

DEPARTMENTAL INPUT
CONTRACT/PROJECT MEASURE ANALYSIS AND RECOMMENDATION

New OTR Sole Source Bid Waiver Emergency Previous Contract's: Not Applicable
Contract Re-Bid Other

LIVING WAGE APPLIES: NO

Requisition No./Project No.: RQPW1400007 TERM OF CONTRACT: 1 Year

Requisition /Project Title: Compressed Natural Gas (CNG) Truck Tractors

Description: The purpose of this solicitation is to establish a contract for the purchase of ten (10) Compressed Natural Gas (CNG) truck tractors to be used to haul refuse transfer trailers by the Miami-Dade County Department of Public Works and Waste Management (PWWM).

Issuing Departments and Funding Sources:

User Dept.	Funding Source
PWWM	Proprietary Funds

Contact Person: Ana M. Rioseco Phone: 305-375-4425 Estimate Cost: \$1,800,000.00

ANALYSIS

Commodity Codes: 070 AUTOMOTIVE VEHICLES AND RELATED

Check here if this is a new contract/purchase with no previous history.

	<u>EXISTING</u>	<u>EXISTING</u>	<u>EXISTING</u>
Contractor:			
Small Business Enterprise:			
Contract Value:			
Comments:			

Continued on another page (s):

RECOMMENDATIONS

SBE	Set-aside	Sub-contractor goal	Bid preference	Selection factor

Basis of recommendation:

[Redacted area]

Signed: Ana M. Rioseco

Date sent to SBD: 09/15/2014

Date returned to DPM: [Redacted area]

RECEIVED
DEPT. BUSINESS DEV.
2014 SEP 12 PM 4:2

SECTION 2 - SPECIAL TERMS AND CONDITIONS

2.1 PURPOSE

The purpose of this solicitation is to establish a contract for the purchase of ten (10) Compressed Natural Gas (CNG) truck tractors to be used to haul refuse transfer trailers by the Miami-Dade County Department of Public Works and Waste Management (PWWM).

2.2 TERM OF CONTRACT

This contract shall commence on the first calendar day of the month succeeding approval of the contract by the Board of County Commissioners, or designee, unless otherwise stipulated in the blanket purchase order issued by the Internal Services Department, Procurement Management Services Division (ISD/PMS); and contingent upon the completion and submittal of all required bid documents. The contract shall expire on the last day of the last month of the one-year period.

2.3 METHOD OF AWARD

Award of this contract will be made to the responsive and responsible Bidder who submits the lowest price for the item listed in this solicitation, and which meets the minimum requirements below:

2.3.1 Minimum Requirements:

- a. Bids will not be accepted from sources other than the vehicle's manufacturer or fabricator, or a licensed dealer thereof. The Bidder must provide authenticating documentation of its status
- b. If the Bidder is the equipment's manufacturer or fabricator, an approved service facility capable of performing warranty repairs and supplying needed parts must be located in Miami-Dade or Broward County. There must be a service facility capable of supporting the proposed sale and of performing warranty repairs and supplying needed parts located in Miami-Dade or Broward County. The service facility may be subject to the County's review and approval.
- c. In accordance with Chapter 320 of the Florida Statutes, SS320.27, Bidders submitting a bid in conjunction with this solicitation must be licensed by the state of Florida as motor vehicle dealers. Bidders should furnish a copy of their license with their bid submittal. The Bidder may be given the opportunity to submit a copy of the license to the County, within the specified timeframe, during the bid evaluation period.

Bidders shall provide copies of requested documents with their bid. However, the County reserves the right to request such documentation during the evaluation period. Failure to meet these requirements may result the bid being deemed non-responsive.

2.4 PRICES

If the Bidder is awarded a contract under this solicitation, the prices proposed by the Bidder shall remain fixed and firm during the term of contract.

2.5 METHOD OF PAYMENT INVOICE FOR SINGLE DELIVERY

The awarded Bidder shall submit an invoice to the County user department that requested the items through a purchase order. The date of the invoice shall not exceed thirty (30) calendar days from the delivery of the CNG truck tractors. Under no circumstances shall the invoice be submitted to the County in advance of the delivery and acceptance of the items. In addition to the general invoice requirements stated below, the invoice shall reference (or include a copy of) the corresponding delivery ticket number or packing slip number that was signed by an authorized representative of the County user department at the time the vehicles were delivered and accepted.

All invoices shall contain the basic information as stipulated in Section 1.34.

2.5.1 The County shall issue payment after completion of items (a) and (b) below:

- a. The delivered unit is successfully inspected for compliance with all specifications and requirements and is accepted (including delivery of the required manuals as specified in Section 2, Paragraph 2.9.18).
- b. All documentation described in the Purchase Order has been received as stipulated therein. The language that will appear in the awarded Bidders Purchase Order is:

Application for Certificate of Title and/or Vehicle Registration (HSMV-8040), Certification of Motor Vehicle Sale Tax Exemption (MVC Form DR-41A), Motor Vehicle Dealer Title Reassignment Supplement (DHSMV 82994), Manufacturer's Statement of Origin To A Motor Vehicle and Service Policy shall be made out in the name of:

Miami Dade County, Florida
2225 N.W. 72nd Avenue
Miami, Florida 33122

- c. These documents must be dated to coincide with the delivery of the equipment, send all papers to:

Internal Services Department
Administrative and Business Services Division
Capital Inventory Section
2225 N.W. 72nd Avenue
Miami, Florida 33122

- d. All documents must be properly filled out and completed, signed and notarized by an authorized individual with no strike-overs on any documents. Non-compliance will result in payment delays.
- e. The invoice is to be made out in triplicate to the name of the department as indicated on the Purchase Order and mailed to the same address as shown on the Purchase Order. The vehicle key numbers are to be noted on the invoice.

2.6 PRE-BID AND INSPECTION OF COUNTY EQUIPMENT (EXISTING TRUCK TRACTOR)

A pre-bid conference will be held on the same date and time as specified in paragraph 2.61.a (Inspection of County Equipment), to discuss the special conditions and specifications included within this solicitation. It is highly recommended that a representative of the firm attend this conference as the "cone of silence" will be lifted during the course of the conference and informal communication can take place.

2.6.1 These truck tractors shall be designed and equipped to fully and properly operate the hydraulic system used by the existing refuse trailers' hydraulic ejection system. Bidders are encouraged to thoroughly inspect and become familiar with the current system being used. It is a requirement of this bid that the entire hydraulic system racks, mounts, tie-downs, supports, etc., being proposed by the awarded Bidder shall be furnished "ready to use".

a. A tractor and trailer will be available for viewing at the following location, date and time:

October **, 2014; 9:30AM – 2:00PM

Fleet Management Division, Shop 3
8801 N.W. 58th Street
Miami, Fl. 33178
(305) 418-2727

2.7 SPECIAL CONDITIONS FOR BIDDING MOBILE EQUIPMENT

BIDDING EQUAL PRODUCTS, NO SUBSTITUTION COMPONENTS, MANUFACTURER'S CATALOGUES/BROCHURES AND PRODUCT DEMONSTRATIONS

2.7.1 Manufacturer's name, brand name and/or model number, when used in the specifications are for the sole purpose of establishing minimum requirements of levels of quality, standards of performance and design. They are in no way intended to prohibit the bidding of other manufacturer's brands of equal material, quality, design and standards of performance, unless the wording "NO SUBSTITUTION" is used. When an equal product is bid, the Bidder shall furnish the factory information sheets (specifications, brochures, etc.) that show the product meets or exceeds the required specifications. Failure to meet this requirement may result in the bid being deemed non-responsive. The County will be sole judge of equality or similarity and the County's decision shall be final.

2.7.2 When "NO SUBSTITUTION" is used in combination with a manufacturer's name, brand name and/or model number, the named item is the only item that will be accepted by the County.

2.7.3 Manufacturer's standard information sheets, catalogues, brochures and all supporting documentation submitted must show the product meets or exceeds the required specifications. Bids that are submitted with standard product literature which offer technical data or product descriptions indicating the item or product bid does not meet the required specifications must be accompanied by a letter, on the Bidder's company stationary, identifying those differences and describing how compliance with the required specifications is to be accomplished. Failure to

comply with this requirement may result in the rejection of the bid for not meeting the specifications.

NOTE 1: Photographs, picture, and other graphic illustrations that are part of standard product literature will not be used in determining product compliance with these specifications.

2.7.4 After the Bid Submittals have been evaluated by the County, the Bidder offering the lowest price, as stipulated in Section 2, Paragraph 2.4 of this solicitation may be required to demonstrate the equipment, which has been proposed, for evaluation by and at no cost to the County. The purpose of the demonstration is to observe the equipment in an operating environment and verify its capability, suitability, and adaptability as compared to the performance requirements stipulated in the bid. If a demonstration is required, the County will notify the Bidder of such in writing and will specify the date, time and location of the demonstration. If the Bidder fails to perform the demonstration on the date stipulated in the notice, the County may elect to reject the Bidder's proposal or to re-schedule the demonstration. The County will be the sole judge of the acceptability of the equipment in conformance with the Bid Specifications and its decision shall be final.

2.7.5 The equipment used for the demonstration shall be the same as the manufacturer's model identified in the Bidder's proposal. Accordingly, the equipment used in the demonstration shall create an expressed warranty that the actual equipment provided by the Bidder during the contract period shall be similar to the equipment used in the demonstration. Should that equipment be new, not previously demonstrated and conforms to all bid specifications and requirements, the County reserves the right to purchase that equipment upon successful completion of the demonstration and approval by the Board of County Commissioners, if required.

EQUIPMENT FURNISHED

2.7.6 The equipment furnished by the Bidder shall be new and the most recent model available. Demonstrator models are not acceptable. Any optional components that are required in accordance with these Bid Specifications shall be considered standard equipment for the purposes of this solicitation. Any optional components that are recommended by the vehicle manufacturer for the application intended must be included and will be considered standard equipment for the purposes of this solicitation. The application and usage of all components, sub-components or parts must be in accordance with their manufacturers' recommendations as well as the recommendations of all associated component manufacturers. Omission of any essential detail from these specifications does not relieve the vendor from furnishing a complete and ready to work unit. The silence of specifications on any point shall mean that only the finest commercial practices of the industry shall apply and all interpretations of Bid Specifications shall be so governed. The unit shall conform to all applicable Occupational Safety and Health Administration (OSHA), State and Federal and American National Standards Institute (ANSI) requirements and standards, and Department of Transportation (D.O.T.) regulations. All components and included craftsmanship are to be in accordance with current Society of Automotive Engineers (S.A.E.) standards and recommended practices. The engineering, materials and workmanship shall exhibit a high level of quality and appearance consistent with or exceeding the industry standards.

- 2.7.7 The equipment and features required are listed in the bid specifications (refer to Section 3, entitled "Technical Specifications"). The County may, after delivery and acceptance of the initial equipment ordered, make changes to the required equipment or equipment options supplied, provided; 1) such changes are mutually agreed between the awarded Bidder and the County, 2) all changes in per unit pricing are no more than the change in per unit documentable cost to the awarded Bidder, and 3) that the net amount of any such changes is no more than five percent of the per unit price originally bid. Bids requiring a pre-construction conference, or, the construction and approval of a prototype unit, will be considered in satisfaction of the initial equipment order provision of this paragraph.

WARRANTY REQUIREMENTS

- 2.7.8 The awarded Bidder shall supply and be responsible for the vehicle's warranty.

Vehicles will be supplied with a warranty free of deductibles with no less than the following coverage:

- a. Twenty-four months (24) bumper to bumper to include the complete CNG fuel system.
- b. Sixty (60) months on the engine and transmission.

When vehicle or component manufacturers provide a warranty with coverage in excess of that stipulated herein, that additional coverage shall not be diminished by the requirements of this paragraph. When vehicle or component manufacturers provide a warranty with less coverage than that stipulated herein, the vendor shall provide a supplemental warranty that meets or exceeds the warranty requirements, as stipulated herein. The warranty terms shall be subject to Delay In Start Warranty Program (commence when the vehicle is put into service), if available from the vehicle's manufacturer.

NOTE: Please see Section 3, Paragraphs 3.7, 3.8 and 3.29 (g) for additional warranty requirements.

- 2.7.9 The awarded Bidder shall be responsible for promptly correcting any warranted deficiency, at no cost to the County, at a warranty service center that meets the criteria stated in Paragraph 2.3.1 (b) within five (5) calendar days after the County notified the awarded Bidder of such deficiency in writing. If the awarded Bidder fails to honor the warranty and/or fails to correct or replace the defect within the period specified, the County may, at its discretion, notify the awarded Bidder in writing that the Bidder may be found in violation of the Contract or be subject to contractual default if the deficiencies are not corrected and/or replacement or repairs are not completed to the satisfaction of the County within the specified timeframe. If the awarded Bidder fails to satisfy the warranty within the period stipulated in the notice, the County may (a) place the awarded Bidder in default of its contract, and/or (b) procure the products or services from another vendor and charge the bidder for any additional costs that are incurred by the County, either through a credit memorandum or through invoicing.

OEM PARTS AND SERVICE AGREEMENT

- 2.7.10 The awarded Bidder and/or their local service representative may be required to enter into an Original Equipment Manufacturer (OEM) parts and service supply agreement with Miami-Dade County, during the useful life of the equipment furnished. This maintenance support agreement would be to supply parts, repairs and training or service at the County's discretion. By the submission of this bid, the Bidder agrees to enter into such agreement at the County's discretion, with parts and labor pricing at rates no higher than industry standard.

DELIVERY AND PAYMENT

- 2.7.11 All prices shall be quoted F.O.B. destination point. Deliveries are authorized at the County's Shop 3 Main vehicle facility, located at 8801 NW 58 Street, Doral, Florida 33178, between the hours of 8:00 A.M. and 2:00 P.M. weekdays, or at another location or at times that may be so designated on the purchase order. Contact the Facility Supervisor at (305) 591-9515, forty-eight (48) hours prior to delivery.
- 2.7.12 Delivery is required within the number of days stated in this paragraph. In no case may the date to produce a prototype be later than ninety (90) days from the date of issue of the purchase order for this acquisition. Upon approval of the prototype the full order for all the units shall be produced and delivered to the County no later than two hundred and ten (210) days from the date that the County department orders the equipment by sending a printed Purchase Order to the awarded Bidder. All deliveries are to be made in accordance with good commercial practice. All equipment delivered must be in full compliance with bid specifications and requirements, and must be in excellent condition ready to work. Upon verification of compliance with these requirements the County will accept the delivered equipment. See Paragraph 2.7.14 for delivery defected correction requirement.
- 2.7.13 Upon failure to deliver the equipment in accordance with best commercial practices, excellent ready to work condition, and full compliance with the specifications and requirements to the County within the number of days stipulated in Paragraph 2.7.12., the awarded Bidder shall be subject to charges for liquidated damages in the amount of one tenth (1/10) of one percent (1%) of the per unit purchase price for each and every calendar day that each unit of the equipment order is not delivered on time and in acceptable condition and/or in accordance with the required delivery timeline schedule. This charge for liquidated damages is in addition to other remedies and timetable requirements listed in Paragraph 2.7.14 below.

- 2.7.14 The awarded Bidder shall be responsible for promptly correcting any equipment delivery deficiency, at no cost to the County, within ten (10) calendar days after the County notifies the awarded Bidder of such deficiency in writing. If the awarded Bidder fails to correct or replace the defect within the period specified, the County may, at its discretion, notify the Bidder in writing that the Bidder may be found in violation of the Contract or be subject to contractual default if the deficiencies are not corrected and/or replacement or repairs are not completed to the satisfaction of the County within the specified timeframe. If the awarded Bidder fails to satisfy the delivery requirements within the period stipulated in the notice, the County may (a) place the Bidder in default of its contract, and/or (b) procure the products or services from another vendor and charge the awarded Bidder for any additional costs that are incurred by the County either through a credit memorandum or through invoicing.

PARTS, REPAIRS AND TRAINING MANUALS

- 2.7.15 At the first delivery, the awarded Bidder shall provide the County with a minimum of one (1) comprehensive driver or operator manual per unit which describes the appropriate use of the equipment purchased, and, ten (10) comprehensive repairs and parts manuals which identify the component parts and which describe the appropriate process for repairing the equipment purchased. This may be done by book, CD or online access to the appropriate complying information.

The awarded Bidder will be responsible for providing training at a Miami-Dade County designated facility to no less than forty (40) technicians at no cost to the County. The training shall be for the complete unit and cover all aspects of diagnostic, maintenance, and repair on the CNG truck tractors.

ALTERNATE BIDS

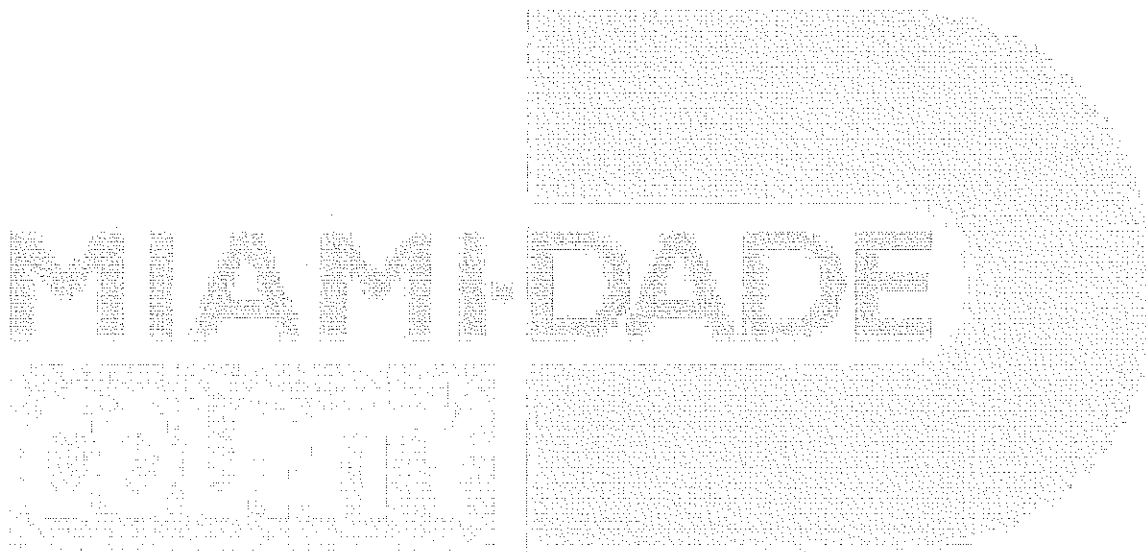
- 2.7.16 Alternate bids are not permitted as part of this solicitation.

PRODUCTION/PROTOTYPE INSPECTION

- 2.7.17 The awarded Bidder shall be required to provide for an on-site production / prototype inspection of the first unit manufactured at times which are mutually convenient to the awarded Bidder and the County officials attending. This inspection shall be performed prior to the final assembly of the equipment in order to evaluate the placement of controls and lines, structural changes and general construction techniques. The awarded Bidder shall provide reasonable notice to the County prior to the scheduling of the on-site production inspection. The County reserves the right to require modifications to the equipment if such modifications are necessary in order to bring the equipment into compliance with the technical specifications, the Bidder's offer, or best commercial practices. The County reserves the right to require multiple production inspections where multiple locations or companies are involved with the construction of a final unit. Any costs incurred by these County Officials in conjunction with on-site production/prototype inspection will be borne by the County.

2.8 PRE-CONSTRUCTION CONFERENCE

The awarded Bidder shall be required to conduct a Pre-Construction Conference for County officials designated to represent the County prior to the manufacturing or assembly of the equipment which is specified in this solicitation. The awarded Bidder may select the location of this construction conference. Any costs incurred by these County officials in conjunction with the pre-construction conference shall be borne by the County.



SECTION 3 – TECHNICAL SPECIFICATIONS

3.1 GENERAL REQUIREMENTS

These specifications are the minimum requirements for setback truck tractors that are used in combination with existing 85 cubic yard capacity refuse transfer trailers that are 41 feet long. The County presently operates approximately 150 of these combination units on a seven to ten year life cycle. These combination units will be used seven (7) days a week right (8) hours per day and may be used up to sixteen (16) hours per day depending on the daily workload. These truck tractor and trailer units will be predominately operated on paved roads within Miami-Dade County and are also required to have full capabilities of unloading refuse and scaling landfill sites. It is required that all units proposed be of superior build quality enabling the daily operation of these tractors with reliability characteristic of vehicles manufactured using only the best commercial practices. All units must be equipped with the manufacturer's standard equipment and be constructed using components recommended by their manufacturers for hauling refuse transfer trailers, as well as meeting the following supplemental requirements.

3.2 OPERATION

It is expected that each unit will be operated approximately 30,000 miles per year.

3.3 CHASSIS

GVWR to match or exceed FDOT requirements with the front and rear axles stipulated.

a. **FRAME:** R.B.M. minimum is 1,900,000 lbs. but in no event may be lower than the minimum R.B.M. recommended by the manufacturer of the cab and chassis used for the work vocation and applications intended.

b. **WEIGHT AND DISTRIBUTION:** A certified weight ticket to document the total unit weight must be available at the prototype inspection. Charts showing the proposed weight distribution loaded and unloaded should be submitted with the bid. Bidders should assume the load is evenly distributed in the trailer and the loaded GCW is 80,000 lbs. for the fully loaded chart.

c. **DIMENSIONS:** Charts stipulating the projected build dimensions should be submitted with the bid. Certain guidelines are specified below. The County reserves the right to make adjustments to the submitted dimensions and will issue approval for the prototypes build dimensions at the pre-construction conference.

- 1. WB (Wheelbase): Minimum 200" or greater depending on final DGE tank size and configuration and hydraulic tank size and placement on the chassis
- 2. CT (Cab to trunnion): Shortest possible as recommended by the OEM based on final selected wheelbase in 3.3 C. 1.
- 3. AF (Aft of frame): specify. (Please advise what this means. Thanks.)
- 4. The distance from the front of the front tire on the truck tractor to the rear of the rear most tire on the transfer trailer is not to exceed sixty (60) feet.

- d. CA (Cab to axle) – As recommended by the cab and chassis manufacturer for this application.
- e. Wall to wall and curb to curb turning circle charts for the tractor unit proposed.

3.4 CAB

Conventional air ride cab design with manufacturer's OEM air-conditioning with cabin and fresh air filtration (if available) and heating systems are required with the following supplemental requirements:

- a. Bostrom Liberty high-back air suspension driver's seat with Cordura fabric or Sears equal, or other equal seat that may be designated by the County at the preconstruction conference; and the manufacturer's standard passenger seat, with OEM installed seat belts.
- b. Wide view type windshield with tinted safety glass all around.
- c. Provide and install a methane gas warning system as recommended by the OEM for the detection of methane gas in the cab at all times. This system should include an audible and visual warning alert that can be seen and heard from the outside of the tractor cab.
- d. The cab shall be insulated against heat, cold, and noise.
- e. Arm rests, a dome light, interior sun visors, a map compartment, AM-FM radio, rubber flooring, and non-skid rubber floor mats shall be furnished. Two power points on a separately fused 30 amp circuit in addition to a J Port which may not be shared with any other electrical or electronic components, and must be located in the cab with convenient access. The J port must have its own circuit breaker.
- f. 6" X 16" stainless steel mirrors and 8" spot mirrors or approved equal mounted on the left and right sides of the cab and exterior grab-handles. Manufacturers who offer mirror combinations with supports built into the cab body that performs the same functions shall be acceptable. Final locations of all mirrors shall be subject to County approval.
- g. Scale reading cab instrumentation, which includes an ammeter or voltmeter, speedometer with odometer, tachometer, hour meter, oil-pressure, water temp, CNG fuel, transmission temperature and air-pressure gauge, with a visual alert indicator and an audible alarm, are required. Where truck manufacturer or engine electronics include these functions in dashboard displays those displays shall be acceptable.
- h. Dual bumper guides consisting of a spring base mounted fiberglass rod mounted on the outer edge of the right and left front bumper and visible from the driver's seat shall be furnished.
- i. Fiamm or Hadley 133 db single or dual trumpet horn single base or its equivalent shall be furnished. The final horn location is subject to approval by the County. Final horn location shall be approved at the prototype inspection.
- j. Tilt and telescope steering column (if available) and tinted glass on all windows, including windshield.

- k. A 5-pound (minimum), ANSI/U.L. approved, A B C rated and dry chemical fire extinguisher shall be mounted on the floor next to the driver's seat. The fire extinguisher shall be easily accessible by opening the driver's side door. The fire extinguisher shall be tested to ANSI/UL 711 and ANSI/UL 299 marine type U.S.C.G standards.
- l. OEM exterior mounted full width sun visor for the complete front windshield.

3.5 LIGHTS AND REFLECTORS

Lights and reflectors shall meet F.M.V.S.S. and Florida D.O.T regulations. LED lighting shall be used wherever possible for lights except for LED front headlights are not required.

3.6 COOLING SYSTEM

Maximum cooling capacity within the chassis and engine manufacturer's recommended range, with all related components selected to afford maximum cooling and a recovery system for overflow.

- a. An Extended Life Engine Coolant and water-conditioning filter, if available, or supplemental additive system.

3.7 ENGINE

A Cummins ISX12-G Compressed Natural Gas engine rated at 400 horsepower power and 1450 foot pounds of torque, "**NO SUBSTITUTION**". A written five (5) year 100% coverage engine warranty shall be supplied for each engine purchased. If not provided by engine electronics, an automatic safety device shall be installed and adjusted to prevent engine damage in case of oil pressure failure, cooling system overheating or low coolant level, by stopping (not de-rating) the engine. This system shall include a brief duration emergency override for safety purposes. Additional requirements are listed below:

- a. Fuel filtration as recommended by the engine's manufacturer with the OEM recommended fuel/water/oil separator.
- b. Engine Air filter with dash mounted air restriction indicator.
- c. The awarded Bidder will be required to furnish a frame mounted skid plate to protect the engine and transmission, fabricated from 3/16" steel plate. The skid plate design shall provide maximum ground clearance without restricting engine access or cooling and be a bolt on/off type. The skid plate shall provide access to any filtration or drains it restricts access to. If not available directly from the truck's manufacturer, the Bidder shall provide details and drawings of the proposed local installation with its bid. All designs and mountings shall be subject to review, approval and revision by the Fleet Management Division.

NOTE: All generic filters used for liquids and fluids shall be the spin-on type and all lubricants shall be synthetic where recommended by the component's manufacturer in this application. **NO SUBSTITUTION.**

3.8 TRANSMISSION

Allison 4500 RDS with the Allison short dip stick option for measuring the oil in the transmission, equipped with Allison recommended torque converter in a six (6) forward speed configuration with an external cooler and Allison push button selector or equal mounted either in the dashboard or another mutually agreed location which shall not interfere with the operator's hands or feet.

All Allison no charge program options (LBSS, RELS, SEM, VAC, etc.) are to be programmed to operate into the transmission. When the parking brake is activated and the truck is in forward or reverse gear, the transmission is to be configured to automatically shift into the neutral position. A written five (5) year 100% coverage transmission warranty shall be supplied for each vehicle purchased.

All transmission mountings shall be in accordance with all transmission and truck manufacturer's recommendations and the lowest point of the transmission and attendant lines shall not be below the lowest point of the rear axle housing and shall be engineered for maximum ground clearance.

The transmission oil cooler shall enable dissipation of enough heat for extended function at maximum torque stop and go conditions.

The transmission shall use the Parker Chelsea power shift (shift on the go) PTO "NO Substitution". The PTO is to be mounted to the converter housing (at the left side, down location is preferred), and use 12V electric shifting. The PTO solenoid control shall be dash mounted and the entire PTO installation and pump shall have gear ratios selected and engineered to work in concert with a Parker hydraulic pump "NO SUBSTITUTION" geared to deliver no less than 37 GPM and no more than 50 GPM.

3.9 FRONT AXLE AND SUSPENSION

Rated minimum capacity of no less than 14,000 lbs. as recommended by the truck's manufacturer for this application and weight loading. In no event may this provide less than a 10% spare capacity between the minimum required by FDOT for the weight to be carried (See Section 3, paragraph 3.3 (b)) and with 10 stud drums and non-aluminum hubs.

3.10 REAR AXLE AND SUSPENSION

Hendrickson Haulmaxx rubber suspension with rear shocks, rebound straps for bolsters, and a minimum rated capacity of 46,000 lbs. as recommended by the manufacturer for this application with 10 stud drums and nonaluminum hubs.

- a. Power divider – A driver controlled power divider affecting all tandem axles shall be supplied with a dash mounted visual indicator and audible alarm to alert the operator when engaged.
- b. Final drive ratio of - 5.57. Final gear ratio delivering the best overall performance and fuel economy will be selected by the County in coordination with the awarded bidder at the preconstruction conference "NO SUBSTITUTION".

3.11 WHEELBASE AND STEERING

Wheelbase shall be reviewed and optimized by the manufacturer involved to provide the optimum chassis dimensions for the vehicle proposed. Where frame rails must be cut, channeled, notched or modified in any fashion other than standard drilling to mount an ancillary item or tank, written approval to do so must be obtained in advance from the County.

- a. Power steering system designed for vehicles of this dimensional size, weight and type of service with all front wheel, axle and suspension components selected to provide maximum safe wheel cramp angle and resulting minimum turning circle radius within the capacities and dimensions specified.

3.12 WHEELS AND TIRES: NO SUBSTITUTION

For the front axle provide a satin non reflective appearance Alcoa or Accuride, hub piloted aluminum 10-bolt hole 9.0 wide severe service wheels with Goodyear G289WHA 315/80 all position tires. Front wheel offsets shall be selected to provide maximum turning cramp angle on the axle used within the wheel width recommendations of the tire manufacturer.

For the rear tandem axles provide a satin non reflective appearance Alcoa or Accuride, hub piloted 10-bolt hole 8.25 wide severe service wheels with Goodyear G287MSA 12R22.5 or G751MSA 12R22.5 tires at all positions.

3.13 COMPRESSED NATURAL GAS (CNG) FUEL TANK SYSTEM

Provide and install an OEM fuel system installed on the assembly or a complete Agility Fuel System Company Compressed Natural Gas (CNG) Fuel System "No Substitution" with a capacity of no less than ninety (90) diesel gallon equivalent (DGE).

The fuel tank system is to be properly mounted/installed on the frame of the truck tractor as recommended by the OEM and Agility. The mounting system chosen should prevent the tank system from coming lose from the truck due to road vibration and operation of the unit on the rough terrain unimproved found in the landfill. In addition the tank mounting/installation system must be NHTSA tested and approved. Approval documents should be submitted with the bid.

All CNG lines should be properly secured and/or clamped to prevent rupture from chaffing or rubbing against other items. All CNG fuel lines which run next to hot exhaust (turbo, piping, etc.) should be heat shielded as recommend by the manufacturer to prevent damage to them from heat.

The CNG system is to be equipped with the following items:

- A. In a central location on the curbside of the vehicle include a fast, slow (timed) and defueling/transfer fueling ports and a CNG Pressure or fuel tank level gauge
- B. Slow (timed) fill recessed fueling port on the front tractor with final location to be approved at the pre-construction conference.
- C. Easy to access and drain CNG fuel filter as close as possible to the slow and fast fill fueling ports on the curbside.

3.14 EXHAUST

Vertical to a height not to exceed 12' 8" from ground level with an elbow at the top of the stack and a stainless steel or aluminum protective exhaust guard installed so as to completely prevent burns or injury to anyone entering the cab.

3.15 ELECTRICAL

A twelve (12) volt system with no less than a 140 - ampere alternator and 1800 CCA batteries. All copper wiring with each wiring circuit protected by a resettable easily accessible circuit breaker. J port and an additional power point conveniently located in the cab must be provided.

- a. A quick connect battery jumper connection shall be provided at a location near the battery box, to be finalized at the pre-construction conference.
- b. A battery disconnect switch with an amber clearance light on top of the cab to show power is "on".
- c. The battery box top must be on a tether to prevent loss or theft.

3.16 LINES, FITTINGS AND WIRING

All air, hydraulic, cooling and transmission lines shall be located and secured or clamped/anchored in the chassis. Should the chassis design prohibit this, then the lines shall be securely mounted above the centerline of the axles. All pressure side hydraulic hoses that could "spray around" in case of a hose rupture shall be encased in a protective sheath, to prevent such occurrence.

- a. As-built schematics for electrical, air and hydraulic systems shall be furnished with the equipment order of each equipment type. All subsequent deliveries of that equipment type under this contract shall be built to match any and all changes, requiring a new set of revised schematics.

3.17 FLAPS

The truck manufacturer shall supply appropriately mounted regulation size anti-sail mud flaps for the rear of the front axle if their body configuration does not prevent rearward splatter of water and debris onto the fuel tanks and steps. Mud flaps with anti-sail brackets mounted front and rear of the rear tandems.

3.18 TOW HOOK

Front mounted manufacturer's recommended hook(s) or pin(s) appropriate for moving or towing the vehicle.

3.19 DRIVELINE

Ratings and capacities as recommended by the manufacturer for the application and capacities intended.

3.20 BRAKE SYSTEMS

"S" Cam drum-based system with all wheel ABS meeting Federal Motor Vehicle Safety Standards; Air Brake Systems; Final Rule, 74 Fed Reg. 37122 (July 27, 2009) (amending 49 C.F.R. 571.121).

- a. Front Axle – The widest available 16.5 diameter brake linings as recommended for the axle selected with Type - 30 or equal brake chambers.
- b. Rear Axle – 16.5 X 8.62 brake linings recommended for the axle selected with Type-30 or equal spring set brake chambers on both rear axles.
- c. Wabco two stage air dryer with the oil coalescent filter cartridges or County approved equal to be approved at pre-construction conference and minimum 15 CFM compressor.
- d. Maximum capacity air reservoir(s) equipped with automatic draining capability and pull cord drain valves conveniently located.
- e. A breakaway valve, two way system, with dash mounted control.

3.21 FIFTH WHEEL: NO SUBSTITUTION

- a. Fontaine # SLTPLH5092 or Holland # FW0070 with a minimum 150,000 lbs. draw bar.
- b. Mounting brackets 3/8 inch angle bolt on type.
- c. The fifth wheel and kingpin settings will be determined at the pre-construction conference.

3.22 TRACTOR AND TRAILER HYDRAULICS

These tractors shall be designed and equipped to accommodate the hydraulic system used by the existing refuse trailers' hydraulic ejection system. Bidders are encouraged to thoroughly inspect and become familiar with the system being used as per Section 2. It is a requirement of this bid that the same system with racks, mounts, tie-downs, supports, etc., shall be furnished "ready to use". All hydraulic hoses shall have a minimum pressure rating of 2500 #.

- a. A tractor and trailer will be available for viewing as per Section 2, paragraph 2.6.
- b. The bidder shall provide a specification sheet with technical data supporting the application and settings, upon request. All settings must be in accordance with manufacturer's recommendations.

3.23 HYDRAULIC RESERVOIR

- a. Commercially available JIC type .250" minimum thickness steel or .375" minimum thickness aluminum hydraulic reservoir with no less than a 110 gallon capacity. The reservoir is to be baffled to separate return from inlet to promote de-aerating, heat transfer and drop contaminants. The reservoir is to have an easily accessible cleanout cover as close as possible to suction strainer to facilitate cleaning and one 3/4" NPT drain. Final hydraulic tank size and configuration is subject to approval at the preconstruction conference.
- b. The reservoir shall be chassis mounted behind the cab with the proper isolation to prevent vibration damage.
- c. The filler port shall have a screen to prevent contaminants from entering the tank and be equipped with a watertight locking cap (if available).
- d. The hydraulic tank must be equipped with a Eaton Vickers H20-gate breather or County approved equal. The venting capacity must be equal to the displacement capacity of the hydraulic pump used and the transfer trailer's 4 stage telescopic cylinder.
- e. A Stauff 12" or County approved equal sight glass mounted in the reservoir must be provided to indicate the full level as well as indicating the low oil level mark.
- f. All input and output locations on the tank shall have proper reinforcement where they meet the tank to prevent metal damage from stress or fatigue due to vibrations.
- g. The hydraulic system shall be designed to include a low oil level sensor in the hydraulic reservoir that shall cause the PTO to deactivate when hydraulic oil is low preventing pump damage from a low oil condition.

3.24 HYDRAULIC FILTRATION: NO SUBSTITUTION

- a. Stauff RTF48G10BTT25S2N-V or County approved equal 100 GPM in-tank return filters with -24 SAE o-ring ports which shall be properly mounted to top of the tank per manufacturers installation instructions and recommendations. Each return filter assembly shall have a Stauff CL-12 return line pressure gauge.
- b. An Eaton Vickers OSS or equal in tank suction strainer with a 3 PSI cracking pressure bypass. The filter shall be mounted inside the tank to provide the maximum flow and prevent aeration.
- c. An easy to access and operate , 1-1/2 inch full port ball type shut off valve is required on the suction side of the reservoir as close as possible to the tank.
- d. The suction hose must be 1-1/2 S.A.E. 100-R4 rated.

3.25 SUPPORT BRACKET

Must be provided for all hydraulic hoses and air lines.

- a. A 3/16" steel support bracket must be bolted to the chassis behind the hydraulic reservoir. Final design and approval will be at the preconstruction and/or at prototype inspection.
- b. Grip strut type 14 gauge walkways must be fabricated and mounted onto and/or across the frame members of the tractor. Final design and approval will be at the preconstruction and/or at prototype inspection.
 1. From the rear of the hydraulic reservoir to the front of the fifth wheel. The length to be as long as possible to final configuration to provide the maximum working platform.
 2. On the area directly behind the cab and to the left of the left frame covering the battery box (if installed), the size of the walkway is approximately 19 inches wide by 1 inch high, length to be as long as possible to safely facilitate driver access from cab step to working platform.
 3. No Less than two (2) all LED work adjustable lights to provide substantial and adequate lighting to assist the driver when backing up to connect to a trailer and connecting hydraulic hoses. One light is to be mounted on each side of the bracket as close as possible to the end of the bracket.

3.26 HYDRAULIC RELIEF VALVE

A Pilot Type hydraulic relief valve mounted on the hydraulic pump and set to manufacturer's specifications shall be provided to prevent damage or rupture to the hydraulic system.

- a. All exposed pressure hoses must be shielded to prevent hydraulic fluid spraying around in case of a hose rupture.

3.27 ENGINE OVERSPEED

Must be provided by engine electronics; **NO SUBSTITUTION.**

- a. Must be preset by the manufacturer to meet PTO, hydraulic pump and application needs.
- b. PTO must be configured to disengaged at 5mph and greater.

3.28 BACK-UP ALARM

- a. Velvac, Precor or other equal self-adjusting volume type, meeting current SAE loudness standards and produce a clear intermittent sound conforming to applicable OSHA standards.
- b. The alarm shall be activated when the vehicle transmission selector is placed in the reverse position.

3.29 PAINT AND RUSTPROOFING

The entire unit(s) inclusive of whatever body may be requested shall be prepared and painted Two-Tone White and Black as designated in (c), (d) or (e) below. **NO SUBSTITUTION.** All structural elements shall be thoroughly cleaned to remove all grease, oil and foreign matter. Weld splatter, slag, flux and rust or corrosion shall be completely removed by chipping, wire-brushing, shot blasting or sand-blasting prior to priming and painting.

- a. PRIMER - Only the highest quality rust inhibiting primer specified for use with the designated finish coat shall be used.
- b. FINISH COAT - Shall be smooth, hard and free from imperfections. The unit(s) shall be finished in White with the running boards, bumpers, hydraulic platform and rack, frame assembly, finished in Black. The wheels must be powder coated black. No outside metal surface void of paint shall be accepted.
- c. P.P.G. Durethane 750/1000 Basecoat Clear coat process shall be accepted for use on this vehicle.
- d. The Imron 6000 or Imron Elite Basecoat Clear coat process shall be accepted for use on this vehicle.
- e. Other primer and finish coat applications of equally high quality that may be approved by the County. Alternate color choices to approved coating systems may be named by the County at a later date for use by Water and Sewer, Aviation, Public Works or other departments that may require specialized colors or applications.
- f. In Paragraphs (c), (d) or (e) above, the County requires the unit(s) to be guaranteed against peeling cracking or oxidation for a period of one (1) year from date of acceptance.
- g. The awarded Bidder shall be responsible for the application of rust and corrosion protection and shall warranty the entire vehicle for a five (5) year period. The warranty shall protect all underside surfaces excluding fiberglass and driveline. All closed in areas such as roof ribs, body posts, support pillars, rocker panels and all other areas subject to rusting from the inside out, that have not been treated at the time of manufacture, shall be drilled, treated and plugged as required. The warranty shall require the complete repair of any rust or corrosion damage that occurs in the five (5) year warranty period. The awarded Bidder shall provide any periodic service required to maintain the warranty period.