

BID #WG19-45 SPECIFICATIONS

Purchase of One (1) Chemical Injector System Upgrade to Mid-Tech TASC 6300 and Upgrade to Front Bumper Mounted/Extended Boom Radial Mount Spray Heads or Equal

GENERAL SPECIFICATIONS

These specifications shall be construed as minimum. All integral parts not specifically mentioned in the scope of these specifications that are necessary to provide a complete working unit shall be furnished.

Chemical Injector Upgrade and all accessories shall be completely mounted on truck ready for operation.

Award will be to the lowest responsible bidder meeting specifications. It is not the policy of the Baldwin County Commission to purchase on the basis of low bid only. Quality, conformity with specifications, purchase for which required, terms of delivery, finance package, resale value of equipment, and fast service and experience are among the factors that will be considered in determining the responsive bidder.

Bidder shall give a Lump Sum price as indicated on the Bid Response Form. The price shall include all applicable charges, Title Fees, rebates and any other similar cost and refunds on the unit. The purchase price shall not include extended warranty cost, these costs shall be stated separately as provided in these specifications.

The use of specific names and numbers in the specifications is not intended to restrict the bidder or any seller or manufacturer's, but is solely for the purpose of indicating the type, size and quality of equipment considered best adapted to Baldwin County.

BID RESPONSE FORM:

Each supplier should use the Response Form provided for their bid. **All warranties and exceptions are to be attached to the back of the Response Form.** The bid Guarantee should be attached to the front of the Response Form.

MANUALS:

Two (2) complete sets of operator and service and parts manuals are to be furnished for the injection upgrade. The manuals shall be received upon delivery of the equipment.

DELIVERY:

As soon as possible, but no more than **sixty (60) days**. Equipment will be delivered and picked up by the Baldwin County Highway Department at the vendor's specified location as listed in the Bid Response. Delivery shall be setup with Mr. Eric Scott at (251) 348-0135.

To be Mid-Tech TASC 6300 Chemical Injection Upgrade and Installation or Equal.

It is the intent of these specifications to describe a complete upgrade and operable chemical injection system for the controlled application of herbicides. The sprayer manufacturer or their local franchised dealer will install the system on the current roadside herbicide sprayer being used by Baldwin County.

Only new (unused) current standard production models built for the U.S. market will be considered acceptable. Printed literature and specifications describing equipment as offered must be included with proposal. Any recent changes and or features offered as standard or required for the intended use of the specified equipment will be supplied. All accessories required by these specifications shall be identical in quality and design to those normally supplied and installed for sale through regular commercial channels.

SPECIFICATION COMPLIANCE: Requires a manufacture (vendor) offering their standard production model to provide a list with a minimum of three customers currently using equipment as described in these specifications.

GENERAL DESCRIPTION: The basic chemical injection system shall include Mid Tech chemical injection pumps, calibration valves, DCM modules, boom valve regulators, and all necessary wiring and plumbing to make the unit functional. All components in the water and chemical systems must be non-corrosive type, compatible with chemicals currently used by Baldwin County.

1. COMPUTERIZED CHEMICAL INJECTION SYSTEM: THE COMPUTERIZED CONTROL SYSTEM SHALL BE A MID-TECH TASC 6300 OR EQUAL.

IT SHALL BE MOUNTED ON A SWIVEL DEVICE TO ALLOW OPERATION FROM EITHER THE DRIVER OR PASSENGER SIDE OF THE VEHICLE. IT SHALL AUTOMATICALLY CONTROL CHEMICAL OUTPUT RATES (BOOMLESS NUTATING HEADS, FLEXIBLE BOOM EXTENSION, OR HANDGUN) WITHIN A RANGE OF PLUS OR MINUS 2% OF THE PREPROGRAMMED RATES. IT SHALL RECEIVE SPEED AND DISTANCE INPUT FROM A GPS UNIT MOUNTED ON THE BEACON LIGHT BAR THE UNIT SHALL BE LOCATED A MINIMUM OF 18 INCHES FROM THE BEACON LIGHT. THE SYSTEM SHALL DISPLAY THE FOLLOWING DATA DURING NORMAL OPERATION: OPERATOR PROGRAMMED APPLICATION RATES FOR EACH INJECTION PUMP (IN OUNCES PER ACRE) WITH THE CAPABILITY OF INDIVIDUALLY INCREASING OR DECREASING THE RATES WHILE ON THE GO. VEHICLE ACTUAL AND SIMULATED TEST SPEED – UP TO 30 MPH DISTANCE TRAVELED IN FEET AND MILES TOTAL AREA SPRAYED IN ACRES AND THE WIDTH OF EACH SPRAY SECTION. IN THE CASE OF MALFUNCTION, THE COMPUTER SHALL DISPLAY THE FOLLOWING DEFAULT DIAGNOSTIC INFORMATION: THE NUMBER OF THE MALFUNCTIONING INJECTION PUMP THE CODE FOR COMPLETE PUMP FAILURE THE CODE FOR INJECTION PUMP RUNNING OUT OF PROGRAMMED RANGE.

2. **MATRIX SOFTWARE:** GPS MAPPING CAPABILITY MUST CONTAIN A MATRIX 570GS OR EQUAL. UNIT MUST CONTAIN A SECTION DRIVER MODULE TO READ INDIVIDUAL BOOM SECTION SWATH. IT SHALL CONTAIN A SEPARATE GPS ANTENNA WITH MAGNET BASE. THE MAPPING UNIT SHALL BE ABLE TO PROVIDE REPORTS INCLUDING THE FOLLOWING FORMATS, PDF FILE, KML, AND SHAPEFILE FORMAT. GPS UNIT SHALL BE MOUNTED WITH RAM MOUNT HARDWARE NEAR CONTROL CONSOLE PEDASTAL.
3. **CONTROL CONSOLE:** ALL ELECTRICAL FUNCTIONS CONTROLLABLE BY A SWITCH (WITH THE EXCEPTION OF CHEMICAL INJECTION OR GPS MAPPING) SHALL BE HOUSED IN A SINGLE METAL CONTROL CONSOLE. ALL ELECTRICAL CONNECTIONS SHALL BE WIRED INTO THE CONTROL CONSOLE THROUGH A SINGLE MULTI-PIN CONNECTOR.
THE CONTROL CONSOLE SHALL BE MOUNTED ON A SWIVEL MOUNT BETWEEN THE DRIVER AND PASSENGER OF THE TRUCK. THE CONSOLE SHALL BE NO GREATER IN SIZE THAN 10-INCHES BY 17-INCHES. IT SHALL CONTAIN ALL SWITCHES FOR DUAL SPRAY HEAD TILT AND RETRACTION, BEACON LIGHTS, WATER PUMP ON/OFF, CHEMICAL TANK INDICATORS, CHEMICAL TANK AGITATORS, AGITATION PUMP ON/OFF, AND ROTARY SWITCH FOR AUTO, B, C, AND HANDGUN. NO HARD WIRING TO THE CONSOLE SHALL BE ACCEPTED. ALL WIRING SHALL BE ADEQUATE TO SAFELY CARRY THE MAXIMUM AMPERAGE REQUIRED BY THE SYSTEM UNITS. ALL WIRING SHALL BE OF A STANDARD CODE AND COLOR FOR EACH MODEL UNIT. ALL WIRING SCHEMATICS SHALL BE IDENTICAL FROM VEHICLE TO VEHICLE. ALL FUSES SHALL BE CENTRALLY LOCATED IN THE CAB AND SHALL BE IDENTIFIED AS TO WHAT EACH FUSE CONTROLS.
4. **CALIBRATION:** THE COMPUTERIZED CHEMICAL INJECTION SYSTEM SHALL ALLOW SAFE AND EASY CALIBRATION BY THE OPERATOR. THE CHEMICAL INJECTION PUMPS SHALL HAVE A CALIBRATION KIT FOR EACH ONE TO ALLOW FOR THESE TASKS. THE OPERATOR SHALL BE ABLE TO CALIBRATE EACH INJECTION PUMP FOR THE INTENDED RATE PER ACRE PRIOR TO SPRAYING ANY WATER OR USING ANY CHEMICAL.
5. **PLUMBING AND FILTERS:** ALL HOSES (EXCEPT WHERE STATED) SHALL BE OF 150 PSI OPERATING PRESSURE. ALL PLUMBING AND FILTERS SHALL BE OF BRASS OR EQUIVALENT AND BE SIZED AND PLACED TO COMPLETE THE OPERATION OF THE UNIT. PLACEMENT OF PLUMBING AND FILTERS SHALL ALLOW EASY ACCESS FOR CLEANING AND REPAIRS.
6. **FITTINGS:** ALL FITTINGS SHALL BE BRASS OR STAINLESS STEEL. NO GALVANIZED, NYLON OR BLACK FITTINGS SHALL BE ACCEPTABLE. ALL NOZZLES SHALL BE STAINLESS STEEL OR BRASS AND MACHINED TO PROVIDE THE VARIOUS SPRAY PATTERNS AS REQUIRED TO DISTRIBUTE THE SPRAY SOLUTIONS IN THE MOST EFFICIENT AND SAFE MANNER POSSIBLE.
7. **BOOMLESS RADIAL MOUNT SPRAY HEADS:** THE UNIT SHALL BE EQUIPPED WITH TWO (2)

BOOMLESS SPRAY HEADS MOUNTED ON THE FRONT BUMPER OF THE TRUCK. EACH SPRAY HEAD SHALL CONSIST OF TWO FIXED POSITION RADIAL NOZZLE MOUNTS DESIGNED TO INDEPENDENTLY PERFORM ROADSIDE TURF AND/OR BRUSH APPLICATIONS. EACH RADIAL MOUNT SHALL RUN INDEPENDENTLY OF THE OTHER TO PERFORM THE TWO SEPARATE FUNCTIONS. THE TURF MOUNT SHALL HAVE A MINIMUM OF FIVE (5) INDIVIDUAL BOOM SECTIONS WITH NO LESS THAN FOURTEEN (14) NOZZLES LOCATED IN A FIXED POSITION, ALONG A RADIAL ARC, SUPPLYING A SPRAY SWATH OF 30' AT 11 MPH TO ENSURE A STREAK FREE SWATH THAT DOES NOT ALTER DUE TO WEAR. SWATH WIDTHS OF 6', 6', 6', 6', AND 6' WILL BE ACHIEVED WITH A COMBINATION OF FLAT FAN AND STRAIGHT STREAM NOZZLES. FLAT FAN NOZZLES MUST BE ATTACHED TO BRASS OR STAINLESS STEEL (POLY OR PLASTIC WILL NOT BE ACCEPTED) AIR INJECTORS TO PROVIDE LARGE DROPLETS AND REDUCE DRIFT. FLAT FAN NOZZLES SHALL POPULATE ONLY THE FIRST TWO BANKS; THE LAST THREE BANKS SHALL BE POPULATED WITH SOLID STREAM NOZZLES. THE BRUSH MOUNT SHALL HAVE A MINIMUM OF FOUR (4) INDIVIDUAL BOOM SECTIONS WITH NO LESS THAN FIFTEEN (15) NOZZLES LOCATED IN A FIXED POSITION, ALONG THE RADIAL MOUNT, SUPPLYING A VERTICAL SPRAY SWATH OF EIGHTEEN FEET (18') AT 11 MPH TO ENSURE A STREAK FREE SWATH THAT DOES NOT ALTER DUE TO WEAR. VERTICAL SWATH WIDTHS START A TEN (10') FEET FROM THE OUTSIDE OF THE FRONT TIRE. SWATH WIDTHS OF 54", 54", 54", AND 54" WILL BE ACHIEVED USING STRAIGHT STREAM NOZZLES. BOTH MOUNTS SHALL BE UP/DOWN TILT ABLE AND IN/OUT RETRACTABLE (FROM THE CAB) FOR EMBANKMENT SPRAYING. A LIQUID PRESSURE GAUGE SHALL BE MOUNTED IN VIEW OF THE OPERATOR TO INSURE EASY MONITORING OF THE SYSTEM. THE SPRAY HEAD PEDESTALS SHALL BE MOUNTED ON AN ADJUSTABLE BRAKE SOCKET TO AVOID DAMAGE TO THE SPRAY HEAD IF CONTACTED BY AN OBSTRUCTION. A TEEJET TYPE 4202 OR EQUIVALENT WILL BE INSTALLED ON EACH PEDESTAL FOR CURB, GUTTER, AND GUARD RAIL SPRAYING.

8. **PUMPS AND IMPELLER:** EXISTING PUMPS WILL BE INSPECTED AND SERVICED TO INSURE THEY ARE WORKING PROPERLY. ALL IMPELLER WILL BE REBUILT OR REPLACED.
9. **SMALL PARTS KIT:** EACH SPRAYER UNIT SHALL INCLUDE THE FOLLOWING ITEMS STORED IN THE TOOL BOX:
 - LARGE FILTER SCREEN AND O RING (1 EA.)
 - SMALL FILTER SCREEN AND O RING (1 EA.)
 - LARGE TUBE LUBE FOR INJECTION HOSE (1 EA.)
 - TIP PRESSURE SETTING TOOL (1 EA.)
 - CALIBRATION JAR (1 EA.)
 - EXTRA SET OF INJECTION HOSES (3/16", 1/4", 3/8", 1/2") (1 EA.)
 - QUICK FILL INSTALLED AND SECURED WITH 2" x 25' FIRE HOSE STINGER HOSE, PROBE HOSE, CHEMICAL PROBE & MICRO-MATIC VALVE SPRAY GUN, FILTER SOCK & FLAGS

10. TRAINING: THE SUPPLIER SHALL PROVIDE 8 HOURS OF OPERATOR TRAINING SESSIONS PER TRUCK UNIT. THE TRAINING SHALL COVER THE OPERATION OF THE SYSTEM

11. WARRANTY: MINIMUM 12 MONTHS ON TOTAL UNIT. WARRANTY REPAIRS TO BE MADE AT USER LOCATION OR VENDOR WILL ARRANGE TO PICKUP AND RETURN UNIT.

OPTIONAL ITEM UPGRADES:

12. EXTENDED SPRAY BOOM: THE EXTENDED SPRAY BOOM MUST BE CAPABLE OF PRODUCING A 50-FT. MINIMUM SPRAY SWATH WHEN USED IN CONJUNCTION WITH DOCUMENT PHASE DOCUMENT DESCRIPTION PAGE 15 180000000285 FINAL MA-HERBICIDE SPRAYERS OF 22 THE BUMPER MOUNTED BOOMLESS SPRAY HEAD. THE SPRAY BOOM MUST BE 19-FT. LONG MINIMUM WHEN FULLY EXTENDED. THE PIVOT POINTS AND ASSOCIATED LINKAGE ON THE BOOM SECTIONS MUST INCLUDE ROTARY PINS AND BRONZE BUSHINGS. THE MAIN BOOM WILL BE 4-IN. MINIMUM, SQUARE STEEL TUBING ATTACHED TO A HEAVY-DUTY, FREESTANDING, TURRET AND PEDESTAL. UNLESS OTHERWISE STATED, THE PEDESTAL MUST BE MOUNTED ON THE RIGHT SIDE, OF THE FLAT BED DECK DIRECTLY BEHIND THE CAB SHIELD WITH THE SAME BASE AND MOUNTING BRACKETS ON THE LEFT SIDE. THE PEDESTAL AND ENTIRE BOOM ASSEMBLY MUST BE TRANSFERABLE TO THE LEFT SIDE OF THE FLAT BED DECK DIRECTLY BEHIND THE CAB. THE BOOM SHALL BE ABLE TO PERFORM THE EXACT SAME FUNCTIONS, WHETHER MOUNTED ON THE RIGHT OR LEFT SIDE OF THE FLAT BED. D-RINGS SHALL BE WELDED TO THE BOOM TO AID IN THE TRANSFER OF THE BOOM FROM RIGHT TO LEFT SIDE. ALL HYDRAULIC LINES AND SPRAYER HOSES SHALL BE MOUNTED IN A WAY THAT THEY DO NOT HAVE TO BE DISCONNECTED TO PERFORM THE TRANSFER OF BOOM FROM THE RIGHT TO LEFT SIDE OF THE TRUCK. THE BOOM TURRET WILL ROTATE IN TWO SEALED, HEAVY DUTY, TAPERED, ROLLER BEARINGS AND INCLUDE AN INTEGRAL FRICTION CLUTCH TYPE BREAKAWAY. THE OVERRIDE RESISTANCE FOR THE CLUTCH MUST BE ADJUSTABLE AND ALL COMPONENTS EASILY REPLACEABLE. THE TRANSPORT POSITION FOR THE BOOM MUST BE BELOW THE TOP OF THE WATER TANK, PARREL WITH THE SIDE OF THE FLATBED, AND INSIDE THE WIDTH OF THE BED. A DECK MOUNTED STANCHION WITH PADDED CRADLE WILL BE PROVIDED, ON EACH SIDE OF THE BED TO CARRY THE BOOM FOR TRANSPORTATION AND WHEN SPRAYING WITH THE BUMPER MOUNTED SPRAY HEAD ONLY. THE HORIZONTAL SWING FOR THE MAIN BOOM MUST BE A MINIMUM OF 100 DEGREES FROM STORAGE POSITION TO OPERATE POSITION AND 75 DEGREES DOWN FROM THE FULLY RAISED POSITION. THE STICK BOOM SECTION (OUTSIDE BOOM) MUST BE CONSTRUCTED FROM 3-IN. SQUARE STEEL TUBING. LIFTING, LOWERING OR ROTATING EACH BOOM SECTION MUST BE ACCOMPLISHED WITH DIRECTMOUNT, DOUBLE ACTING, HYDRAULIC CYLINDERS. THE STICK BOOM WILL ROTATE HYDRAULICALLY A MINIMUM OF 180 DEGREES FROM THE STOWAGE POSITION (PARALLEL TO THE UNDERSIDE OF THE MAIN BOOM) TO A FULL EXTENSION. A BOOMLESS SPRAY HEAD WILL BE SECURELY ATTACHED TO THE OUTSIDE END OF THE STICK BOOM. THE SPRAY HEAD WILL HAVE THREE (3) INDIVIDUAL BOOM SECTIONS AND MUST

HAVE A MINIMUM OF SIXTEEN (16) FIXED POSITION, STRAIGHT STREAM NOZZLES, LOCATED ON A RADIAL ARC, DESIGNED TO ENSURE PROPER UNIFORM COVERAGE THAT DOES NOT ALTER DUE TO WEAR. THE BOOMLESS SPRAY HEAD MUST COVER A MINIMUM TWENTY-SIX-FOOT (26') SWATH AND FIFTY (50') SWATH MINIMUM WHEN OPERATED IN CONJUNCTION WITH THE BUMPER MOUNTED BOOMLESS SPRAY HEAD. THE 3 SECTION BOOMLESS SPRAY HEAD WILL BE SUPPLIED WITH A ONE (1") WATER LINE, PLUMBED INTO A BRASS OR STAINLESS-STEEL MANIFOLD. A 3-SECTION ELECTRIC VALVE MANIFOLD WITH PRESSURE REGULATORS SHALL BE MOUNTED INSIDE THE HEAD AND WILL BE USED TO CONTROL THE RATE AND DIRECTION OF SUPPLY TO THE INDIVIDUAL BOOM SECTIONS. THE SPRAY HEAD MUST HAVE AN ELECTRIC ACTUATOR THAT PROVIDES A MINIMUM OF 25-DEGREES OF UP/DOWN TILT. HEAVY-DUTY SIDE PANELS WILL PROTECT THE SPRAY HEAD COMPONENTS FROM CONTACT WITH ROAD SIDE OBSTRUCTIONS. NOTE: ARTICULATED SPRAY BOOMS UTILIZING SPROCKETS, CHAIN, CABLE, SHEAVES OR GEARS WILL NOT BE ACCEPTABLE. THE BOOM HYDRAULIC SYSTEM WILL BE SUPPLIED VIA THE UNITS EXISTING CLOSED CENTER PTO HYDRAULIC PUMP. THE OPERATING VALVES FOR THE SPRAY BOOM WILL BE ELECTRO-HYDRAULIC CARTIDGE STYLE IN A SINGLE MANIFOLD. THE MANIFOLD MUST INCLUDE COUNTER BALANCE VALVES FOR BOOM AND STICK LIFT CYLINDERS, AN ADJUSTABLE MAIN RELIEF VALVE, AND ADJUSTABLE HIGH/LOW SPEED (FLOW) CONTROL. THE VALVES WILL BE REMOTELY OPERATED WITH A SINGLE WIRELESS REMOTE UNIT FROM INSIDE OR OUTSIDE OF THE CAB. THE REMOTE MUST PERFORM THE FOLLOWING FUNCTIONS: POWER ON/OFF, WATER ON/OFF, ROTATE IN/OUT, BOOM UP/DOWN, BOOM STICK IN/OUT, HEAD UP/DOWN, & STATUS INDICATOR.

13. HYDRAULIC DRIVEN UPGRADE:

HYDRAULIC DRIVEN SPRAY PUMP SYSTEMS: THE MAIN SYSTEM SHALL HAVE A HYDRAULIC DRIVEN CENTRIFUGAL PUMP (MODEL FMC-150-206 ACE OR EQUIVALENT) POWERED BY A PRESSURE AND FLOW COMPENSATED LOAD SENSING HYDRAULIC SYSTEM. THE SYSTEM WILL BE SIZED TO DRIVE THE WATER PUMP AND OPTIONAL ARTICULATED SPRAY BOOM SYSTEM IN EXCESS OF THE REQUIRED FLOWS AND PRESSURES WHEN THE CHASSIS ENGINE IS OPERATED AT 1000 RPM. THE HYDRAULIC PUMP MUST BE A VARIABLE DISPLACEMENT PISTON TYPE, DRIVEN "LIVE" FROM CHASSIS TRANSMISSION POWER TAKE OFF. THE ON/OFF CONTROL SWITCHES FOR THE WATER PUMP WILL BE LOCATED IN THE CAB CONTROL CENTER. THE SPEED CONTROL FOR EACH PUMP WILL BE A MANUALLY ADJUSTABLE FLOW CONTROL VALVE INSTALLED BETWEEN THE HYDRAULIC PUMP AND THE WATER PUMP DRIVE MOTOR. A 2.5 INCH LIQUID FILLED WATER PUMP PRESSURE GAUGE MUST BE INSTALLED AT A LOCATION THAT CAN BE EASILY VIEWED WHEN ADJUSTING THE WATER PUMP SPEED CONTROL. THE HYDRAULIC RESERVOIR WILL HAVE A MINIMUM CAPACITY OF 30 GALLONS AND INCLUDE A SUCTION STRAINER, RETURN FILTER, SIGHT GAUGE, FILLER BREATHER, AND CUTOFF BALL VALVES IN

THE RETURN AND SUCTION LINES. MOUNTING LOCATION FOR THE RESERVOIR WILL BE BELOW THE CHASSIS BED IN AN AREA THAT ALLOWS EASY ACCESS. ONE PUMP SHALL BE EQUIPPED WITH A STAINLESS-STEEL MIXING MANIFOLD TO ALLOW CHEMICALS TO BE THOROUGHLY MIXED WHEN THEY ARE INJECTED IN THE MAIN FLOW PRIOR TO DISCHARGE. THE MIXING MANIFOLD SHALL HAVE TWO (2) 0.5 INCH CHECK VALVES TO PREVENT BACK FLOW FROM THE MAIN TANK TO THE CHEMICAL TANKS. THE PUMPING SYSTEM SHALL BE DROPWELL MOUNTED UNDER THE TRUCK BED.

BID #WG19-45 RESPONSE FORM

Purchase of One (1) Chemical Injector System Upgrade to Mid-Tech TASC 6300 and Upgrade to Front Bumper Mounted/Extended Boom Radial Mount Spray Heads or Equal

Date: _____

Out of State _____ or _____ If yes, _____
Yes No Registration Number

Company Name: _____

Address: _____

Company Rep _____

(Rep. Name Typed or Printed)

Position: _____

Phone: _____

Fax: _____

Email: _____

Financing through another agency beside yourself _____ or _____
Yes No

If yes, must attach a copy of the financing agreement and all conditions to this response form.

Financing Agency Authorized Signature

Make/Model: _____

Amount Bid: \$ _____

Delivery time: _____ days

Brochures showing the equipment offered shall be attached to this Response Form.

ALL EXCEPTIONS MUST BE LISTED AND ATTACHED TO BACK OF THE RESPONSE FORM.