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SUBJECT: MARINE FIREFIGHTING AND RESCUE VESSEL

BID #: XF-0374-22 **OPEN DATE: 07/01/2022**

GENERAL GOVERNMENT AWARDS COMMITTEE

KIND AND BASIS OF CONTRACT: ONE-TIME PURCHASE

AGENCY: FIRE/RESCUE

BASIS OF AWARD: ALL OR NONE, TO THE LOWEST RESPONSIVE, RESPONSIBLE BIDDER

NUMBER OF BIDS INVITED: 18 **NUMBER RECEIVED:** 1 **OTHER:** 1

SUMMARY OF BIDS AND RECOMMENDED ACTIONS:

Recommend approval of award to Metalcraft Marine US, Inc. as the lowest responsive, responsible bidder for Marine Firefighting and Rescue Vessel for the Jacksonville Fire and Rescue Department. Total estimated expenditure not to exceed $485,135.00.

Funding for this award to be encumbered by accounts:
11409.122003.564010.010357.00000000.00000.0000000 - $435,000.00
00111.121003.564290.000000.00000000.00000.0000000 - $50,135.00 - to be executed by Purchase Order release(s).

Attachments: Recommendation Memo, Tabulation Sheet, Specifications, Terms and Conditions

Analyst: _____ **RESPECTFULLY SUBMITTED:** _____
OLIVE WALLACE-COHEN GREGORY PEASE, CHIEF
PROCUREMENT DIVISION

CONCURRENCE BY: KEITH POWERS, DIRECTOR/FIRE CHIEF

(ALL AWARD ACTIONS SUBJECT TO LAWFULLY APPROPRIATED FUNDS)
ACTION OF GGAC COMMITTEE ON RECOMMENDATIONS ABOVE

MEMBERS APPROVING _____ MEMBERS DISAPPROVING _____ DATE: _____

_____ _____ OTHER: _____

_____ _____

_____ _____

ACTION OF AWARDING AUTHORITY DATE _____

APPROVED _____ DISAPPROVED _____

OTHER _____

SIGNATURE OF AUTHENTICATION _____

FIRE AND RESCUE DEPARTMENT

June 22, 2022

TO: Gregory Pease/Procurement Chief

FROM: Keith Powers, Director/Fire Chief

RE: **XF-0374-22 MARINE FIREFIGHTING AND RESCUE VESSEL**

We have reviewed the bid tabulation submitted for Bid XF-0374-22 Marine Firefighting and Rescue Vessel and recommend awarding the bid to Metalcraft Marine US, Inc.

Total Award: $485,135.00

Funding Code: 11409.122003.564010.010357.0.0.0 $435,000.00

Project: 010357

Organization: FREP Emergency Prep. Grants—Emergency and Disaster Recovery

Expenditure Account: 564010

Task: 1

Award: 11409-331236-2022 (75%)

11409-381910-2022 (25%)

Funding Code: 00111.121003.564290.0.0.0.0 $50,135.00

If you have any questions, please let me know.

GKP/tjh

TITLE: Marine Firefighting and Rescue Vessel

BID NO: XF-0374-22

OPEN DATE: 06/01/22

ANALYST: Olive Wallace-Cohen

NO. INVITED: (18) No. Received: (1) No Bids: (1)

RECORDED BY: MELISSA PIERCE

ANNOUNCER: CARMELIA SPITLER

ITEM #	DESCRIPTION	QTY	METAL CRAFT MARINE US. INC. PRICE	PRICE	PRICE	PRICE	PRICE
1	Marine Fire Fighting and Rescue Vessel as per bid specifications	1 EA	$ 485,135.00				
	GRAND TOTAL		**$ 485,135.00**				
	Insurance Acknowledgement						
	Federal Forms B through H		✓				
	Delivery		270 Days				
	Conflict of Interest:		✓				
	Addendums ( ):						

TERMS AND CONDITIONS
MARINE FIREFIGHTING AND RESCUE VESSEL

1. SCOPE

The City of Jacksonville's Fire and Rescue Department is currently accepting bids to obtain a source of supply for the items/services as outlined in the bid documents provided. The purpose of this bid invitation is to obtain information about your firm and its ability to provide these items/services and to obtain pricing commitments for **JFRD Marine Firefighting and Rescue Vessel** as listed in the bid documents.

All equivalent/alternative items must **MEET** **or** **EXCEED** the specifications. It is at the sole discretion of the Jacksonville Fire and Rescue to determine if the alternative or equivalent product meets or exceeds the specifications. **IF THIS DETAIL IS NOT PROVIDED, THE BID WILL BE CONSIDERED INCOMPLETE AND WILL NOT BE CONSIDERED.**

* Product must be new. Refurbished, Remanufactured, Rebuilt or Used parts are not acceptable.

2. AWARD

Award will be by **ALL or NONE** whichever is in the best interest of the City of Jacksonville, to the lowest responsive, responsible bidder. Bidders must bid on all items to be considered for all or none award. The City reserves the right to reject any or all bids. ALL awards are subject to the availability of funds.

- As per Section 126.114 of the City of Jacksonville Ordinance Code, preference will be given to a responsive and responsible vendor offering American manufactured, assembled, or produced goods, and who is within 5% of the lowest responsive and responsible bidder. To receive this preference, the bidder must complete the attached Buy American Preference Compliance Certificate and attach supporting documentation and/or evidence attesting that at least 51% offered in the bid response is manufactured, assembled or produced in the United States.
    - Bidder is not required to submit for the Buy American Preference. Bidders may quote items less than 51% American made but will not be eligible for the preference.
    - Restrictions and exemptions may apply. Please refer to Section 126.114 for specifics.

3. TERM OF AGREEMENT

One-Time Purchase

4. PRE-BID CONFERENCE

N/A

5. COMPLIANCE WITH SPECIFICATIONS

The bidder, by affixing their signature to the bid form submitted, agrees to provide the items/services in accordance with the bid documents provided. Bid only a single offering for each bid item. Multiple offerings, alternates (unless stated) and or stipulations may be cause for bid rejection. Bid only on forms provided herein unless otherwise stated. Bid submissions shall be in ink or typewritten. All corrections must be initialed.

6. STATE CONTRACTS

The City reserves the right to utilize contracts established by the State of Florida and or other governmental agencies for service(s) covered under this bid. The city reserves the right to cancel this contract in whole or in part for such service(s).

the bid specifications.

16. INSURANCE / INDEMNIFICATION

Each supplier shall maintain, for the entire term of this bid, current insurance coverage as stated in the bid documents. All insurance certificates shall list the City of Jacksonville as an additional insured. The awarded vendor will be required to submit the copy of insurance certificate within ten (10) days from date of receipt of award notice. Bid number should be listed on certificate.

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SPECIFICATION
MARINE FIREFIGHTING AND RESCUE VESSEL

All equivalent/alternative items must **MEET** or **EXCEED** the specifications. It is at the sole discretion of the Jacksonville Fire/Rescue to determine if the alternative or equivalent product meets or exceeds the specifications. **IF THIS DETAIL IS NOT PROVIDED, THE BID WILL BE CONSIDERED INCOMPLETE AND WILL NOT BE CONSIDERED.**

* Product must be new. Refurbished, Remanufactured, Rebuilt or Used parts are not acceptable.

I. SCOPE OF THE CONTRACT

The work performed under this contract shall consist of the complete design, construction, outfitting, testing, and delivery of one 32' 10" molded (36' 8" LOA) length aluminum Landing Craft vessel. Delivery is to be made to the Jacksonville Fire and Rescue Department, Florida. Construction of the vessel shall be in accordance with this specification and to the highest standards of marine construction. The vessel shall conform to all regulatory standards in effect at the time of construction.

1. The bidder shall provide all labor, engineering, equipment, materials, supplies, tools, transportation, storage, design, administration, and quality control for the construction of the vessel and successful completion of the project.
2. A qualified representative shall familiarize the purchaser in the operation, care, and maintenance of the vessel and bidder supplied equipment.
3. Contract shall include the delivery to the designated marina and include all paperwork required for registration.
4. Bidder must have a system in place to evaluate and accommodate appropriate and timely design suggestions or installations of purchaser supplied equipment. Such installation may be at additional cost, additional cost shall be agreed to by the parties. Builder will provide design change/addition criteria to purchaser.
5. Progress payments will be available after completion of the following delivery schedule benchmarks:
   - 20% after preconstruction conference at such time that the metal is onsite and construction has commenced
   - 20% at completion of metalwork construction
   - 20% at receipt of Engines and Rigging and install has commenced
   - Final payment of 40% at delivery and receipt of Manufacturers Statement of Origin and all documentation including pump test
6. Delivery of completed vessel must be no later than 270 calendar days from issuance of purchase order to vendor.

II. GENERAL DESCRIPTION

1. Bidder will provide a CBRNE positive pressure cabin marine aluminum, open ocean and inshore fireboat with rescue capabilities with 32'-33' molded length, shallow draft with a deep "V" bottom of 18-degree deadrise aft with new Twin Outboards with a minimum 350 HP four-stroke gas inline 6 cylinders, supercharged and weighing no more than 668 lbs. The engines shall be of the current calendar year (remanufactured will not be accepted). The vessel must be of proven design with a minimum of 5 years in service. The design must meet applicable NFPA 1925 requirements. The vessel will be a Type IV vessel and provide positive flotation if holed. Bidder to provide details and references of five similar vessels in service.

A. WATERWAY ACTIVITY

1. The fireboat will be harbored in Jacksonville, FL. It will respond in the waterways of the St. Johns River and its tributaries and out to the Ocean. It will be expected to be able to perform in shallow draft conditions. The fireboat will also be required to operate in tropical storm conditions with sustained winds up to 40 knots. The

fireboat is expected to operate in driving rain and dense fog and during all times of the day and night.

B. DIMENSIONS and PRINCIPAL CHARACTERISTICS

Length Overall	36' to 37'
Beam Overall	10'-11'
Air draft	11'-12'
Weight (Light)	16,000 - 20,000 pounds
Fuel Capacity	240 gallons
Top Speed	42 knots
Hull	18 Degree Dead Rise
Hull Warranty	10 Year Warranty

C. WORMANSHIP AND STANDARDS

1. All work is done to high quality marine construction standards. All welding will be in accordance with welding procedures approved by the American Bureau of Shipping, Rules for Building and Classing Aluminum Vessels. The hull construction shall be welded, all welds continuous inside and outside all seams. No rivets. All weld spatter, soot, and construction scars will be removed or faired. All sharp edges and corners are dressed to prevent hazards to personnel and equipment. The vessel will be constructed of **5083** series marine grade aluminum plate and 6000 series aluminum extrusions. No 6000 series aluminum shall not be used below deck as stiffeners against the hull skin to prevent corrosion.
2. All fastenings to/through the hull shall be aluminum or 316 series stainless steel. If stainless steel, they shall be isolated from aluminum. The utmost care must be taken to ensure that any chance of corrosion is eliminated. Each manufacturer is responsible to explain how they isolate stainless steel from aluminum.

III. CONSTRUCTION REQUIREMENTS

A. GENERAL

1. The bidder shall provide engineering services, for such time as may be necessary for the technical supervision of the assembly, testing and certification of the vessel. All cost for 6 members of JFRD for inspection including midpoint and final, testing, plan review, and approval shall be at the bidder's expense. The vessel shall be constructed in accordance with and comply with all applicable United States Coast Guard Rules and Regulations, Code of Federal Regulations 46, American Bureau and Yachting Council and American Bureau of Shipping.
2. All equipment shall be arranged so that it cannot be damaged by bilge water or within 12" of the bilge, connections shall be contained in NEMA boxes as required by applicable standards.
3. All parts of the vessel shall be constructed of materials appropriate for the environment in which the vessel will operate. Vessel will operate in a brackish/saltwater water environment.
4. The vessel shall be designed so that the various systems and parts are readily accessible for inspection, adjustment, maintenance, lubrication and repair. Placement of equipment whenever possible shall allow for its removal from the vessel without having to disturb permanently installed structural members, or equipment shall be situated to allow for in-place overhaul and repair.
5. Access and lightening holes shall be arranged clear of concentrated loads or areas of high stress.
6. Vessel shall have a field of vision from the helm suitable for safe navigation in all operating conditions and meet ABYC requirements.
7. Port and starboard lights shall be provided and shall be controlled by a switch panel.
8. Vessel shall be equipped with a wheelhouse and large foredeck. Cabin shall be enclosed and engineered for a three-person crew plus EMS providers/patients. Cabin shall have roof access by an exterior ladder with sufficient step size and grab rail.
9. All windows, construction openings, piping and doors to cabin shall be weather tight.
10. Vessel design shall maximize storage in all areas, including inside the gunnels, and in the cabin.

B. DRAFT REQUIREMENTS AND HULL CONFIGURATION

1. The fireboat draft will not exceed 28 inches in depth.
2. The hull design will be a deep "V" bottom with 18-degree deadrise aft and meets ISO 12217 stability requirements. Vessel stability must be met without using added stability such as a foam collar. A "D" shaped

rub rail shall be on the outside of the gunnel at deck level. The vessel shall have full length tangent chines to give a soft ride in rough water. Hull design shall be such as to reduce roll-out in high- speed turns to the maximum extent practical.

3. The vessel must be extremely stable so that heavy loading on one side will not· produce a large list.
4. While underway, the hull must be able to move spray and waves outboard giving a "dry' ride.
5. During initial takeoff acceleration, the ride should be flat and not upward, with a trim angle not to exceed.6 degrees. This should reduce wetted surfaces and give high top speeds and efficient cruising capabilities without putting excessive loads on engines.
6. Appropriate push knees with D rubber fendering will be incorporated into the bow design and not adversely impact visibility or appreciably affect performance.
7. Bow push knees shall face downward towards the water.
8. Bow push knees shall be formed into a mushroom shape, so they cover the aluminum brace allowing one to pen from an angle. Total length needs to be 41 ½ inches.
9. Push knees shall extend past the ramp when the ramp is in the down position to prevent hitting ramp when pinned.
10. Boat Shall maintain full buoyancy while in reverse

C. PILOTHOUSE

1. The pilothouse will be fully enclosed and fitted out with fixed window aft and 4 sliding windows on the cabin sides, fixed 2 windows forward and doors leading out to the rear deck and forward deck that can be closed and locked, protecting the crew from outside influences. Five fixed spotter windows, one each port, starboard and 3 front on cabin roof. All windows shall be constructed of safety glass. The pilothouse will be outfitted with a control console forward and to the starboard side. All vessel controls, gauges, breakers, electronics, etc. are installed in the control console within immediate reach of the helmsman. The cabin has good overhead clearance of 6' 10" minimum in the pilothouse. The configuration of the pilothouse should be configured with forward sliding windows to give the best visibility and ventilation as possible. The cabin shall have shock mitigating rubber flooring. The flooring shall be removable and be easily maintained.
2. Cabin windows shall provide 360-degree unobstructed visibility from the helm with the cabin door open or closed. Windows shall be tinted safety glass. All windows and aft cabin door shall be weather tight, waterproof, and locking. Rear & Forward cabin door shall have an integral stainless lockset, be fully insulated, and be fitted with dogs for vessel security. Front windshield shall not be tinted.
3. Cabin windshield shall be slanted forward bottom to top to reduce glare and better visibility. Roof spotter windows shall be mounted in the cabin roof for upper visibility as per the bidder's design. All windows shall be anodized aluminum frame of high quality.
4. The cabin shall be constructed, and sound insulated to provide a maximum internal cabin (dB) decibel rating of 85 db with the door and windows closed when operating at rated engine capacity in any weather condition. Adequate acoustic insulating of hull, cabin, pump space, and engine space to provide this maximum level of noise exposure is the responsibility of the Bidder.
5. The front windshields shall have windshield wipers, and a freshwater reservoir.
6. Front windshield shall have a defroster
7. There shall be hinged radar mast installed on the aft part of the cabin roof. The mast must be easily hinged and handled by one person in all weather conditions. The mast must be supported when inverted. Bidders to provide drawings. The following items must be able to be mounted on the mast or arch: radar scanner, other navigational lights, and flag halyard.
8. Floodlights will be such to fully light up a scene for 360 degrees, and light up the work deck.
9. The pilothouse will include a designated space for a work bench and storage under it.
10. Cabin shall have rubber stress matting throughout, to reduce crew stress. Matting must be removable and washable.
11. Vessel shall have a fully insulated interior. All cladding shall meet USCG fire rating requirements. Cladding shall be easily cleaned and maintained. Bidder shall supply sample and descriptive literature to detail the cladding they propose. Paneling should be easily removable and cleanable for craft maintenance.
12. Exposed interior aluminum shall be painted with light Grey Zolatone paint. The cabin shall have a white

exterior and hull side's red, paint finish with appropriate epoxy primers. The hull bottom will be an international paint system with epoxy primers and antifoul as per the paint manufacturer's specifications.

13. Helm seats shall have a minimum of 20 inches in width. Three suspension type seats with fore and aft sliders shall be provided. Armrest shall be operable. Mounting shall provide for area below seat to be used for storage.
14. Cabin shall provide at a minimum the following items: a hinged chart table between the 2 starboard seats. This shall be mounted aft of the helm seat. And ahead of the navigator's seat. There shall be an engineer's station/console to port of the helm with a third helm seat.
15. Cabin roof must be reinforced to support the weight of personnel without damaging the structure.
16. Non-skid type material on shall be installed on roof area
17. Cabin shall have multiple charging ports consisting of USB/12V/110
18. Cabin shall be both heated and cooled efficiently and quickly in all weather conditions/climates. Type of system shall be determined by JFRD and must be of a type which is easily serviceable locally in Jacksonville, Florida.

D. ELECTRONICS and NAVIGATION EQUIPMENT

The following marine electronic equipment shall be provided by the Bidder and installed by the boat builder:

- Icom 506 VHF radio with talk back feature with speaker. Bidder to install JFD Fire Radio (supplied by JFD)
- Depth sounder/Chart plotter -The Chart plotter will be installed with Chirp Chip.
- Marine electronics and side scan with a minimum of 800 Hertz
- Bow thruster
- 18xHD radar dome, integrated with GPS with electrical supply cable runs
- lightbar installed above cabin top.
- Epirb
- Emergency flashing LED lighting on all four sides of the Cabin at or above the roof line.
- Two Way Satellite Communication System utilizing using Pole to Pole coverage.

1. The bidder shall provide all required antennas.
2. Compass shall be Ritchie X-10, installed on dash.
3. Bidder shall arrange and install emergency lights on the cabin roof with bracket.

E. WORK DECK and EQUIPMENT

Deck area will be self-bailing and coated with a non-skid safety surface. The deck will have a large work area to facilitate dive operations, fire operations, rescue operations, and medical operations. The foredeck shall have a bow ramp 75" wide. The bow ramp shall be opened and closed by an electric motor with a simple manual override. Both the cable and the system shall be able to withstand corrosion from both salt and brackish waters and the parts must be readily available for maintenance.

There must be a small aft deck behind the house at foredeck level. The 1500 gpm pump/engine must be in front of cabin and recessed down into hull with a hinged box lid, to reduce the pump/engine box height.

1. A large tow post will be located on the stem for towing and will be attached to a structural member of the vessel.
2. Aluminum railings, minimum 1-1/2" will be used on the vessel for safety. The railing will extend around the forward half of the foredeck to the bow ramp on top of the gunnel. There shall be safety railing mounted on the cabin roof sides.
3. Option for Stokes Basket mount
4. The dive door will be located on the port side and shall be 30" in width. The cut out shall be as low as possible and located adjacent the pump/engine box. It will be used for boarding and retrieving people from the water.
5. A ladder utilizing bent¾" aluminum pipe welded to cabin sides just aft of aft window, to allow cabin top access. This ladder shall be of size to be utilized safely in all-weather conditions.
6. Courtesy lighting shall be provided for safety on both fore and aft decks.
7. Bow storage lockers shall be made under the side gunnels each side of the bow.
8. The forward, aft deck and the cabin decks shall be the same height. Decks and hatches shall be quick

draining, so hatches do not hold water.
9. The pump/engine hatch shall be weather-tight, drainage shall be provided to reduce collection of standing water. Hatches shall be provided with robust 316 Aluminum hinges to prevent movement during rough conditions.
10. Large Storage Box shall be provided on deck area 16 inches in height by 16 inches deep by 48 inches in length. (Location TBD by JFRD)
11. One (1) multi gas meter up to 6 gases, one (1) Personal Radiation Detection Kit, one (1) Biological Detection kit, one (1) Chemical Detection Kit, four (4) PFDS, four (4) Helmets, four (4) Throw bags, four (4) dock lines, four (4) bumpers shall be provided with the Vessel.

F. ELECTRICAL

1. Wiring shall be installed as per ABYC and United States Coast Guard Rules and Regulations as a minimum. The Bidder shall provide an electrical schematic in the manual package. The schematic shall be a one-line diagram, follow the electrical runs as installed in the vessel, and match the labeling of the wiring runs. This shall not be a generic drawing, but an exact diagram of the purchased vessel. Wiring shall be loomed, and all hull contact points shall have grommets, all wiring runs shall be properly supported with no chafe points. Wiring runs shall be concealed behind cabin walls, cladding, or decorative cable trays, etc. Exposed wiring will not be accepted. Wiring shall be isolated from the hull to prevent electrolysis.
2. Wiring runs shall have easy access through removable panels, cable trays. Bidders shall provide details of their standard wiring installation practice with their bids.
3. Navigation lighting will be provided by USCG regulations for vessels of this size and service and marine grade. Approved lights will be arranged to display the correct light signals for free running, anchoring.
4. Electrical breaker panels shall be DC panels with sufficient and properly sized breakers for electrical and electronic gear. Breaker panels shall provide four additional breakers as spares for future additions to the vessel. All breaker panels shall be Blue Sea backlit panels and have indicating lights for each breaker. A second panel shall be readily accessible to the helm and control the following items (other panels may be acceptable, but bidder will need prior approval before bidding alternate panels):

Pilothouse: (3) red/white interior lights
(1) Compass

Deck: (4) One each side, one bow, one stern
(2) LED courtesy lights
Anchor light
Navigation lights
Transom or stern light

5. All lighting is to be LED to reduce the amp draw and to reduce maintenance cost.
6. All DC power shall be controlled by a single master breaker.
7. Batteries shall be stored in a secure waterproof, properly vented, corrosion resistant battery boxes. Battery box shall be fully accessible. Battery cabling shall be #00 gauge at a minimum.
8. Vessel shall be provided with an appropriate marine four-way battery isolator switch mounted in the wheelhouse. Switch shall be mounted in an accessible area adjacent to the helm.
9. The vessel shall have minimum of two 12V DC power outlets. Three AC outlets will be mounted on the interior, locations to be determined.
10. Vessel shall be provided with a dimmer switch to control gauge and compass brightness during night operation.
11. Vessel will have a battery charger. All batteries shall be charged from engine. Switches shall have field disconnects to protect alternators.
12. Battery voltage monitoring shall be accomplished using a Blue Sea Systems digital three-bank voltmeter, to be connected to each battery.
13. Builder will perform an electrical load analysis to determine necessary generation needs for all installed electrical equipment and provide adequate generation capability. Vessel will be supplied with a marine gasoline powered generator of SKW or larger to power AC system. The generator and its cooling and exhaust systems

shall be mounted aft deck and shall be fully accessible. It shall have its own panel in the cabin with remote starting.

14. Generator raw water pick up must be in a location to allow it to be used while underway so it shall never lose prime.

15. Generator type shall be determined by JFRD and must be of a type which is easily serviceable locally in Jacksonville Florida

G. FENDERING and MOORING

1. A heavy duty 3" 'D' shaped rubber shall be fitted around the bow and sides of the vessel.
2. Six (6) Large cleats to be located (3 each side) port and starboard side and will be welded to the top of the gunwale.
3. A heavy welded aluminum bow eye will be affixed to the stem for trailering.
4. A heavy-duty push knee fender system shall be fitted to the bow. The push knee shall be fitted with D-rubber fendering.
5. A two (2) tiered 1 ¼" aluminum removable engine guard with rope guides for towing shall be installed around the propulsion engines.

H. PAINT, MARKINGS and PREPARATION

1. Paint system must be epoxy or polyurethane and must provide corrosion resistance from stray electrical current. Painted areas shall be sandblasted and prepared in accordance with the paint manufacture's specifications. Topcoats shall be free of runs and have a high gloss finish. Final paint dry film thickness shall be provided in accordance with paint manufacturer's instructions. The hull shall be painted red and the cabin white.
2. The interior exposed aluminum surfaces shall be painted with light grey Zolatone, the exterior of the cabin shall be painted white with appropriate epoxy primers and the bottom shall be antifouled.
3. The underwater portion of the hull will be coated with an epoxy bond coat and antifoul paint according to International Coating recommendations. Two coats bottom paint over three coats underwater primer.

IV. FIRE MAIN SYSTEM and DISCHARGE OUTLETS

A. FIREFIGHTING CAPABILITY

1. The fireboat will be able to pump at a minimum, 1500 gallons per minute at appropriate nozzle pressures. Higher GPM is desired. Water will be delivered to a minimum of three locations on the boat.
2. The 2000 GPM Elkhart 8394 brass hard-wired monitor will be operated electronically from inside the cabin at the firefighting control station for the roof mounted monitor. The firefighting control center shall provide complete control of the fire pump and associated automated equipment. The control center shall provide maximum visual observation of firefighting operations, while maintaining protection from smoke, heat, and weather. Piping shall not obstruct the vision of the operator or crew at any time.
3. Pump monitoring pressure gauges shall be provided and be adequate for the proper and safe operation of the pump. This shall include pump engine controls, discharge pressure gauge, oil pressure and temperature gauges. All controls and gauges shall be mounted at the firefighting console top port of the helm station.
4. The pump shall have 2 X 5" large diameter discharges on the foredeck, up on the gunnels. Piping shall be 4 or 5" as required schedule 40 aluminum pipe. All 3 discharges are to have individual shut-off valves.
5. Install an indicator that tells the operator what position the roof monitor is in.

B. HYDRANT OUTLETS

The fireboat will be able to deliver water to a shore side dock or vehicle supply. The shore side supply will be provided through a 5" Storz coupling with cap.

C. FIREFIGHTING PUMP SYSTEM

1. A single, dedicated gasoline marine engine shall be used to power a fixed firefighting system. Fuel shall be supplied by 1 fuel tank. The marine engine's horsepower must be able to drive a fire pump to deliver a minimum of 1500 GPM.
2. All components shall have design pressure ratings greater than the maximum pump discharge pressure.
3. The suction arrangement for the pump shall include a sea chest with a screened inlet, a valved outlet, and cleanout access from the working deck.
4. Open area of the screen shall be at least twice the cross-sectional area of the suction pipe.
5. The sea chest shall be provided with a back-flush system. The back-flush system may be air or water and shall have cathodic protection.
6. Piping shall be supported from the vessel structure to carry the load of the water-filled pipe plus a minimum of 50% overload supplied at the point of support.
7. Bracing shall be provided to resist nozzle reaction of discharge devices.
8. Easy access drains shall be provided to all portions of the discharge and distribution piping.
9. Vessel shall have a means of flushing the piping system with fresh water. 10.All piping shall be hydrostatically tested at 250 PSI for not less than one hour. 11.All pump controls and gauges shall be mounted at helm.
10. Engine must be a new marine engine.
11. Vessel shall be provided with manufacturer's standard engine gauge package with the following as a minimum: engine hours, tachometer, voltmeter, fuel, trim, coolant temp, oil pressure, engine temperature, and oil pressure.
12. Audible and visual warning devices for high engine temperature, and low oil pressure, convenient to the operator position shall be installed for each engine.
13. Bidder shall guarantee engines and transmissions, are installed in accordance with manufacturer's specifications and instructions. Bidder shall insure manufacturer certification of all installations.
14. All equipment shall be arranged so it cannot be damaged by bilge water.

V. PROPULSION DRIVE SYSTEM

1. The vessel shall be powered by Twin Outboard Inline 6 cylinder minimum of 350 HP engines. The outboards shall be new and of the current calendar year 4- stroke gas engines, not weighing more than 668 lbs. with gauge package (remanufactured shall not be accepted). Bidder shall provide and install engines and related accessories as per engine manufacturer's specifications for installation. Bidder shall meet steering manufacturer's specifications for installation and operation. A binnacle control shall control engine throttle and transmission gear.
2. The vessel will have a top speed of no less than 42 knots. This shall be reached with the vessel crewed with 4 members of the Department (each to be 220 pounds) and rescue and fire-fighting equipment.
3. Stainless steel, counter rotating props will be used with outboard engines. The engines with be surrounded by a heavy-duty aluminum 2 tier outboard guard, bolted to the vessel with towing guides. A raised section to prevent a tow line from sliding off will be installed on the bar outside of each engine.
4. Bow thrusters
5. The boat shall be required to reach plane at a minimum of 15 seconds and reach minimum top speed of 42 knots within 45 seconds. These requirements Shall be used to determine Horsepower Rating and Motor Manufacturer. The Motor manufacturer must also meet additional requirements of Warranty and Maintenance as set forth in this Bid Spec.

VI. FUEL TANKS

1. There will be either single or dual aluminum fuel tanks with a minimum capacity of 240 gallons of fuel. These tanks will be built and hydrostatically tested to the Safety Standards for Small Craft specifications. Fuel tanks will be suitably baffled, fitted with electric level gauges and isolated from the hull structure by neoprene or rubber padding. They will be strapped and supported by a support system. ,

2. Racor fuel filters.
3. Fuel gauge(s) at helm station.
4. The fuel tanks shall be secured in the Hull and protected by a watertight bulkhead.
5. Deck hatches shall be acoustically and thermally insulated.

VII. ALARM SYSTEMS

1. The vessel will be equipped with bilge high water alarm sensors for each hull compartment, and a high temperature fire detection sensor in the machinery space, all wired to panels at the control stations. These alarm circuits will activate visual and audible warning devices at the control station in the event of a dangerous condition.

VIII. CATHODIC PROTECTION DEVICES

1. Bidder will have the vessel equipped with a corrosion monitoring and control system. A multi-level meter will be installed in the console and connected to a reference anode to the hull.
2. The engines will be fitted with zinc anodes provided by the manufacturer.
3. Zinc hull anodes will be located wherever the boat builder sees fit to reduce corrosion due to electrolysis. Zinc mass shall be calculated as per ABYC requirements.

IX. BILGE PUMPS

1. The vessel will be equipped with two independent bilge pumps located in separate sections of the hull. The submersible pumps should have a minimum capacity of 2000 GPH each. Each pump will have an internal float switch and will be controlled by a toggle switch in the pilothouse. These toggle switches will allow for automatic or manual activation of the pumps. Each bilge pump shall have independent power feeds that are wired separate from the electric panel.

X. WARRANTIES

1. Hull and deck: minimum 10 years on materials and workmanship.
2. Engines and pump: full manufacturer's warranty.
3. Equipment: manufacturer's warranty.

XI. TRIALS

The fireboat must successfully complete the trials listed below:

1. Maneuverability in various sea conditions.
2. Acceleration and deceleration while underway.
3. Fire pump capabilities including master stream shape, GPM output and effect on the boat while monitor is flowing maximum capacity of pump.
4. Testing of all equipment on fireboat. The successful bidder shall make repairs, corrections, or re-designs, as appropriate, at no additional cost, if the boat fails the tests. The successful bidder will be responsible for transporting the boat back to the original place of manufacturer for any work or modifications needed after trials during the warranty period.
5. The successful bidder shall notify the purchasing agency at least two (2) weeks before the date set for the sea or machinery trials.

XII. MANUALS

Bidder shall provide two (2) copies of the vessels operating manuals (one copy must be electronic). Systems covered shall be navigation, main propulsion, pumps, electrical, lubrication, firefighting systems, communication.

XIII. Training

Bidder shall provide hands on training on the water at time of delivery in Jacksonville for a minimum of three (3) days. Bidder shall cover all training costs.