

**EXHIBIT A – SCOPE OF WORK/SERVICES**  
**19-0719 AIRBOAT & TRAILER FOR AQUATIC PLANT MANAGEMENT**  
**PURCHASE OF 18' AIRBOAT HULL, ENGINE, AND TRAILER**

The intent of this specification is to describe and establish construction requirements for a heavy-duty airboat to be used by Lake County as a workboat. The County intends to purchase one (1) hull/engine/trailer package meeting the listed specifications under this ITB. Each airboat shall be capable of transporting people in continuous operation through marshes during both high and low water conditions. These airboats are intended to be used in harsh service.

The airboats required and covered by these specifications shall be the manufacturer's latest basic production model and shall be equipped with all new standard equipment in accordance with the manufacturer's latest literature, a copy of which shall accompany the bid along with any and all specifications necessary to verify that the unit either meets or exceeds each and every of the following: complete hull, engine cage, rudders, controls, 450 horsepower (as verified by dynamometer testing: turbo-charged engines are NOT allowed) marine airboat engine with propeller (NOTE: The engine must meet all United States Environmental Protection Agency [EPA] emission standards in accordance with 40 CFR Part 1045 as verified by the most current Certificate of Conformity with the Clean Air Act). The airboat manufacturer shall be licensed and have been in the business of constructing airboats for a minimum of twelve (12) consecutive months and have constructed a minimum of thirty (30) airboats.

Item supplied shall include the following or it will not be accepted:

**GENERAL**

- A. The airboat shall be fully operational upon delivery.
- B. The airboat shall conform to all federal, state, and marine safety regulations.
- C. The airboat shall meet eligibility for State of Florida Marine Vessel Registration.
- D. The airboat shall be constructed in accordance with or exceed industry standards for this type of vessel. Reconditioned or used parts will not be accepted.
- E. Hull shall be constructed of Marine Grade Aluminum Alloy.

**COMMON SPECIFICATIONS FOR ALL BOATS**

**1) BOAT CONSTRUCTION**

- a) Eighteen-foot (18') Marine Grade Aluminum hull (one [1] piece bottom, no splicing of hull).
- b) Eight-foot (8') beam width.
- c) Minimum twenty-four-inch (24") gunwale height at mid-ship.
- d) Minimum twenty-two-inch (22") transom height with lip at top (splash guard) to extend back a minimum of ten inches (10').
- e) 0.190-inch 5086 Marine Grade Aluminum in bottom and transom.
- f) Seven (7), 2" x 2" x 1/4" aluminum T-bars on seven-inch (7') centers, entire length of hull.
- g) The bottom of boat shall have a full turn chine to aid in maneuverability.

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- h) All nuts, bolts, and screws shall be stainless steel, except in engine which that shall be Grade 8 steel where extra strength is needed.
- i) Foredeck to extend back a minimum of thirty-six inches (36") with a non-skid finish to be strengthened as necessary to adequately support two (2), 200-pound persons.
- j) Flush mounted aluminum waterproof door.
- k) Heavy-duty stainless-steel bow eye.
- l) Two (2), one-inch drain plug.
- m) Solid aluminum flooring on cargo area with washout room.
- n) Room to install 100-gallon spray tank between driver's seat and passenger.
- o) Two (2) water pickup boxes in the rear of the boat.

**2) POLYMER**

- a) Exterior hull bottom shall be fitted with black one-quarter inch (1/4") thick Ultra High Molecular Weight Polymer (one piece).
- b) Polymer shall extend the full width and length of the hull and shall be siliconized-crack resistant from within eight inches (8") of bow to stern section.
- c) Polymer sheet joints shall have a forty-five-degree (45o) angle overlap so that the forward section overlaps the aft section.
- d) Polymer shall be fastened to the hull utilizing stainless steel screws with countersunk heads tapped into the aluminum hull.
- e) Ends of the screws shall not extend more than one-sixteenth inch (1/16") above the floor of the hull.

**3) PROPELLER GUARD**

- a) Framework shall be constructed of one-inch (1").065 wall stainless steel tubing, covered with 12-gauge stainless steel welded wire two-inch by four-inch (2"x 4") mesh.
- b) Wire shall be welded to framing at all contact points.
- c) There shall be a minimum three-inch (3") clearance between the propeller guard, sides, and bottom of the hull.
- d) Propeller guard shall completely enclose the engine and propeller area.
- e) An engine safety guard shall be installed on front of propeller guard.
- f) Propeller guard shall have two (2) hinged full-size access doors with hydraulic shocks and latching devices for maintenance accessibility.
- g) The propeller guard shall be constructed so that it may be unbolted from operator seat stand to allow for removal and engine service.
- h) Stainless steel tabs shall be welded onto propeller guard for installation of steering cable w/ rubber coated stainless steel or aluminum clamps.
- i) Propeller guard shall have a flat plate (8" x 24"; 0.100" 10-gauge aluminum) welded to the top of the guard for radio antenna, stern navigation light, and flag mounting bracket. The plate shall be positioned so it is accessible from the driver's seat.
- j) Stainless steel expanded metal on sides of propeller guard up to 3rd J-bar.

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- k) One (1) set of LED flood lights shall be mounted inside and on port and starboard sides of propeller guard. Stern navigational light shall be mounted inside and centered at top of propeller guard.
- l) All stainless-steel construction.

#### **4) ENGINE STAND**

- a) Engine stand shall be constructed using one and one-quarter inch (1 1/4") by one and one-quarter inch (1/4"), .065 wall stainless steel tubing.
- b) Four (4) mounting points for engine, Prothane mounts (front) and Moog mounts (rear), or approved equivalents.
- c) All mounts shall be shock mounted to prevent vibration.
- d) Mounting brackets shall be incorporated into engine stand for fuel tank and dual battery rack.
- e) All stainless-steel construction

#### **5) STEERING**

- a) Heavy-duty three-eighth inch (3/8") Teleflex, or approved equivalent, cable steering with left hand directional control stick mounted to bottom of rudder.
- b) Steering cable shall be mounted and secured to the propeller guard using stainless steel hose clamps at fixed mounting points.
- c) Stainless steel steering bearing shall be one and three-sixteenth inch (1-3/16") I.D. Argutto, or approved equivalent.

#### **6) THROTTLE**

- a) Electronic throttle control per engine manufacturer's specifications.
- b) Pedal stop located for use with the operator's right foot.

#### **7) FUEL TANK**

- a) Constructed of one-eighth inch (0.125") 5052 Marine Grade Aluminum Alloy, minimum 40-gallon capacity with electric fuel sender.
- b) Fuel tank shall be mounted on rubber shock mounts to the hull under the engine stand.
- c) Fuel tank shall meet or exceed Coast Guard and Boating Industry Association (BIA) standards.
- d) Fuel tank filler neck shall be accessible from ground level.
- e) Fuel tank filler hose shall be placed so that the flow of fuel into the fuel tank bulkhead is not impeded.
- f) All fuel lines shall meet Coast Guard and BIA standards.
- g) All fuel openings (filler, vent) be located at least eighteen inches (18") above the tank.

#### **8) RUDDERS**

- a) Each rudder shall have three-eighth inch (3/8") diameter stainless steel rods and nylon bushings.

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- b) Rudders shall be connected to one another at the bottom with three-eighth inch (3/8") diameter stainless steel rods and nylon bushings.
- c) Steering cable attachment points to the rudder shall be located on the bottom of rudders.
- d) Rudders should have a field of turn of at least one-hundred thirty degrees (130o) and a maximum acute angle of the turning rudder of twenty-five degrees (25o).

#### 9) BILGE PUMP

- a) Two (2), auto/manual

#### 10) INSTRUMENTATION

- a) Instrumentation and control panel of aluminum box type construction with backing plate.
- b) Lighted oil temperature, water temperature, oil pressure, amp meter, hour meter, fuel gauge, and tachometer gauges shall be Auto-Meter Carbon Fiber Marine. Analog hour meter shall be mounted on the side of the control panel, so it may be visible from the ground.
- c) Kill switch, keyed ignition and three (3) two-position switches shall be installed and connected to navigation lights, LED flood lights, and bilge pumps.
- d) Control panel shall include two (1), 12-volt "cigarette lighter" style plugs.
- e) All switches shall be marine grade and labeled to function.
- f) Vinyl instrument panel cover.
- g) Black rubber booted toggle two-position and momentary-on switches.

#### 11) ELECTRICAL SYSTEM

- a) Twelve-volt (12v) system with dual batteries controlled by a marine battery selector switch capable of isolating individual batteries or utilizing both batteries at once.
- b) Seventy-amp (70A) marine application alternator. Unit shall be new (OEM) Original Equipment Manufacturer, or approved equivalent.
- c) All high current wires shall be minimum 10-gauge.
- d) Coast Guard approved navigation lights shall be installed and tested.
- e) All wiring shall be fuse protected and enclosed in convoluted high abrasive tubing.
- f) Two (2) maintenance-free marine batteries, minimum 650 marine cranking amps, including plastic battery boxes w/ tie-downs, shall be installed.
- g) Battery rack shall be mounted twelve-inches to fifteen- inches (12"-15") above the inside floor of the hull, at the front end of the engine stand.

#### 12) HARDWARE

- a) All hardware, including but not limited to nuts, bolts, washers, screws, rivets, hinges and hose clamps, shall be made of marine grade stainless steel. All fastening hardware shall be of nylon locknut type where applicable.

#### 13) ENGINE

- a) Minimum 450 horsepower (as verified by dynamometer testing: **turbo-charged engines are NOT allowed**) electronic ignition, electronic fuel injection marine airboat engine.

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Engine must meet or exceed applicable EPA emission requirements as specified in 40 CFR Part 1045 as verified by the most current Certificate of Conformity with the Clean Air Act (**Bidder must submit the Certificate of Conformity for the engine they intend to supply with their Bid to qualify responsive.**)

- b) Flywheel, JW heavy duty or approved equivalent.
- c) Engine fitted with an 2.3:1 belt drive reduction unit with an HPPD Plus belt, or approved equivalent.
- d) Engine to have electrical starter, electric fuel pump, and water separated spin-on canister type fuel filter.
- e) Engine is to be appropriately vented to prevent excessive crankcase pressure.

#### **14) EXHAUST SYSTEM**

- a) Three-inch (3") stainless steel headers.
- b) Exhaust system of stainless-steel flex pipe attached to propeller guard above the deck and vented to the rear of the hull via three-inch (3") stainless steel dump pipes.
- c) Two (2), Magnaflow offset stainless steel mufflers (model #14229) or approved equivalent, installed.

#### **15) WATER COOLING SYSTEM**

- a) Heavy-duty large aluminum radiator (31" x 25") with expanded metal radiator guard mounted to rear of radiator. Expanded metal shall be treated (e.g., wire-brushed) to remove any sharp edges.
- b) Radiator shall be mounted inside propeller guard behind rear seats and above the engine using rubber shock-mounts (with enough space to allow an engine cover to pass below) and have sufficient cooling capacity to maintain correct operating temperature under tropical conditions maximum engine load.
- c) All hoses shall be Marine Premium Grade quality, which meets or exceeds airboat industry standards.

#### **16) PROPELLER**

- a) New factory manufactured Sensenich composite three-blade (3) propeller, seventy-nine-inch (79") R series, or approved equivalent, of appropriate length, pitch, and weight to ensure maximum performance and engine life.
- b) Aluminum two-piece hub and aluminum cast faceplate shall be fastened with the appropriate number and grade of bolts per the manufacturer's specifications.

#### **17) TRAILER**

- a) Trailer shall be heavy-duty aluminum construction (minimum 4" frame channel with 3" cross bars) sized to fit a 15' X 8' airboat and designed to allow for launch and/or loading from dry ground.
- b) Trailer shall have tandem axles, each with minimum 3500-lb. load capacity, with super lube type spindles with built-in grease fittings. Springs should be rated to exceed weight of fully loaded and fueled boat plus weight of trailer frame.

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- c) Coupler shall be two-inch (2") diameter with minimum 5000-lb. gross load with two (2) safety chains (1/2" diameter with hooks), swivel type tongue jack with minimum 1800-lb. capacity. Tongue weight shall be 7-10% of total trailer/airboat weight and within safe operating parameters established by the Department of Transportation.
- d) Industry standard commercial ply-rated fourteen-inch (14") radial trailer tires with galvanized rims and hubs to support unit specifications.
- e) Bow stop with heavy-duty winch (including strap/cable and hook).
- f) All bunks shall be constructed of two-inch by six-inch (2" x 6") marine-treated wood with heavy-duty non-slip rails/rubberized plastic (not marine carpet). Trailer shall have left and right horizontal rear side guides that extend from the stern end of the trailer to the forward edge of the fenders (so boat cannot make direct contact with fenders when loading) and two (2) twelve-inch (12") rear roller ramps.
- g) Trailer shall be equipped with LED brake/signal/running and side marker lights.
- h) Trailer shall include heavy duty, stainless steel ratchet tie downs mounted directly on the rear of the trailer frame on both sides.
- i) Trailer shall meet all U.S. Department of Transportation, National Highway Traffic Safety Administration requirements and shall include capacity labels.

#### **18) SPECIAL INSTRUCTIONS**

- a) All components of boat shall conform to the requirements of marine quality and marine practice for the intended service of the boat as a County boat in continual harsh service.
- b) Airboat manufacturer warrants the basic hull and non-engine components of the boat to be free from defects in material and workmanship under state use and service for a period of 1 year (12 months) after delivery date. Airboat manufacturer warrants the engine and engine components to be free from defects in material and workmanship under state use and service for a period of 3 years (36 months) after the delivery date to include any replacement part(s) and associated repair at its factory or on-site at the County's location with on-site pick-up and delivery of the boat by the airboat manufacturer at the County's location.
- c) Upon delivery, airboat shall be accompanied by legal documents for State of Florida Registration. This includes an original invoice and Manufacturer's Certificate of Origin (MCO; signed and notarized). Boat weight shall be included on the MCO.
- d) Manufacturer shall provide an owners/operator's manual that includes break-in procedures, maintenance intervals, recommended part, and procedures for safe operation of all components.
- e) Airboat shall not porpoise (boat shall be setup as to not need a trim tab). A shim of appropriate size shall be used between the hull and polymer in addition to the lift design to prevent porpoising and need for a trim tab.

#### **BOAT-SPECIFIC SPECIFICATIONS**

##### **1) SEATING (FRONT SEAT OPERATION)**

- a) Operator "fat man" style seat shall be mounted centered.

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- b) Seats shall be covered with replaceable marine grade vinyl material and include matching weather resistant rain covers.
- c) Operator seat shall be constructed of three-quarter inch (3/4") and one-inch (1") .065 wall stainless steel tubing.
- d) Passenger pedestal/swivel mounted aft of front deck.
- e) Handholds shall be installed on bottom of each side of passenger seat and one (1) on driver's seat for safety.

#### **2) PAINT**

- a) Non-skid paint shall be applied to the front deck, and side walk-way surfaces.
- b) All non-aluminum and non-stainless steel, ferrous metal frame work shall be painted black powder coat.
- c) Paint shall be applied in compliance with manufacturer's recommendations.

#### **REPAIRS AND PARTS MANUALS TO BE PROVIDED**

The vendor shall supply the County with a minimum of two (2) comprehensive repair and parts manuals which identify the component parts, and which describe the appropriate process for repairing the equipment purchased by the County in conjunction with this solicitation. The manuals shall be supplied prior to, or upon, delivery of the equipment. Final payment shall be withheld until such time as these manuals are received by the County.

#### **DELIVERY**

Delivery shall be made within ninety (90) calendar days after the issuance of the purchase order. The vehicle shall be delivered to the Office of Fleet Management, 20423 Independence Boulevard, Groveland, Florida, 34736, with minimum of one (1) week advance notice to Keith Stevenson, Fleet Management Director, at (352) 742-3980. The delivery shall be FOB destination. Title to the vehicle shall not pass to the County until the unit has been delivered to the designated location and has been inspected and accepted by the Fleet Management Director or designee. The following items must be provided to the Office of Fleet Management with the vehicle upon delivery:

1. Invoice or Bill of Sale (price shall match the price on the County's Purchase Order);
2. Manufacturer's Certificate/Statement of Origin (MCO);
3. Application for Title (note: Lake County performs title processing);
4. Odometer Statement (if not on MCO);
5. Copy of County's Purchase Order;
6. Minimum two (2) copies of all available manuals (operator, parts, service, etc.)
7. Certificate of Conformity

**NOTE: Vendor's invoice shall not be submitted for payment until such a time that all above items are received by the Fleet Management Department.**

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