISPO, CALIFORNIA 93408•(805) 781-5200
DUANE P LEIB, DIRECTOR

INVITATION TO BID #3409-06
AIRCRAFT RESCUE AND FIREFIGHTING VEHICLE

October 25, 2006

The County of San Luis Obispo is currently soliciting bids for a Major Aircraft Rescue and Firefighting Vehicle as noted.

Each bid shall specify each and every item as set forth in the attached specifications. Any and all exceptions must be clearly stated in the bid. Failure to set forth any item in the specifications shall be grounds for rejection. The County of San Luis Obispo reserves the right to reject all bids and to waive any informalities.

Please submit two (2) copies of your bid on the attached form. They must be received at the office of the General Services Department no later than 4:00 p.m., November 21, 2006.

Any and all comments and suggestions are sincerely encouraged prior to the bid opening.

If you have any questions about the bid process, please contact me at (805) 781-5906. For technical questions, call Don West at (805) 544-5105.

BARBARA ADAMS
Buyer - Central Services Division
beadams@co.slo.ca.us

TO: ALL PROSPECTIVE BIDDERS
SUBJECT: LOCAL BIDDERS PREFERENCE

The County of San Luis Obispo has established a local vendor preference. All informal and formal bids for contracts will be evaluated with a 5% preference for local vendors. Note the following exceptions:

1. Those contracts which State Law requires be awarded to the lowest responsible bidder.
2. Public works construction projects.

A "local" vendor will be approved as such when, 1) It conducts business in an office with a physical location within the County of San Luis Obispo; 2) It holds a valid business license issued by the County or a city within the County; and 3) Business has been conducted in such a manner for not less than six (6) months prior to being able to receive the preference.

As of March 3, 1994 individual County Buyers evaluate bids considering the local vendor preference described above. The burden of proof will lie with bidders relative to verification of "local" vendor preference. Should any questions arise, please contact a buyer at (805) 781-5200. All prospective bidders are encouraged to quote the lowest prices at which you can furnish the items or services listed in County bids.

	YES	NO
Do you claim local vendor preference?		
Do you conduct business in an office with a physical location within the County of San Luis Obispo?		
Business Address: _____ _____		
Years at this Address: _____		
Does your business hold a valid business license issued by the County or a City within the County?		
Name of Local Agency which issued license: _____		

Business Name:_____

Authorized Individual:_____ Title: _____

Signature:_____ Dated:_____

TO: ALL PROSPECTIVE BIDDERS

SUBJECT: POLICY ON PURCHASING PRODUCTS MADE WITH OR CONTAINING CHLOROFLUOROCARBONS (CFC's)

Summary

Many products contain chlorofluorocarbons (CFC's), a known depleter of ozone in the atmosphere. Under the U.S. Clean Air Act and the Montreal Protocol on Substances That Deplete the Ozone Layer, CFC production for use in industrialized nations is to be totally phased out by January 1, 1996. There are still many products on the market that contain CFC's or are made with CFC's. The Department of General Services, purchasing staff must identify products made with or containing CFC's and purchase alternative products whenever practical and possible.

Policy

To this end, it shall be the policy of the County of San Luis Obispo that all bidders, who wish to do business with the County are required to identify all products that contain CFC's or use CFC's in the manufacturing or shipping processes. Bidders are required to identify alternative products that do not use CFC's, for possible purchase by the County.

Bidder Response

	YES	NO
Do any products offered herein contain CFC's or use CFC's in the manufacturing or shipping process?		
If yes, please offer an alternative product by copying bid forms and submitting an alternate bid. Will you offer an alternate?		
Please provide any other information that may be helpful to the County. Attachments are acceptable.		

Bidder: _____

GENERAL CONDITIONS AND INSTRUCTIONS

1. All bids submitted by Seller to Purchaser should be submitted upon the attached bidder's form, completed and signed, (only typewritten or ink shall be accepted with no erasures or corrections unless properly authenticated by signature) in accordance with the instructions contained herein.

2. The issuance of this bid request creates no obligation on the part of the County and the County reserves the unconditional right at its option to either reject all bids or waive any irregularities or informalities therein. Each bid shall be in a separate sealed envelope with the bid number, name of bidder, title of the bid, date and time due showing on the outside of the envelope.

3. All prices must be firm for 45 days from the date of the bid opening and be inclusive. Upon award, prices will be in effect for the term of the contract.

4. Prompt payment discounts of 20 days or longer will only be considered when comparing bids, however, if you offer any prompt payment discounts, please indicate this on your bid.

5. Awards will be made to realize the greatest savings to the County and may not necessarily be the lowest bid especially where services are of the utmost importance.

6. Submission of a signed bid will be interpreted to mean that the bidder has thereby agreed to all conditions, instructions, descriptions and specifications contained herein.

7. All materials included in the contract shall be in compliance with all Federal and State OSHA laws.

8. All applicable City, State, and Federal taxes and fees are to be included in the proposal.

9. The only terms that will be honored are those terms included in general and special conditions and instructions, purchase order or other documents issued by the County.

10. In the event of any conflicts or ambiguities between these instructions and State or Federal laws, regulations or rules, then the latter shall prevail.

11. Only one bid will be accepted per vendor.

12. Bidders may withdraw their bid either personally, by written request, or by telegraphic request confirmed in the manner specified above at any time prior to the scheduled closing time for receipt of bids. No bidder may withdraw their bid after the time set for the opening.

13. All time limits stated are of the essence and must be complied with. Any bids received after closing time stipulated will be returned unopened.

14. All bids must be submitted in a manner so they can be readily hole punched and placed in a standard legal size file folder.

15. The County may make partial payments after a substantial portion of the merchandise has been delivered. On all items, a 10% retention will be withheld until all merchandise has been accepted.

16. Brand names are used to establish a level of quality only. Any alternates must be approved five (5) days prior to the bid opening date, by the Central Services Manager, who will have the sole right to determine this. If an alternate is submitted without going through the above- described process, the County will have the sole right to decide whether or not an alternate is acceptable.

17. Vendor agrees that it will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin and that it will comply with the "Contractor's Agreements" provisions of Presidential Executive Order No. 11246.

18. **NO FAXED** Bids will be accepted.

19. Return bid by November 21, 2006 at 4:00 p.m. to:

COUNTY OF SAN LUIS OBISPO
DEPARTMENT OF GENERAL SERVICES
BARBARA ADAMS, BUYER
1087 SANTA ROSA STREET
SAN LUIS OBISPO, CALIFORNIA 93408

SPECIFICATION

FOR A

MAJOR AIRCRAFT RESCUE AND FIREFIGHTING VEHICLE

FOR

SAN LUIS OBISPO COUNTY REGIONAL AIRPORT

WITH AGENT CAPACITIES OF

1500 USABLE GALLONS OF WATER

200 GALLONS OF AFFF CONCENTRATE

460 POUNDS OF HALOTRON CLEAN AGENT

OCTOBER 25, 2006

TABLE OF CONTENTS

Section 4. DRIVELINE AND CONTROLS
- 31. AXLES
- 32. BRAKE SYSTEM
- 33. STEERING
- 34. SUSPENSION
- 35. TRANSFER CASE
- 36. TRANSMISSION
- 37. WHEELS AND TIRE ASSEMBLY

Section 5. ELECTRICAL SYSTEM
- 38. COOLANT HEATER
- 39. LIGHTING AND MARKING SYSTEM
- 40. POWER SUPPLIES
- 41. STARTER
- 42. WIRING
- 43. RADIO INTERFERENCE

Section 6. ENGINE AND ACCESSORIES
- 44. COOLING SYSTEM
- 45. EXHAUST SYSTEM
- 46. FUEL SYSTEM
- 47. GOVERNOR
- 48. LUBRICATION
- 49. POWER REQUIREMENT
- 50. WINTERIZATION -- OPTION

Section 7. AUTOMOTIVE PERFORMANCE
- 51. ACCELERATION
- 52. BRAKE SYSTEM
- 53. DYNAMIC AND STATIC STABILITY
- 54. ENVIRONMENTAL CONDITIONS
- 55. GRADABILITY
- 56. OPERATIONAL RANGE
- 57. TOP SPEED
- 58. through 69. Reserved

Chapter 3. FIRE EXTINGUISHING SYSTEMS

Section 1. DRY CHEMICAL -- OPTION
- 70. AGENT CONTAINER(S) AND COMPONENTS
- 71. AGENT DELIVERY PIPING AND VALVES
- 72. PROPELLANT, CONTAINERS AND COMPONENTS

Section 2. HALOTRON I -- OPTION
- 73. AGENT CONTAINER AND COMPONENTS
- 74. AGENT DELIVERY PIPING AND VALVES
- 75. PROPELLANT, CONTAINERS AND COMPONENTS

Section 3. FOAM CONCENTRATE SYSTEM
- 76. FOAM CONCENTRATE PROPORTIONING
- 77. FOAM CONCENTRATE RESERVOIR AND PIPING

Section 4. WATER SYSTEM
- 78. PIPING, COUPLINGS, CONNECTIONS, AND VALVES
- 79. WATER PUMPS AND PUMP DRIVE
- 80. WATER RESERVOIR AND PIPING

Section 5. HANDLINES, REELS, AND COMPARTMENTS
- 81. HANDLINES
- 82. HOSE AND HOSE REEL COMPARTMENTS

Section 6. GROUND SWEEP, TURRETS, AND UNDERTRUCK NOZZLES
- 83. GROUND SWEEP OR BUMPER TURRET
- 84. PRIMARY TURRET
- 85. UNDERTRUCK NOZZLES -- OPTION

Section 7. AGENT SYSTEM PERFORMANCE
- 86. COMPLEMENTARY AGENT SYSTEMS -- OPTION
- 87. WATER/FOAM AGENT APPLICATORS
- 88. through 99. Reserved

Chapter 4. QUALITY ASSURANCE

Section 1. GENERAL CONSIDERATION
- 100 through 102

Section 2. CERTIFICATION OF PERFORMANCE
- 103 through 104

Section 3. PROTOTYPE VEHICLE PERFORMANCE
- 105 through 120

Section 4. PRODUCTION VEHICLE PERFORMANCE ACCEPTANCE TESTS
- 121 through 132

TABLE A3-1. EQUIPMENT FOR AIRCRAFT RESCUE AND FIREFIGHTING OPERATIONS

Chapter 1. INTRODUCTION
Section 1. GENERAL CHARACTERISTICS

1. DEFINITIONS.

This specification is intended to outline the technical specification requirements for an ARFF vehicle in accordance with the FAA 150/5220-10C advisory for competitive bids. Terms with meanings unique or specifically related to aircraft rescue and firefighting (ARFF) vehicle design, construction, and performance requirements are contained in Appendix 1 of the advisory.

This specification is for one new and unused class 1 (1500 gallon) aircraft rescue and firefighting (ARFF) vehicle. As a minimum, vehicles offered in the bid process shall conform to the requirements set forth in the Federal Aviation Administration Advisory Circular No. 150/5220-10C dated 2/18/2001. The referenced advisory circular (hereinafter referred to as the "-10C Advisory Circular") contains the performance standards, construction, and testing requirements for this type of vehicle. The referenced FAA Advisory Circular can be downloaded at: http://www.faa.gov/arp/Acs/5220-10C.pdf

In addition to the basic requirements of the referenced advisory, the following "Sponsor Election of ARFF Vehicle Subsystem Components" as defined in Appendix 4, are made for inclusion in the vehicle specification requirements. The vehicle and all items listed under Table A3-1 shall be bid FOB San Luis Obispo County Regional Airport. The completed vehicle is to be delivered direct to the airport by low-boy truck transport.

2. 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 complimentary agent systems (as noted in the respective sections of this specification), are acceptable, optional additions to the basic vehicle 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 for the lowest practical cost. Vehicles complying with this specification meet the ARFF vehicle requirements of FAR Part 139. However, it is also intended that this vehicle be suitable for other fire protection assignments at the airport. .

3. FIRE SUPPRESSION CHARACTERISTICS.

This vehicle is to be designed for a degree of off-pavement mobility not normally found in highway vehicles. The vehicle payload consists principally of the minimum usable (rated capacity) quantities of water shown in Table 1 of the advisory and sufficient quantity of 3% AFFF foam concentrate to support four times the water quantity.

The fire fighting system used on the vehicle shall consist of water/AFFF foam and secondary agent system for Halotron clean agent as specified later in this document.

a. System. The AFFF foam system shall consist of the following: a tank with a useable capacity of 1500 gallons of water, a 200 gallon reservoir for AFFF, a

water pump, and non-aspirating roof and bumper turrets as specified in sections 83 and 84 of this specification. Water/foam handlines with variable pattern nozzle shall also be provided as specified in section 81.

b. Primary Turret. The controls for the turret(s) shall be physically located to permit operation by one operator. The primary discharge and agent activation controls shall be operable from the driver's seat.

c. Handlines. A minimum of two water/foam handlines are to be provided as defined in section 81. Each handline shall be designed for manual activation by a single valve handle extension located close to the hose reel or preconnected storage area. The quick opening valve shall energize the line to the nozzle valve.

d. Secondary Agent. Secondary agent systems are also required as later defined in chapter 3, sections 1 and 2 of this document.

4. RESERVED.

Section 2. ERGONOMICS

5. CREW SPACE.

In accordance with the -10C Advisory Circular plus the following:

Radio equipment shall be supplied, mounted and ready to operate:

a. ICOM IC-A110 (version 5), 10 watt, 20 channel programmable VHF aviation band radio, complete with antennae, mic, and external (in cab) speaker.
b. Qty 1, Kenwood model TK790 VHF mobile radio complete with antennae, mic, and external speaker.
c. A Setcom headset/intercom system, with headsets for two crewmembers shall be interfaced with the aviation band and fire department mobile radios. The driver and turret operators headsets, shall have transmit, receive and intercom capability.

6. RIDE QUALITY.

The design objective for the vehicle ride quality shall be to permit safe operation over rough roads and adverse terrain found at the airport of intended service at speeds up to 35 mph without causing injury to the operating personnel (wearing seat belts) or damage to the vehicle.

7. CONTROLS.

In accordance with the -10C Advisory Circular.

8. SAFETY FEATURES.

In accordance with the -10C Advisory Circular.

Section 3. DESIGN CRITERIA

9. PERFORMANCE.

In accordance with the -10C Advisory Circular.

a. The design objective for the vehicle and the fire extinguishing system shall be performance in accordance with Section 7, for a class 2 vehicle.

b. Performance for the fire extinguishing system shall be in accordance with Section 7, Chapter 3.

10. FLEXIBILITY.

In accordance with the -10C Advisory Circular.

11. MAINTAINABILITY.

In accordance with the -10C Advisory Circular.

The optional continuous duty lubrication system is required.

12. COMPONENT PROTECTION.

In accordance with the -10C Advisory Circular.

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.

13. PAINTING, MARKING, AND LIGHTING.

The vehicle shall be painted and lettered in accordance with the marking and lighting standards of Advisory Circular No. 150/5510-5B. The numerals and the lettering shall be a non-reflective “Blue” vinyl material. The numeral ”21” shall be affixed to the cab roof 24 inches high and on each side of the vehicle 16 inches high. A 6 inch White reflective stripe shall be affixed on each side of the vehicle. Lettering shall be provided on both sides of the vehicle, centered as best as possible and sized to fit the available space. Actual details for lettering will be determined prior to vehicle completion.

Vehicle lettering to read…

SAN LUIS OBISPO COUNTY AIRPORT
CDF/SLO COUNTY FIRE

14. INSULATION AND WATERPROOFING.

In accordance with the -10C Advisory Circular.

15. MATERIALS.

In accordance with the -10C Advisory Circular.

16. through 19. Reserved.

Chapter 2. AUTOMOTIVE SYSTEM
Section 1. FRAME

20. BALANCE AND CLEARANCES.

In accordance with the -10C Advisory Circular.

21. DIMENSIONS.

In accordance with the -10C Advisory Circular.

22. LOAD RATING.

In accordance with the -10C Advisory Circular plus the following:

a. Two shackles shall be provided for use with the tow eyes at the front and rear of the frame.

b. In addition to the towing/eyes that are attached at the front and rear of the frame, a pintle hook shall be attached to the vehicle's frame at the rear of the vehicle.

Section 2. BODY COMPONENTS

23. COACH WORK.

In accordance with the -10C Advisory Circular.

24. COMPARTMENTS.

In accordance with the -10C Advisory Circular plus the following:

a. Each compartment and/or storage tray intended for storage of equipment items shall be lined with one-piece PVC ribbed matting.

b. To maximize available storage space, at least two compartments shall be equipped with a height adjustable rollout shelf for equipment storage.

c. Storage tubes shall be provided for four (4) spare SCBA bottles located in body side panels or lower a side compartment.

25. HANDRAILS.

In accordance with the -10C Advisory Circular.

26. RUNNING BOARDS, STEPS, AND WALKWAYS.

In accordance with the -10C Advisory Circular.

Section 3. CAB AND ACCESSORIES

27. CONTROLS.

The following cab mounted controls shall be provided as applicable for the safe and efficient operation of the vehicle:

Accelerator Pedal
Agent Flow Control
Brake Pedal
Complimentary Agent/System Activation
Differential Lock Control
Dome Light Switch, Manual/Door Activated
Engine Shutdown Switch
Flashing Beacon Switch(es)
Foam Reservoir Control Valve
Headlight Switch w/Dimmer Control
Heater/Defroster Controls
Horn Control
Ignition Switch
Master Electrical Disconnect Switch
Panel Lights Switch with Dimmer
Parking Brake Control
Siren Switch with Microphone
Spotlight Switch(es)
Starter Switch
Steering Wheel, with Self-Canceling Direction Signal
Top Deck Light Switches
Transmission Range Selector
Turret Control
Water Flow Control Valve
Windshield Deluge System Control if specified in item 29
Windshield Wiper and Washer Controls

28. CREW SPACE and DOORS.

In accordance with the -10C Advisory Circular plus the following:

a. The vehicle shall be supplied with a fully adjustable (non-SCBA) seat for the driver, and fixed seats (with SCBA storage) for two additional crewmembers. A removable or retractable insert (cover) shall be installed in each crew seat to cover the breathing apparatus bottle. All seats shall be of stain resistant fabric and shall be equipped with a three-point seat belt installation.

b. The cab shall be equipped with access steps leading to a cab roof hatch.

c. The cab shall be equipped with a center console to house the turret controls, and radio equipment. The Console shall be mounted between the driver's seat and the right hand crew position seat allowing access to controls from either side.

d. The windshield shall be of shatterproof laminated safety type glass and all other windows shall be of approved laminated or tempered tinted safety type glass. The cab doors shall be equipped with electric roll-down windows. Control switches shall be provided at the center console accessible by the driver and turret operator.

e. Two aircraft type map lights shall be provided above the center console.

f. The cab shall be equipped with a tilt/telescoping steering column.

g. Two outside rear view mirrors having an area of not less than 60 square inches each shall be provided as well as a wide-angle convex mirror on each side with a minimum area of 28 square inches. The mirrors (both flat and convex) shall be 4-way power remote controlled from the drivers seated position.

h. A rear vision camera and in-cab 6-inch monitor (Safety Vision, or equal) shall be provided to aid the driver in safely backing up the vehicle. The monitor shall be located in the same approximate position as the rear view mirror in a typical automobile. 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.

i. A lateral stability indicator with both audio and visual alarm, Stability Dynamics Ltd. Lateral 'G' Force Device, Model LG Alert, or equal, shall be provided for rollover prevention and operator safety.

j. A monitoring and data acquisition system (MADAS) shall be installed for the collection of various performance measurements to monitor the following:

(1) Vehicle speed
(2) Vehicle heading
(3) Lateral acceleration
(4) Vertical acceleration
(5) Longitudinal acceleration and deceleration
(6) Engine rpm
(7) Throttle position
(8) Steering input
(9) Vehicle braking input (pedal position and brake pressure)
(10) Date, time, and location for all data collected

The data acquisition system shall be capable of storing the measurements and the time intervals, starting at least 120 seconds before and ending at least 15 seconds after any serious incident. The system shall be designed so that the data being recorded will not be lost or overwritten immediately after the incident due to the use of an emergency shut-off or a master electrical disconnect switch.

29. EQUIPMENT.

In accordance with the -10C Advisory Circular plus the following

a. All dash-mounted switches shall be weatherproof, illuminated rocker type switches with the legend for the function of the switch embossed into the illuminated area on the switch.

b. A check engine light and audible alarm system shall be provided in the cab to indicate any of the following conditions; low engine coolant level, low engine oil pressure and high engine coolant temperature.

c. A combination heating/air conditioning unit shall be installed in the cab. The air conditioning system shall be driven from the vehicle engine, 50,000 btu minimum. The AC system shall be integral with the vehicles heater/defroster unit, utilizing the same set of controls and vents. The AC system shall be charged with 134A refrigerant.

d. Two, (2) Grover Stuttertone air horns, model AL1510 or equal, shall be provided. The air horns shall be mounted below the level of the front bumper and in such a position so that the trumpets are protected from water/foam spray from the turrets.

e. Two (2), two speed defroster fans shall be mounted on the instrument panel, one on each side, inside the cab. A switch shall be mounted in the instrument panel within the driver's reach to turn the fans "on" and "off". A guard shall be mounted around the rotating blade to prevent injury.

f. A windshield deluge system shall be included to cool the windshield and to provide operator visibility during firefighting operations. Clear water shall be discharged at a minimum rate of 3 gpm under sufficient pressure and in a pattern that will assure the driver/operator’s field of vision can be kept clear of foam solution when used in conjunction with the windshield wiper. The windshield wipers shall be automatically energized to the low speed mode of operation whenever the deluge system is operated.

30. INSTRUMENTS AND WARNING LIGHTS.

In accordance with the -10C Advisory Circular

Section 4. DRIVELINE AND CONTROLS

31. AXLES.

In accordance with the -10C Advisory Circular plus the following

a. Double acting hydraulic shock absorbers shall be provided on all axles.

b. To include the Off-Road High Mobility suspension described in item 58.

32. BRAKE SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

a. The front and rear axle brake assemblies shall be equipped with self-adjusting mechanisms.

b. An all wheel anti-lock braking system designed to provide safe controllable stops from various speeds while traveling on low friction surfaces. A self-diagnostic cab mounted panel shall be provided to advise of the system's operation.

c. A Bendix ADIP, (or equal) air dryer with a thermostatically controlled purge chamber shall be supplied.

d. A 27 cfm engine driven compressor shall be provided to ensure sufficient capacity to operate all of the vehicles air system components.

e. Provisions shall be installed on the vehicle to drain all the air reservoirs from the exterior of the vehicle. The provisions shall eliminate the need for an individual to go underneath the vehicle to accomplish the required periodic draining of the air reservoirs. Each of the drain points shall be labeled.

f. The air system shall be supplied with an on board auxiliary air compressor, 115VAC electric motor driven, to maintain the vehicle's air system at a working pressure between 80 to 100 psi. The 115 VAC, 20-amp connection shall be an auto-ejecting type (Kussmaul or equal) mounted on the left side of the cab. The matching female receptacle shall also be provided.

g. An air hose reel shall be provided in an upper compartment on the left side of the cab. The hose reel shall be equipped with 150 ft. of 3/8” ID air hose with a female quick disconnect.

33. STEERING.

In accordance with the -10C Advisory Circular.

34. SUSPENSION.

In accordance with the -10C Advisory Circular, plus the Off-Road High mobility suspension as described in item 58.

35. TRANSFER CASE.

In accordance with the -10C Advisory Circular, the transfer case shall incorporate a drive to the front and rear axles that will not allow the vehicle to stall as long as the tire(s) of any axle have traction.

36. TRANSMISSION.

The transmission shall be, multi-speed, electronically controlled, fully compatible and certified for use with the electronically controlled engine.

37. WHEELS AND TIRE ASSEMBLY.

In accordance with the -10C Advisory Circular plus the following:

a. Tires shall be tubeless radial, Michelin 24R21 XZL or equal.

b. Each tire assembly; including the spare tire and wheel assembly shall be painted to match the other wheel/rim assemblies on the vehicle.

Section 5. ELECTRICAL SYSTEM

38. COOLANT HEATER.

In accordance with the -10C Advisory Circular, an engine coolant-preheating device shall be provided. It shall have sufficient capacity to maintain the engine at the manufacturer's recommended temperature for rapid starting and immediate high initial engine performance.

39. LIGHTING AND MARKING SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

a. Two (2) red, Whelen mini-light bars shall be mounted on the vehicle's top surface, at the front center body section of the vehicle to meet visibility requirements.

b. One (1) red, Whelen mini-light bar shall be mounted on the vehicle’s top surface, at the rear body section.

c. Two (2) forward facing, red rectangular LED strobe lights shall be mounted on the front of the vehicle near bumper height (Whelen LED, or equal).

d. Two (2) rear facing, red rectangular LED strobe lights shall be mounted at the rear of the vehicle near bumper height (Whelen LED, or equal).

e. Two (2), Red, rectangular LED strobe lights shall be mounted on each side of the vehicle (Whelen 3x7 LED, or equal). These lights shall not be mounted any higher than 72 inches above the ground level.

f. Two amber strobe lights, Whelen model 800 (or equal), shall be installed on the centerbody section of the vehicle.

g. Emergency lights shall be controlled by a three position rocker switch, labeled; Off, Amber & Emergency.

h. In addition to the normal vehicle headlight system, two (2) high intensity, (Hella, or equal) Halogen driving type lights shall be mounted on the front bumper.

i. In addition to the normal vehicle headlights, two (2) high intensity, (Hella, or equal) Halogen fog lights shall be mounted below the front bumper.

j. There shall be a lighted license plate bracket mounted at the rear of the vehicle.

k. Along with the illumination provided in the engine compartment, illumination shall be provided in the compartments intended for storage of rescue equipment. This lighting shall come on automatically when the compartment door is opened. An indicator light shall be mounted in the cab to make the vehicle's operator aware that a compartment door is open.

l. The cab dome lights shall be selectable between red and/or white illumination.

m. Illumination shall be provided for all access steps and work areas on the vehicle.

n. Two (2) 12 Volt DC, halogen, combination spot/flood lights (minimum of 750,000 candlepower each) shall be mounted on the roof turret assembly. The light must move with the roof turret on the horizontal and vertical axis. The cab dash mounted switch for this light shall allow for the selection of either the spot or floodlight mode.

o. Four (Whelen) 12 volt powered halogen scene lights shall be mounted, two on each side of the vehicle to provide illumination of the work area adjacent to the vehicle. A switch operational from ground level shall be mounted on each side of the vehicle and to control the operation of the respective lights on that side.

p. 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 also 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.

1. The following lighting shall be powered by the on-board generator, low voltage switch controlled, for safety purposes, from the cab dash:

    a. Two (2) 1500-watt wide-angle floodlights mounted on extendable poles, one mounted on each side of the vehicle's center body.

    b. Two 650-watt wide-angle floodlights mounted at the front of the vehicle above the windshield.

2. Two (2) 120 VAC duplex receptacles with one straight blade and one twist lock, shall be mounted one on each side of the cab complete with weatherproof hinged covers.

3. 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 an upper compartment on the right side of the vehicle. 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.

40. POWER SUPPLIES.

In accordance with the -10C Advisory Circular plus the following:

a. A 12-volt electrical and starting system shall be supplied.

b. A high capacity alternator system shall be provided having a minimum total output of 300 amps, and capable of producing 160 amps at curb idle.

c. Due to the continuous charging load required by the radios, lanterns, etc., an on-board battery charger, Kussmaul model Auto 12DV, with a 12-amp output shall be installed on the vehicle.

d. The electrical connection for the required on-board electrical components (battery conditioner and the engine coolant preheater) shall be supplied in an automatic eject configuration, 115 VAC, 20 amp (Kussmaul or equal). The electrical inlet connection shall be mounted at the left side of the vehicle cab.

e. A bank of SAE group 31 batteries shall be provided with a minimum of 4500 CCA to assure dependable starting capability in severe heat and/or cold temperatures.

f. A maintenance master switch shall be mounted adjacent to the battery installation that will prevent the vehicle from being started from the cab during vehicle maintenance. This switch shall not interrupt the major power supply to the vehicle's starter.

g. A remote voltmeter shall be installed adjacent to the batteries. The voltmeter shall be energized by a switch so the condition of the batteries can be read.

41. STARTER.

A 12-volt starting device shall be provided.

42. WIRING.

In accordance with the -10C Advisory Circular.

43. RADIO INTERFERENCE.

In accordance with the -10C Advisory Circular.

Section 6. ENGINE AND ACCESSORIES

44. COOLING SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

a. To assist in rapid warming of the engine and transmission to the proper operating temperatures, the fan shall be equipped with a thermostatically controlled clutch or similar engagement device. The system shall be designed to engage the fan for continuous operation in case of failure to the thermostatic control.

b. The cooling system shall be equipped with a cooling system filter, with spin-on cartridge.

c. All the coolant and the heater hoses shall be made of a silicone material and secured with constant torque clamps.

45. EXHAUST SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

a. To decrease the noise levels inside and to the exterior of the vehicle, a muffler with a chrome 45 degree angled exhaust shall be provided.

46. FUEL SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

a. To minimize the possibility of losing a fuel prime to the ARFF vehicle's main engine, an electric in-line auxiliary fuel pump for the sole purpose of priming shall be provided. This priming pump shall operate automatically whenever the main engine is started and also have provisions to operate to re-prime the ARFF vehicle's primary engine's fuel system after replacement of the fuel filter(s).

b. A fuel/water separator with a thermostatically controlled heating element shall be provided.

47. GOVERNOR.

An electronically controlled engine governor which will not adversely affect engine or pump performance shall be provided and be set to limit engine speed so that it shall not exceed the maximum rpm recommended by the engine or driveline component manufacturers.

An engine high idle control shall be provided to maintain the engine idle at approximately 1200 RPM when activated. This control shall be safety interlocked to activate only after the transmission has been placed in the neutral position and parking brake has been set.

48. LUBRICATION.

In accordance with the -10C Advisory Circular.

49. POWER REQUIREMENT.

The vehicle shall be equipped with a turbo charged and after cooled diesel engine, equipped with an electronic fuel management system. The engine shall be an in-line six cylinder four stroke engine rated at a minimum of 650 BHP @ 2100 RPM. The engine shall have sufficient power to meet the new FAA -10C and NFPA-414 acceleration requirements of 0-50 mph in less than 25 seconds for a 3000-gallon vehicle. The engine shall also meet the new EPA emission standards dated January 1, 2001.

The engine shall be equipped with a remote engine oil drain kit.

50. WINTERIZATION -- OPTION.

A -40 degree winterization system is not required.

Section 7. AUTOMOTIVE PERFORMANCE

51. ACCELERATION.

In accordance with the –10C Advisory Circular the class 2 vehicle shall accelerate from 0-50 mph in less than 25 seconds.

52. BRAKE SYSTEM.

In accordance with the -10C Advisory Circular plus the following:

To supplement the conventional vehicle braking system, the engine shall be equipped with a (Jake Brake, or equal) engine braking system with ON/OFF and HI/Med/Low mode switch located in the cab dash.

53. DYNAMIC AND STATIC STABILITY.

The vehicle shall meet all stability requirements of the FAA -10C advisory circular, including the 30-degree side slope stability requirement.

54. ENVIRONMENTAL CONDITIONS.

In accordance with the -10C Advisory Circular.

55. GRADABILITY.

In accordance with the -10C Advisory Circular.

56. OPERATIONAL RANGE.

In accordance with the -10C Advisory Circular.

57. TOP SPEED.

In accordance with the -10C Advisory Circular.

58. OFF-ROAD HIGH MOBILITY SUSPENSION

A. The vehicle shall be equipped with an All-Wheel Independent Suspension to meet the desired ride quality and handling characteristics for an Off-Road High Mobility Vehicle as defined by item 58 in the advisory.

1. The independent suspension system shall be designed to provide maximum ride comfort and enhanced roll stability. The design shall allow the vehicle to travel at highway speeds over improved road surfaces, and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment. Each wheel shall have at least one coil spring and heavy duty dual acting shock absorber. In addition, each wheel end shall also have energy absorbing jounce and rebound bumpers to prevent bottoming and topping of the suspension. Each axle shall be equipped with an anti-roll bar for increased cornering stability.

59. DRIVERS ENHANCED VISION SYSTEM.

a. The vehicle shall be equipped with a "Forward Looking Infrared System". (Raytheon model 4000B, or equivalent) 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. A high-resolution monitor of 10” minimum size will be provided in the cab.

b. The Navigation and Tracking portion of the DEVS system is not required.

60. Through 69. RESERVED

Chapter 3. FIRE EXTINGUISHING SYSTEMS
Section 1. DRY CHEMICAL

70. Through 72

AGENT CONTAINER(S) AND COMPONENTS, DELIVERY PIPING AND VALVES AND PROPELLANT CONTAINERS AND COMPONENTS.

Note: The optional Dry Chem system is not required.

Section 2. HALOTRON I or an acceptable substitute

73. Through 75.

AGENT CONTAINER AND COMPONENTS, AGENT DELIVERY PIPING AND VALVES AND PROPELLANT CONTAINERS, AND COMPONENTS.

Per the FAA Advisory Circular (paragraphs 73-75) plus the following.

a. 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.

b. The handline for Halotron I shall be 150 ft. of one-inch type booster hose on a hose reel. The hose reel shall be equipped with a 12 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 left 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.

c. 1000 pounds of Halotron I, and a re-servicing kit shall be provided.

d. 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 crewmembers can easily determine the state of charge when the cylinders are in storage.

e. 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.

f. Remote LED bar graph type pressure gauges shall be provided in the cab to indicate system operating pressure and the propellant cylinder pressure.

Section 3. FOAM CONCENTRATE SYSTEM

76. CONCENTRATE PROPORTIONER.

In accordance with the -10C Advisory Circular, with the proportioner set for 3% AFFF foam concentrate. A second, orifice plate set for 6% AFFF foam shall be provided.

440 gallons of AFFF, 3% foam concentrate shall be provided, conforming to mil standard Mil-F-24385 shipped in five-gallon containers. The manufacturer of the foam supplied must be registered on the QPL listing.

77. CONCENTRATE RESERVOIR AND PIPING.

In accordance with the -10C Advisory Circular plus the following:

a. The foam reservoir shall be constructed of UV protected Polypropylene material, and shall be provided with a lifetime warranty.

b. A foam fill with a 1.50 NSFHT swivel female connection shall be provided on each side of the vehicle. This connection shall be furnished with chrome connections with rocker lugs including the plug/chain assembly. This connection can also be used as the drain as described in paragraph 77.b.6.

Section 4. WATER SYSTEM

78. PIPING, COUPLINGS, CONNECTIONS, AND VALVES.

A structural system, or 2.5” gated side discharges <u>are not required</u>.

79. WATER PUMPS AND PUMP DRIVE.

A water pump certified by the pump's manufacturer at a minimum discharge capacity capable of simultaneous discharge of the roof turret, bumper turret, and handlines as defined in the performance requirements of the FAA Circular 150/5220-10B, paragraph 79.c.1 & 127.e.2. The housing and the impeller of the water pump shall be made of bronze material.

80. WATER RESERVOIRS AND PIPING.

a. The water reservoir shall be constructed of UV protected Polypropylene material, and shall be provided with a lifetime warranty.

b. A 2.50-inch NSFHT female swivel fill connection equipped with a .25 inch strainer and a cap with a chain shall be mounted on each side of the vehicle. Each connection shall be equipped with a bleeder valve to bleed off air or water in the hose connected to it. This connection shall be furnished with chrome connections with rocker lugs including the plug/chain assembly.

a. A 4.00-inch NSFHT male fill connection equipped with a .25 inch strainer and a cap shall be provided on each side of the vehicle. Each connection shall be equipped with a bleeder valve to bleed off air or water in the hose connected to it.

b. A remote mounted water level gauge shall be provided on each side of the vehicle. The level gauges shall be the LED bar graph type.

Section 5. HANDLINES, REELS, AND COMPARTMENTS

81. HANDLINES.

The vehicle shall be supplied with two handlines for the discharge of foam/water as described below:

a. One pre-connected soft-jacketed handline for the discharge of foam/water shall be provided, on the left side of the vehicle, mounted in a lower side compartment. A slide out storage tray shall be equipped with 200 ft. of 1-3/4" soft jacket type hose and a variable pattern pistol grip nozzle. Flow of the handline shall be 125 gpm controlled at the compartment by a quarter turn ball valve.

b. A reeled handline shall be provided with 150 feet of 1.25” booster hose and a variable pattern pistol grip nozzle. The flow of the handline shall be a minimum of 95 gpm with the discharge being controlled prior to the nozzle by means at the compartment. This handline shall be so installed to provide deployment of the hose from the front of the vehicle. The hose reel shall be equipped with a 12 VDC electric rewind motor with manual rewind provisions. A tension device should be installed to prevent the unreeling of the hose. Roller guides shall be provided at the sides and bottom of the hose reel to assure ease of deployment when hose is taken off the reel.

82. HOSE AND REEL COMPARTMENTS.

In accordance with the -10C Advisory Circular, as applicable to the handline configurations listed in items 81a. and 81b. above.

Section 6. TURRETS, AND UNDERTRUCK NOZZLES

83. BUMPER TURRET.

A 300-gpm automatic oscillating bumper turret shall be provided. The bumper turret shall meet the performance standard of Table 3, performance Parameter 7. The joystick control shall be located in the cab within easy reach of the driver and a second crewmember. The range of the horizontal sweep when operating in the automatic oscillation mode shall be fixed at ninety degrees, forty-five degrees each side of center.

84. ROOF TURRET.

The primary turret shall be an electric remote joystick controlled type. It shall be of a single barrel configuration and designed to discharge foam or water at a dual rate of 375/750 gpm. The roof turret shall be the non-aspirating type, equipped with a nozzle designed to discharge a wide flat pattern when in the dispersed position. Necessary controls will be provided to permit the selection of the foam solution or water from inside the cab. The turret shall be aimed by a single, remote mounted electric joystick control. Roof turret discharge valve will be pneumatically assisted. Controls shall be located to allow vehicle and turret operation by a single operator. The turret shall have a discharge pattern, which is infinitely variable from a flat pattern to a solid stream of foam/water. The turret shall be optimized for AFFF with the resultant foam conforming to the properties specified in 1995 NFPA 414, Table 2-15.9.1. All foam patterns listed shall be at an operating pressure of 220 psi.

85. HIGH-REACH EXTENDIBLE TURRET.

Not Required.

86. UNDERTRUCK NOZZLES.

A minimum of three (3) undertruck nozzles shall be supplied that will provide a sufficient foam\water combined spray pattern that will cover the total undertruck area as well as the inner sides of the wheels and tires.

87. DUAL Agent turret--option.

Not required.

Section 7. AGENT SYSTEM PERFORMANCE

88. COMPLEMENTARY AGENT SYSTEM.

In accordance with the -10C Advisory Circular.

89. WATER/FOAM AGENT APPLICATORS.

In accordance with the -10C Advisory Circular.

90. through 99. Reserved.

Chapter 4. QUALITY ASSURANCE
Section 1. GENERAL CONSIDERATION

100 through 132.

The contractor is required to fully comply with all items regarding quality assurance, test and technical service and training as defined in items 100 through 132 of the FAA –10C Advisory Circular.

AUXILIARY EQUIPMENT Table A3-1

The following auxiliary equipment shall be supplied with the vehicle, in accordance with the –10C Advisory Circular:

2	Axe, rescue, large, non-wedge type with serrated edge, and 36-inch fiberglass handle; to include scabbard and pick head cover
2	Blanket, fire resistant, with a storage pouch
1	Chock set, Aluminum, 8 inch (total of 2)
1	Cutter, bolt 24 inch
1	Cutter, aircraft cable
1	Crowbar, pinch point, (60 in.)
1	Hammer, sledge, 8 lb.
1	Rope line, 5/8 inch, 100 foot, with 3-prong salvaging hook
1	Ladder, Little Giant 26 ft., mounted on the roof of the vehicle
2	Rechargeable flashlights mounted in the cab, Streamlight model SL-45.
1	Medical kit, first aid/first responder, minimum of 36 units
1	Pike pole, 12 ft, w/fiberglass handle
1	Rescue kit, Paratech Airgun 40 SC Kit, complete with spare air cylinder
1	Saw, powered rescue, Partner K 1250 14” Blade with field kit
1	Skin penetrator (piercing applicator), manual type, for water or foam application
1	Wrench, adjustable, 8 inch
3	Axe, hand, with sheath and insulated handle
1	Chisel, cold, one inch
1	Hacksaw, heavy duty, with six (6) spare blades
1	Hammer, 1-1/4 pound
1	Hammer, 4 pound
3	Harness cutting tools, V-blade knife with spare blades
1	Pliers, side cutting, 7 inch

1 Pliers, slip joint, 10 inch

3 Plug, fuel line (hardwood)

3 Plug, fuel line (neoprene)

1 Screwdriver set–three (3) Phillips and three (3) straight blade

1 Shears, sheet metal, straight cut

1 Bar, 36" wrecking, w/gooseneck

1 Wrench, vice grip, 10 inch (24.5 cm)

Additional tools and equipment required to meet local operational needs

1 Adjustable hydrant wrench w/bracket

2 2-1/2 in. spanner wrenches w/bracket

2 1 in. spanner wrenches w/bracket

1 Tool box, or canvas tool roll (for loose hand tools)

1 20 pound Purple-K fire extinguisher, with mounting bracket

1 15-pound Halotron I fire extinguisher, with mounting bracket

1 Portable 110 VAC, drum foam transfer pump, Sethco or equal, rated at a minimum discharge rate of 30 gpm with a 10-foot head. A switch to control the operation of the motor shall be installed on the pump within easy reach of the operator. A minimum of 8-foot section of hose with the necessary fittings to match the foam fill connection on the vehicle shall be provided.

2 MSA Firehawk Self Contained Breathing Apparatus, 3000 psi. To include four (4) spare bottles.

1 MSA Evolution 5200 Thermal Imaging Camera (PN 111032-2030)

4 Proximity Firefighting Suits; type and size to be specified at vehicle pre-construction conference.

1 Rescue Air Lift Cushions Set to be Paratech model (1) of 22-887106K System and (1) of 22-887104K System.

1 Binoculars to be Canon 15X50 IS (image stabilized) All Weather.

1 ELT Locator and Receiver to be Tracker Radio Model FTV468; to include training beacon.

1 Automatic External Defibrillator to be Zoll AED+Plus.

Warranties

As a minimum, the manufacturer shall provide warranties on the base vehicle and major components as stated below.

Base vehicle - One year
Engine - Five years
Transmission - Five years
Suspension System - Five years
Water Pump - Two years
Water/Foam Tank - Lifetime

On-site Training

At time of delivery the successful bidder shall provide a factory-trained technician, to perform the following:

Pre-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

The undersigned agrees to:

Deliver **F.O.B. to County of San Luis Obispo, San Luis Obispo County Regional Airport/San Luis Obispo Fire Department, 901 Airport Dr., San Luis Obispo CA 93401** the AIRCRAFT RESCUE AND FIREFIGHTING VEHICLE itemized below, and in accordance with Specifications attached. All equipment to be new and unused of the latest model year and all attachments shall be designated to be compatible with the model proposed. Equipment shall be delivered, serviced and ready to operate.

All equipment and accessories shall comply with the applicable State and Federal Codes, Regulations and Requirements.

Schedule I

1500 Gallon ARFF Vehicle and Auxiliary Equipment as specified

For the sum of: $_____

_____ Dollars

Bidders offering any form of pricing discount should explain the offer in detail on a separate attachment, to include the discount structure and affect on total vehicle sales price.

Discount offered: ___ No, ___Yes (See attachment)

AIRCRAFT RESCUE AND FIREFIGHTING VEHICLE

Make_____Model _____

Manufacturer _____

Delivery Date: _____

Warranty _____Terms _____

Officer Signature _____Corp Seal

Firm Name _____

Address _____

City, State, Zip _____

Telephone _____Fax _____

Federal Taxpayer ID#_____

□ Individual/Sole Proprietor □ Corporation □ Partnership □ Other

BIDS MUST BE RECEIVED BY 4:00 P.M., NOVEMBER 21, 2006 AND
WILL BE OPENED IN THE OFFICE OF GENERAL SERVICES
Bid #3409-06

Additive Alternate Number 1
Optional Factory Maintenance Training
Maintenance training shall be provided for one (1) individual of the purchaser's choice, at the factory facilities of the Bidder. The school shall be at least four (4) days in length, and extensively cover operation, logic and schematics of air, electrical and agent systems, troubleshooting, vehicle component construction, disassembly and repair (engine and automatic transmission tear-down not required). Bid price shall include airfare, tuition, books, meals and lodging.
For the sum of: $_____ _____ Dollars

Additive Alternate Number 2
Optional Factory Inspection Visit
A factory inspection of the completed vehicle shall be provided at no cost to the Airport. The inspection is to occur after construction and testing is completed but before shipping. Bid price shall include air-fare, meals and lodging for two (2) airport representatives.
For the sum of: $_____ _____ Dollars