

AGREEMENT

THIS AGREEMENT is made and entered into by and between the **CITY AND COUNTY OF DENVER**, a municipal corporation of the State of Colorado (the “City” or “Customer”) and **RUSH TRUCK CENTERS OF COLORADO, INC.**, a Delaware corporation whose address is 5156 Vasquez Blvd., Denver, CO 80216 (“Contractor”).

RECITALS:

1. The City desires to obtain 42 Peterbilt Cab and Chassis various loaders and associated equipment, and Contractor desires to provide that equipment to the City.
2. Payment for the equipment shall be financed through a separate lease-purchase agreement (the “LPA”) between the City and Chase Equipment Finance, Inc., (“Financer”).

AGREEMENT:

For and in consideration of the agreements contained, and subject to the terms and conditions stated, in this Agreement, the parties agree as follows:

1. **FORM OF AGREEMENT.** This Agreement shall consist of the terms and conditions stated in the following numbered Articles, together with those exhibits or attachments that are referenced and incorporated in such Articles. In the event that any conflict between the terms and conditions contained in this document and those contained in any exhibits or attachments shall occur, the terms and conditions of these numbered Articles shall be controlling.

2. **COORDINATION AND LIAISON:** Contractor agrees that during the term of this Agreement it shall fully coordinate the performance of this Agreement with the City, including the Manager of Public Works (“Manager”) or as otherwise directed by the City. Contractor understands that the Manager or designee is the City's representative or Project Manager under this Agreement through whom Contractor obligations performed under this Agreement shall be coordinated.

3. **EQUIPMENT AND WARRANTIES TO BE PROVIDED.**

A. Contractor shall provide to the City the equipment and the Manufacturer (as defined in Exhibit A) warranties listed and described on **Exhibit A** attached hereto (hereinafter referred to as the “Equipment” and “Warranties”).

B. It is understood and agreed that the Equipment and Warranties associated with this Agreement that are being provided to the City hereunder are also routinely provided to nongovernmental customers on the same terms and conditions that were offered to the City and are agreed to by the City in this Agreement.

4. **SPECIAL PURCHASING TERMS AND CONDITIONS:** In addition to all other terms and conditions stated in this Agreement, Contractor shall comply with the following special purchasing terms and conditions:

A. Pricing is F.O.B. Denver, CO, delivered to the City facilities as set out on Exhibit A.

B. Contractor agrees to bear all risk of loss, injury, or destruction of goods and materials ordered as a result of this Agreement which occur prior to delivery to the City; and

such loss, injury or destruction shall not release Contractor from any obligation hereunder. Thereafter, risk of loss shall pass to the City and Financer as further described in the LPA.

C. Contractor agrees to furnish, upon the written request of the City, any additional information needed to substantiate or clarify the design and/or performance characteristics of the Equipment.

D. Contractor Invoices must include the following:

- (1) City contract control number.
- (2) Items listed individually.
- (3) Invoice number and date.
- (4) Requesting department name and "ship to" address.
- (5) Payment terms.

5. **TERM.** The Term of this Agreement shall commence upon January 1, 2014, and expire on December 31, 2015.

6. **COMPENSATION.**

A. It is understood and agreed that the City has elected to lease/purchase/finance the Equipment and Warranties through the LPA. The City and Financer have also entered into an escrow agreement that together with the LPA provide for payment to the Contractor of the maximum amount stated herein. The Contractor's performance under this Agreement is expressly conditioned upon funding of the escrow agreement and proper payment as set out herein.

B. The total compensation payable to Contractor for acquiring and delivering the Equipment together with the Warranties shall not exceed the amount of **TEN MILLION SIX HUNDRED AND ONE THOUSAND FOUR HUNDRED THIRTY THREE DOLLARS AND TWENTY NINE CENTS (\$10,601,433.29)** (the "Maximum Purchase Amount"), payable directly to the Contractor by Financer. Delivery of the Equipment shall occur, and title to the Equipment shall vest with Financer, upon payment of the Maximum Purchase Amount to Contractor in accordance with the delivery of the Acceptance Certificates. Beneficial use of the Equipment and Warranties shall remain with the City.

C. The total compensation payable by the City to Contractor under this Agreement for the Equipment and Warranties is Zero Dollars (\$0.00) (the "Maximum Contract Amount").

D. The total obligation of the City hereunder shall be limited to funds appropriated for the purposes of this Agreement by the Council of the City and County of Denver, paid into the Treasury of the City and encumbered for the purpose of this Agreement.

7. **TIME IS OF THE ESSENCE:** The parties agree that in the performance of the terms, conditions, and requirements of this Agreement by Contractor, time is of the essence.

8. **STATUS OF CONTRACTOR:** It is understood and agreed by and between the parties that the status of Contractor shall be that of an independent contractor and it is not intended, nor shall it be construed, that Contractor or any employee or subconsultant is an employee, officer, or agent of the City under Chapter 18 of the Denver Revised Municipal Code for purposes of unemployment compensation, workers' compensation, or for any purpose whatsoever.

9. **TERMINATION OF AGREEMENT:** The City may terminate this Agreement at any time on thirty (30) days' notice if Contractor is in breach or default of the Agreement and the breach remains uncured for thirty (30) days after receipt of written notice of the breach or if the underlying project or activity is canceled. The City may also by written Notice of Default to Contractor terminate the whole or part of this Agreement in the event Contractor or any of its officers or employees are convicted, plead *nolo contendere*, enter into a formal agreement in which they admit guilt, enter a plea of guilty, or otherwise admit culpability to criminal offenses of bribery, kickbacks, collusive bidding, bid-rigging, antitrust, fraud, undue influence, theft, racketeering, extortion or any offense of a similar nature, in connection with Contractor's business. Contractor may terminate this Agreement upon ten (10) days prior written notice if (a) the City breaches this Agreement and the breach remains uncured for thirty (30) days after receipt of written notice of the breach, or (b) Financer fails to honor its obligations under the LPA.

10. **WHEN RIGHTS AND REMEDIES NOT WAIVED:** In no event shall any payment by the City hereunder constitute or be construed to be a waiver by the City of any breach of term, covenant, or condition or any default which may then exist on the part of Contractor, and the making of any such payment when any such breach or default shall exist shall not impair or prejudice any right or remedy available to the City with respect to such breach or default; and no assent, expressed or implied, to any breach of any one or more terms, covenants, or conditions of the Agreement shall be construed as a waiver of any succeeding or other breach.

11. **EXAMINATION OF RECORDS:** Contractor agrees that any duly authorized representative of the City, including the City Auditor or his representative, shall, until the expiration of three (3) years after the final payment under this Agreement, have access to and the right to examine any directly pertinent books, documents, papers and records of Contractor, involving transactions related to this Agreement.

12. **TAXES, PERMITS AND LICENSES:** Contractor agrees to pay promptly all taxes, excises, license fees and permit fees of whatever nature applicable to its operations, and to take out and keep current all required licenses or permits, whether municipal, state or federal, required for the conduct of its business hereunder, and further agrees not to permit any of said taxes, excises or license or permit fees to become delinquent. Contractor further agrees to furnish the City, upon request, duplicate receipts or other satisfactory evidence showing the prompt payment by Contractor of all required licenses and permits and all taxes. Contractor further agrees to pay promptly when due all bills, debts and obligations incurred by it in connection with its operations, and not to permit the same to become delinquent and to suffer no lien, mortgage, judgment or execution to be filed which will in any way impair the rights of the City under this Agreement.

13. **VENUE, GOVERNING LAW:** Each and every term, condition, or covenant herein is subject to and shall be construed in accordance with the provisions of Colorado law, any applicable federal law, the Charter of the City and County of Denver and the ordinances, regulations, and Executive Orders enacted and/or promulgated pursuant thereto. Such applicable law, together with the Charter, Revised Municipal Code, regulations and Executive Orders of the

City and County of Denver, as the same may be amended from time to time, is hereby expressly incorporated into this Agreement as if fully set out herein by this reference. Venue for any action arising hereunder shall be in the Denver County or Denver District Court in the City and County of Denver, Colorado.

14. **USE, POSSESSION OR SALE OF ALCOHOL OR DRUGS:** Contractor, its officers, agents, and employees shall cooperate and comply with the provisions of Executive Order 94 and Attachment A thereto concerning the use, possession or sale of alcohol or drugs. Violation of these provisions or refusal to cooperate with implementation of the policy can result in the City's barring Contractor from City facilities or participating in City operations.

15. **ASSIGNMENT AND SUBCONTRACTING:**

A. Provided that the City shall have accepted the Equipment, the City shall not have the right to and shall not assert against any assignee of Financer or other registered owner of the Equipment any claim, counterclaim or other right the City may have against the Contractor.

B. None of the City's right, title and interest in any portion of the Equipment may be assigned or encumbered by the City for any reason; except that the City may sublease all or part of such Equipment if (a) such sublease is to an agency or department of, or a political subdivision of, the State or (b) the City obtains the prior written consent of Financer and an opinion of nationally recognized counsel in the area of tax exempt municipal obligations satisfactory to Financer that such subleasing will not adversely affect the exclusion of the interest components of the rental payments made to Financer under the lease-purchase transaction referenced herein from gross income for federal income purposes. Any such sublease of all or part of any Equipment shall be subject to the lease-purchase transaction with Financer and the rights of Financer in, to and under such transaction with respect to the Equipment.

C. The City is otherwise not obligated or liable under this Agreement to any party other than the Contractor named herein. Contractor is otherwise not obligated or liable under this Agreement to any party other than the City. Contractor understands and agrees that it shall not assign or subcontract with respect to any of its rights, benefits, obligations or duties under this Agreement except upon prior written consent and approval of the City, which consent or approval may be withheld in the absolute discretion of the City; and in the event any such assignment or subcontracting shall occur, such action shall not be construed to create any contractual relationship between the City and such assignee or subcontractor, and Contractor herein named shall remain fully responsible to the City according to the terms of this Agreement.

16. **NO DISCRIMINATION IN EMPLOYMENT:** In connection with the performance of work under this Agreement, Contractor agrees not to refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and Contractor further agrees to insert the foregoing provision in all subcontracts hereunder.

17. **INSURANCE:**

A. **General Conditions:** Contractor agrees to secure, at or before the time of execution of this Agreement, the following insurance covering all operations, goods or services provided pursuant to this Agreement. Contractor shall keep the required insurance coverage in

force at all times during the term of the Agreement, or any extension thereof, during any warranty period, and for three (3) years after termination of the Agreement. The required insurance shall be underwritten by an insurer licensed or authorized to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, the City must be notified by the Contractor. Contractor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Agreement are the minimum requirements, and these requirements do not lessen or limit the liability of the Contractor. The Contractor shall maintain, at its own expense, any additional kinds or amounts of insurance that it may deem necessary to cover its obligations and liabilities under this Agreement.

B. Proof of Insurance: Contractor shall provide a copy of this Agreement to its insurance agent or broker. Contractor may not commence services or work relating to the Agreement prior to placement of coverage. Contractor certifies that the certificate of insurance attached as Exhibit B, preferably an ACORD certificate, complies with all insurance requirements of this Agreement. The City requests that the City's contract number be referenced on the Certificate. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Agreement shall not act as a waiver of Contractor's breach of this Agreement or of any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements.

C. Additional Insureds: For Commercial General Liability, and Auto Liability, Contractor and subcontractor's insurer(s) shall name the City and County of Denver, its elected and appointed officials, employees and volunteers as additional insured.

D. Waiver of Subrogation: For all coverages, Contractor's insurer shall waive subrogation rights against the City.

E. Subcontractors and Subconsultants: All subcontractors and subconsultants (including independent contractors, suppliers or other entities providing goods or services required by this Agreement) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of the Contractor. Contractor shall include all such subcontractors as additional insured under its policies (with the exception of Workers' Compensation) or shall ensure that all such subcontractors and subconsultants maintain the

required coverages. Contractor agrees to provide proof of insurance for all such subcontractors and subconsultants upon request by the City.

F. Workers' Compensation/Employer's Liability Insurance: Contractor shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 per occurrence for each bodily injury claim, \$100,000 per occurrence for each bodily injury caused by disease claim, and \$500,000 aggregate for all bodily injuries caused by disease claims. Contractor expressly represents to the City, as a material representation upon which the City is relying in entering into this Agreement, that none of the Contractor's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Agreement, and that any such rejections previously effected, have been revoked as of the date Contractor executes this Agreement.

G. Commercial General Liability: Contractor shall maintain a Commercial General Liability insurance policy with limits of \$1,000,000 for each occurrence, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 policy aggregate.

H. Business Automobile Liability: Contractor shall maintain Business Automobile Liability with limits of \$1,000,000 combined single limit applicable to all owned, hired and non-owned vehicles used in performing services under this Agreement

I. Additional Provisions:

(a) For Commercial General Liability and Excess Liability, the policies must provide the following:

- (i) That this Agreement is an Insured Contract under the policy;
- (ii) Defense costs are in excess of policy limits;
- (iii) A severability of interests or separation of insureds provision (no insured vs. insured exclusion); and
- (iv) A provision that coverage is primary and non-contributory with other coverage or self-insurance maintained by the City.

(b) For claims-made coverage:

- (i) The retroactive date must be on or before the contract date or the first date when any goods or services were provided to the City, whichever is earlier

(c) Contractor shall advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or other aggregate limits have been reduced below the required per occurrence limit, the Contractor will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

K. City's Insurance. The City is self-insured pursuant to the Colorado Governmental Immunity Act, C.R.S. §24-10-101 et seq., and shall not be required to obtain any liability, fire, casualty or other insurance as a result of this Agreement. Neither shall any contrary statement contained in any attachment or exhibit hereto be construed to shift the risk of loss or liability to the City.

18. **DEFENSE AND INDEMNIFICATION:**

A. Contractor hereby agrees to defend, indemnify, reimburse and hold harmless City, its appointed and elected officials, agents and employees for, from and against all liabilities, claims, judgments, suits or demands for damages to persons or property arising out of, resulting from, or relating to Contractor's negligence, gross negligence or intentional misconduct in the performance of work performed under this Agreement ("Claims"), unless and to the extent such Claims have been specifically determined by the trier of fact to be attributed to the negligence or willful misconduct of the City. This indemnity shall be interpreted in the broadest possible manner to indemnify City for the above described acts or omissions of Contractor or its subcontractors either passive or active, , except to the extent of the negligence or willful misconduct of City.

B. Contractor's duty to defend and indemnify City shall arise at the time written notice of the Claim is first provided to City regardless of whether Claimant has filed suit on the Claim. Contractor's duty to defend and indemnify City shall arise even if City is the only party sued by claimant and/or claimant alleges that City's negligence or willful misconduct was the sole cause of claimant's damages.

C. Contractor will defend any and all Claims which may be brought or threatened against City and will pay on behalf of City any expenses incurred by reason of such Claims including, but not limited to, court costs and attorney fees incurred in defending and investigating such Claims or seeking to enforce this indemnity obligation. Such payments on behalf of City shall be in addition to any other legal remedies available to City and shall not be considered City's exclusive remedy.

D. Insurance coverage requirements specified in this Agreement shall in no way lessen or limit the liability of the Contractor under the terms of this indemnification obligation. The Contractor shall obtain, at its own expense, any additional insurance that it deems necessary for the City's protection.

E. This defense and indemnification obligation shall survive the expiration or termination of this Agreement.

F. The City agrees that in the event of any claim, litigation, civil action or any other legal or administrative proceeding brought by the City against Contractor, the City shall not be entitled to recover any incidental or consequential damages as defined in the Uniform Commercial Code, including but not limited to indirect or special damages, loss of income or anticipated profits, or down-time, or any punitive damages.

19. **CONFLICT OF INTEREST:** The parties agree that no official, officer or employee of the City shall have any personal or beneficial interest whatsoever in the services or property described herein and Contractor further agrees not to hire or contract for services any official, officer or employee of the City or any other person which would be in violation of the Denver Revised Municipal Code Chapter 2, Article IV, Code of Ethics, or Denver City Charter Sections 1.2.9 and 1.2.12.

20. **NO THIRD PARTY BENEFICIARY:** It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to the City and Contractor, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other or third person or entity on such Agreement, including but not limited to subcontractors and suppliers. It is otherwise the express intention of the City and Contractor that any person or entity other than the City or Contractor receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

21. **TRADE SECRETS AND CONFIDENTIAL INFORMATION:**

A. Contractor shall not at any time or in any manner, either directly or indirectly, divulge, disclose or communicate to any person, firm or corporation in any manner whatsoever any information concerning any matters related to this Agreement which are not subject to public disclosure, including without limitation the trade secrets of businesses or entities doing business with the City and other privileged or confidential information.

B. In the event that this Agreement or any exhibit or attachment is the subject of an open records request by a third party under Colorado law, the City will notify Contractor of such request. If Contractor believes that any material furnished to the City under this Agreement is not subject to disclosure, it shall take whatever action it deems necessary or appropriate to obtain a court order from the Denver District Court to preclude such disclosure by the City.

22. **DISPUTES:** All disputes of whatsoever nature between the City and Contractor regarding this Agreement shall be resolved by administrative hearings pursuant to the procedure established by Denver Revised Municipal Code §56-106(b) et. seq. For the purposes of that procedure, the City official rendering a final determination shall be the City representative identified in Article 2 hereof.

23. **TAXES, CHARGES AND PENALTIES:** The City shall not pay or be liable for any claimed interest, late charges, fees, taxes or penalties of any nature, except as required by the City's Revised Municipal Code.

24. **PARAGRAPH HEADINGS:** The captions and headings set forth herein are for convenience of reference only, and shall not be construed so as to define or limit the terms and provisions hereof.

25. **SEVERABILITY:** It is understood and agreed by the parties hereto that if any part, term, or provision of this Agreement, except for the provisions of the Agreement requiring prior appropriation of funds and limiting the total amount payable by the City, is by the courts held to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term, or provision held to be invalid.

26. **SURVIVAL OF CERTAIN AGREEMENT PROVISIONS:** The parties understand and agree that all terms, conditions and covenants of this Agreement, together with the exhibits and attachments hereto, if any, any or all of which, by reasonable implication, contemplate continued performance or compliance beyond the expiration or termination of this Agreement (by expiration of the term or otherwise), shall survive such expiration or termination and shall continue to be enforceable as provided herein. Without limiting the generality of the foregoing, Contractor's obligations for the provision of insurance, for indemnity to the City and for preserving confidentiality of trade secrets and other information shall survive for a period equal to any and all relevant statutes of limitation, plus the time necessary to fully resolve any claims, matters, or actions begun within that period.

27. **AGREEMENT AS COMPLETE INTEGRATION - AMENDMENTS:** This Agreement, together with the LPA, are intended as the complete integration of all understandings between the parties as to the subject matter of this Agreement. No prior or contemporaneous addition, deletion, or other amendment hereto shall have any force or effect whatsoever, unless embodied herein in writing. No subsequent novation, renewal, addition, deletion, or other amendment hereto shall have any force or effect unless embodied in a written amendatory or other Agreement properly executed by the parties. No oral representation by any officer or employee of the City at variance with the terms and conditions of this Agreement or any written amendment to this Agreement shall have any force or effect or bind the City. Amendments to this Agreement will become effective when approved by both parties and executed in the same manner as this Agreement. This Agreement and any amendments shall be binding upon the parties, their successors and assigns.

28. **LEGAL AUTHORITY:**

A. Contractor assures and guarantees that it possesses the legal authority, pursuant to any proper, appropriate and official motion, resolution or action passed or taken, to enter into this Agreement.

B. The person or persons signing and executing this Agreement on behalf of Contractor, do hereby warrant and guarantee that he/she or they have been fully authorized by Contractor to execute this Agreement on behalf of Contractor and to validly and legally bind Contractor to all the terms, performances and provisions herein set forth.

C. The City shall have the right, at its option, to either temporarily suspend or permanently terminate this Agreement, if there is a dispute as to the legal authority of either Contractor or the person signing the Agreement to enter into this Agreement. The City shall not be obligated to pay Contractor for any performance of the provisions of this Agreement after the City has suspended or terminated this Agreement as provided in this Article.

29. **COUNTERPARTS OF THIS AGREEMENT:** This Agreement shall be executed in two (2) counterparts, each of which shall be deemed to be an original of this Agreement.

30. **NO EMPLOYMENT OF ILLEGAL ALIENS TO PERFORM WORK UNDER THE AGREEMENT:**

A. This Agreement is subject to Division 5 of Article IV of Chapter 20 of the Denver Revised Municipal Code, and any amendments (the "Certification Ordinance").

B. The Contractor certifies that:

- (1) At the time of its execution of this Agreement, it does not knowingly employ or contract with an illegal alien who will perform work under this Agreement.
- (2) It will participate in the E-Verify Program, as defined in § 8-17.5-101(3.7), C.R.S., to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement.

C. The Contractor also agrees and represents that:

- (1) It shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
- (2) It shall not enter into a contract with a sub-consultant or subcontractor that fails to certify to the Contractor that it shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
- (3) It has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement, through participation in either the E-Verify Program.
- (4) It is prohibited from using either the E-Verify Program procedures to undertake pre-employment screening of job applicants while performing its obligations under the Agreement, and that otherwise requires the Contractor to comply with any and all federal requirements related to use of the E-Verify Program including, by way of example, all program requirements related to employee notification and preservation of employee rights.
- (5) If it obtains actual knowledge that a sub-consultant or subcontractor performing work under the Agreement knowingly employs or contracts with an illegal alien, it will notify such sub-consultant or subcontractor and the City within three (3) days. The Contractor will also then terminate such sub-consultant or subcontractor if within three (3) days after such notice the sub-consultant or subcontractor does not stop employing or contracting with the illegal alien, unless during such three-day period the sub-consultant or subcontractor provides information to establish that the sub-consultant or subcontractor has not knowingly employed or contracted with an illegal alien.
- (6) It will comply with any reasonable request made in the course of an investigation by the Colorado Department of Labor and Employment under authority of § 8-17.5-102(5), C.R.S., or the City Auditor, under authority of D.R.M.C. 20-90.3.

D. The Contractor is liable for any violations as provided in the Certification Ordinance. If Contractor violates any provision of this section or the Certification Ordinance, the

City may terminate this Agreement for a breach of the Agreement. If the Agreement is so terminated, the Contractor shall be liable for actual and consequential damages to the City. Any such termination of a contract due to a violation of this section or the Certification Ordinance may also, at the discretion of the City, constitute grounds for disqualifying Contractor from submitting bids or proposals for future contracts with the City.

31. **ELECTRONIC SIGNATURES AND ELECTRONIC RECORDS:** Contractor consents to the use of electronic signatures by the City. The Agreement, and any other documents requiring a signature hereunder, may be signed electronically by the City in the manner specified by the City. The Parties agree not to deny the legal effect or enforceability of the Agreement solely because it is in electronic form or because an electronic record was used in its formation. The Parties agree not to object to the admissibility of the Agreement in the form of an electronic record, or a paper copy of an electronic document, or a paper copy of a document bearing an electronic signature, on the ground that it is an electronic record or electronic signature or that it is not in its original form or is not an original.

32. **NOTICES:** All notices required by the terms of the Agreement must be hand delivered, sent by overnight courier service, mailed by certified mail, return receipt requested, or mailed via United States mail, postage prepaid, if to Contractor at the address first above written, with a copy of any such notice to:

Rush Enterprises, Inc.
555 IH35 South, Suite 500
New Braunfels, TX 78130
Attn: Legal Department

and if to the City at:

Manager of Public Works or Designee
201 West Colfax Avenue, Dept. 608
Denver, Colorado 80202

With a copy of any such notice to:

Denver City Attorney's Office
1437 Bannock St., Room 353
Denver, Colorado 80202

Notices hand delivered or sent by overnight courier are effective upon delivery. Notices sent by certified mail are effective upon receipt. Notices sent by mail are effective upon deposit with the U.S. Postal Service. The parties may designate substitute addresses where or persons to whom notices are to be mailed or delivered. However, these substitutions will not become effective until actual receipt of written notification.

33. **COMPLIANCE WITH ALL LAWS:** All services provided by Contractor shall be performed by Contractor in full compliance with all applicable laws, rules, regulations and codes of the United States, the State of Colorado; and with the Charter, ordinances, rules, regulations and Executive Orders of the City and County of Denver.

34. **NO CONSTRUCTION AGAINST DRAFTING PARTY:** The parties and their respective counsel have had the opportunity to review the Agreement, and the Agreement will not be construed against any party merely because any provisions of the Agreement were prepared by a particular party.

35. **ADVERTISING AND PUBLIC DISCLOSURE:** The Contractor shall not include any reference to the Agreement or to services performed pursuant to the Agreement in any of the Contractor's advertising or public relations materials without first obtaining the written approval of the Manager. Any oral presentation or written materials related to services performed under the Agreement will be limited to services that have been accepted by the City. The Contractor shall notify the Manager in advance of the date and time of any presentation. Nothing in this provision precludes the transmittal of any information to City officials.

36. **CITY EXECUTION OF AGREEMENT:** The Agreement will not be effective or binding on the City until it has been fully executed by all required signatories of the City and County of Denver, and if required by Charter, approved by the City Council.

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EXHIBIT A
EQUIPMENT PURCHASED

<u>Quantity</u>	<u>Item</u>	<u>Price</u>
1	Peterbilt 320 Cab and Chassis with Kann Side loader Body CNG Fueled	\$301,557.77
1	Peterbilt 320 Cab and Chassis with Amrep Front loader Body CNG Fueled	\$275,780.87
17	Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body Diesel Fueled	\$4,131,915.40
12	Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body CNG Fueled	\$3,342,106.20
6	Peterbilt 320 Cab and Chassis with Heil Rear Loader Body Diesel Fueled	\$1,289,358
5	Peterbilt 320 Cab and Chassis with Heil Rear Loader Body CNG Fueled	\$1,260,715
TOTAL PURCHASE AMOUNT:		\$10,601,433.29

Specifications of equipment, and training to be provided by Contractor and the manufacturers' warranties for the equipment are set out on the attached pages, which together with this cover sheet constitute **Exhibit A**.

Deliver shall be to 5440 Roslyn Street, Denver, CO 80216.

Contractor shall deliver the vehicles in twelve separate batches, set out below, the timing of which shall be agreed to between the Contractor and the City. The Contractor shall be paid pursuant to Acceptance Certificates for each of the completed batches delivered. Delivery shall be completed no later than two hundred and forty days from the execution of this Agreement.

Item 17 1_ Peterbilt 320 Cab and Chassis with Amrep Front loader Body <i>CNG</i> Fueled _Trash Truck @ \$275,780.87	<u>\$275,780.87</u>
Item 18 1 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body <i>Diesel</i> Fueled Trash Truck @ \$243,053.85	<u>\$243,053.85</u>
Item 19 4 Peterbilt 320 Cab and Chassis with Heil Rear Loader Body <i>CNG</i> Fueled Trash Trucks @ \$252,143	<u>\$1,008,572.00</u>
Item 20 4 Peterbilt 320 Cab and Chassis with Heil Rear Loader Body	

Diesel Fueled Trash Trucks @ \$214,893

\$859,572.00

Item 21

1 Peterbilt 320 Cab and Chassis with Kann Side loader Body
CNG Fueled Trash Truck @ \$301,557.77 \$ 301,557.77

2_ Peterbilt 320 Cab and Chassis with Heil Rear Loader Body
Diesel Fueled Trash Trucks @ \$214,893 \$429,786.00

1 Peterbilt 320 Cab and Chassis with Heil Rear Loader Body
CNG Fueled Trash Truck @ \$252,143 \$252,143.00

\$983,486.77

Item 22 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
CNG Fueled Trash Trucks @ \$278,508.85

\$ 1,114,035.40

Item 23 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
CNG Fueled Trash Trucks @ \$278,508.85

\$ 1,114,035.40

Item 24 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
CNG Fueled Trash Trucks @ \$278,508.85

\$ 1,114,035.40

Item 25 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
Diesel Fueled Trash Truck @ \$243,053.85

\$972,215.40

Item 26 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
Diesel Fueled Trash Truck @ \$243,053.85

\$972,215.40

Item 27 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
Diesel Fueled Trash Truck @ \$243,053.85

\$972,215.40

Item 28 4 Peterbilt 320 Cab and Chassis with Amrep Barrel loader Body
Diesel Fueled Trash Truck @ \$243,053.85


\$972,215.40

Warranties

Equipment - Notwithstanding anything else in this Agreement or Exhibit A to the contrary, any warranties on the Equipment are limited only to any printed Manufacturers' warranties provided by the applicable Equipment Manufacturer. "Manufacturer" means the entity or entities that manufactured the Equipment, it being understood by the City that Contractor is not a Manufacturer or agent of a Manufacturer. EXCEPT FOR ANY SUCH WARRANTIES MADE BY MANUFACTURERS', WHICH ARE NOT BEING DISCLAIMED HEREBY, THE EQUIPMENT IS SOLD WITHOUT ANY OTHER WARRANTIES OF THE CONTRACTOR, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS EXPRESSLY DISCLAIMED.

Services - Contractor warrants that all services performed by Contractor for the City in conjunction with the sale of the Equipment, including if applicable installation, upfitting and conversion services ("Services"), will be performed in a good and workmanlike manner ("Services Warranty"). The Services Warranty is valid for a period of ninety (90) days from the date the Equipment is delivered to the City or the City's agent. The City's sole and exclusive remedy, and Contractor's entire liability, under the Services Warranty is the repair of any nonconforming portion of the Services. CONTRACTOR PROVIDES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, CONCERNING ITS SERVICES. The Services Warranty is strictly limited to Services performed by Contractor for the City. Contractor does not warrant any services provided by any third-party, including but not limited to installation, upfitting or conversion services; warranties are solely those that are provided by the third-party service provider in such instances.

CCD_LOI_RUSH_TRUCK_EXHIBIT_BARREL_LOADERS

RETURN TO: Department of General Services PURCHASING DIVISION 201 West Colfax Avenue Department 304, 11 th Floor Denver, CO 80202 Phone: (720) 913-8100 FAX: (720) 913-8101	CITY AND COUNTY OF DENVER  DENVER THE BLUE HORN CITY MICHAEL HANCOCK M. YOR	Department of General Services PURCHASING DIVISION www.denvergov.org/purchasing Buyer: Michael Romero 720-913-8122 JAMES P. MCINTYRE DIRECTOR OF PURCHASING
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FORMAL PROPOSAL

Formal Proposal No. 6993

Four (4) Automated Barrel Loader Refuse Trucks
 33,000+ GVWR

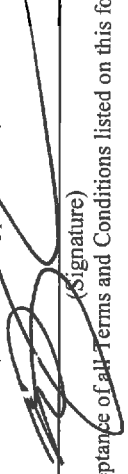
SCHEDULE OF EVENTS

• Proposal Issued	September 27, 2012	
• Deadline to Submit Additional Questions	October 8, 2012	12:00 P.M. Local Time
• Response to Written Questions	October 11, 2012	
• Proposal Due Date	October 17, 2012	3:00 P.M. Local Time

Vendor offers to furnish to the City and County of Denver the materials, supplies, products or services requested in accordance with the specifications and subject to the Terms and Conditions described herein.

VENDOR SIGN HERE

Company Name: Rush Truck Center / Colorado, Inc.
4115 Rush Truck Center Denver

By: Michael Bassel
 (Printed or Typed Name)

 (Signature)

Signature constitutes acceptance of all Terms and Conditions listed on this form and all documents attached.

THIS PROPOSAL MUST BE RETURNED IN A SEALED ENVELOPE WITH THE PROPOSAL NUMBER AND PROPOSAL TITLE ON THE ENVELOPE.

CCD_LOI_RUSH_TRUCK_BARREL_LOADER_EXHIBIT

HardLine | Equipment

7500 Dahlia Street
Commerce City, Colorado 80022
303-500-2176 Phone
303-655-8298 Fax
info@Hardlineequipment.com

To Whom it may Concern,
HardLine Equipment Company takes exception to
7.2 Defective Unit/Defective Fleet Protocol
Amrep and HardLine Equipment are not able to participate in the warranty.

Section 4.2 and 4.3
Amrep complies with the current specification. Amrep will work diligently to assure that
the equipment will be delivered and is working at the highest possible standards.

Thank You
Walt vonDuhn



HardLine | Equipment

7500 Dahlia Street
Commerce City, Colorado 80022
303-500-2176 Phone
303-655-8298 Fax
info@Hardlineequipment.com

Section 7.2

HardLine Equipment and Amrep take Exception to Section 7.2 Defective

Unit/Defective Fleet Protocol

Section 3.7 D #4 & 5

Attached Pictures of In Cab controls are samples that have minimized job related problems.

Section 4.1 & 4.2

Amrep does comply to the intent of quality and protection, no crimp connections, use of circuit breakers, factory sealed wiring harnesses whenever possible and all properly secured.

Amrep does comply to the intent of fasteners, hydraulic systems, fabricated parts and welds as to their desired level of quality and will work whenever possible with the City of Denver to address and meet each item listed below.

Section 4.6-D #3

Trash does not fall on hopper floor.

Section 4.6 D #5

Attached drawing should answer dimensional questions.

Section 4.6 D #9-e

Amrep design believes skip weld provides more strength with less heat. Can provide continuous weld if required.

Section 4.6 K #10&11

Amrep uses self lubricating rollers but design does not require adjustable rollers or wear strips.

Amrep uses self locking nyloc nuts front and c-clips and pins in rear.

Amrep lift arm can easily be lubricated from the ground.

Section 4.6 P 8 & 9

Will work with City of Denver to design ergonomic controls for all the city drivers with in the space allowed by the chassis manufacturer.

Section 4.8 B

Amrep has not built or designed a system of this type for safety issues associated with an automated system working in a confined space.

Thank You

Walt vonDuhn

HardLine Equipment



Romero, Michael P. - Purchasing

From: Walt Vonduhn [waltvonduhn@aol.com]
Sent: Monday, November 05, 2012 9:18 AM
To: Romero, Michael P. - Purchasing
Subject: Re: Action Item!: Additional Information Required-City and County of Denver Bid 6993-4 Barrel Loaders

Categories: Important

Michael,
You inquired about the single pricing on the cylinder and if that price was included in the quote? The price per cylinder was given as a directive to price the different size cylinder seperatly. This is included in the bottom line price.

Thank You
Walt vonDuhn
HardLine Equipment
303-500-2176

-----Original Message-----

From: Romero, Michael P. - Purchasing <Michael.Romero@denvergov.org>
To: waltvonduhn@aol.com (Hardline Equipment) <waltvonduhn@aol.com>
Sent: Mon, Nov 5, 2012 8:22 am
Subject: Action Item!: Additional Information Required-City and County of Denver Bid 6993-4 Barrel Loaders

> Walt is the \$5,072.72 included in the \$100,190 or in addition to it. (Line 7.a-Page 29 of City Specification)

[REDACTED]

Romero, Michael P. - Purchasing

Subject: FW: Ref # 12-085 & 088 + 11-020 & 021

From: phillipsc@rushenterprises.com [<mailto:phillipsc@rushenterprises.com>]
Sent: Wednesday, December 19, 2012 3:28 PM
To: Romero, Michael P. - Purchasing
Subject: RE: Ref # 12-085 & 088 + 11-020 & 021

yes

From: Romero, Michael P. - Purchasing [<mailto:Michael.Romero@denvergov.org>]
Sent: Wednesday, December 19, 2012 3:19 PM
To: Phillips, Craig [DENVER-NEW SALES]
Subject: RE: Ref # 12-085 & 088 + 11-020 & 021

So \$38,735 is the complete up charge for CNG, right?

Regards,

Michael Romero

Senior Buyer
City and County of Denver
Purchasing Division
201 W. Colfax Ave. Dept. 304
Denver, Colorado 80202
Phone: 720-913-8122 Fax: 720-913-8101
e-mail: michael.romero@denvergov.org

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From: phillipsc@rushenterprises.com [<mailto:phillipsc@rushenterprises.com>]
Sent: Wednesday, December 19, 2012 2:54 PM
To: Romero, Michael P. - Purchasing
Subject: RE: Ref # 12-085 & 088 + 11-020 & 021

That was just the charge for the CNG and tanks. There is a charge for the Cummins ISL G of \$ 3600.00

From: Romero, Michael P. - Purchasing [<mailto:Michael.Romero@denvergov.org>]
Sent: Wednesday, December 19, 2012 2:41 PM
To: Phillips, Craig [DENVER-NEW SALES]
Subject: RE: Ref # 12-085 & 088 + 11-020 & 021

So is this the total CNG upcharge for everything including engine swap?

Regards,

Michael Romero

Senior Buyer
City and County of Denver
Purchasing Division
201 W. Colfax Ave. Dept. 304
Denver, Colorado 80202
Phone: 720-913-8122 Fax: 720-913-8101
e-mail: michael.romero@denvergov.org

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From: phillipsc@rushenterprises.com [<mailto:phillipsc@rushenterprises.com>]

Sent: Wednesday, December 19, 2012 2:04 PM

To: Romero, Michael P. - Purchasing

Subject: RE: Ref # 12-085 & 088 + 11-020 & 021

Mike

At the meeting this morning the price of the CNG tanks are going to be \$35,135.00. The tanks will be located on the top. And be 80 DGE. This will give us an overall height of 12'11" I have attached the proposal from Hardline.

Cragi

From: Romero, Michael P. - Purchasing [<mailto:Michael.Romero@denvergov.org>]

Sent: Wednesday, December 19, 2012 1:32 PM

To: Phillips, Craig [DENVER-NEW SALES]; Walt Vonduhn

Cc: Cooper, Tony L. - PW Fleet

Subject: FW: Ref # 12-085 & 088 + 11-020 & 021

Gentlemen , I know you have been working diligently with fleet to get this truck correctly configured; please clarify what will be the total all inclusive cost of the CNG upgrade for each barrel loader refuse truck?

Regards,

Michael Romero

Senior Buyer
City and County of Denver
Purchasing Division
201 W. Colfax Ave. Dept. 304
Denver, Colorado 80202
Phone: 720-913-8122 Fax: 720-913-8101
e-mail: michael.romero@denvergov.org

CITY AND COUNTY OF DENVER
Technical Specifications and Bid Items

For a
Recycle/Trash Barrel Loader Truck

1.0

General Description

A new current model year heavy-duty automated recycle/trash barrel loader truck. The truck shall be a cab over engine with as low of entry as possible right seated/ right hand drive to accommodate as primary use the automated barrel loading of either residential recycle materials or residential trash. The truck shall be powered by a turbo-charged diesel engine, a 66,000 GVWR (plate certified) with 30-yard automated barrel loader body. The truck shall be single right-hand drive with left side passenger seat. Collection operations shall be conducted from the right side seated position. The truck shall be suitable for a minimum of 6 years service (1,000 pick ups/day, 5 days/week) by Solid Waste Management in mixed material (paper, cardboard, mixed containers including glass, aluminum and steel containers) automated barrel recycle operations and also in automated barrel loading of residential trash. The truck's recycle/ trash body shall operate at maximum efficiency and speed when the truck engine is at "low idle" approximately 800-rpm or less, revving engine shall not increase pick up or compaction speed /efficiency. The truck shall be a hydraulic push-out trash eject type, no tip to dump ejection systems. The truck shall be fully equipped and road ready, easily capable of transporting a fully packed minimum 30 yard load over the road into automated recycling systems in recycling stations and, into trash transfer facilities or into landfills.

1.1

Standard Factory Equipment

All standard factory equipment shall be included with the vehicle/equipment; no deletions of standard factory equipment will be permitted unless specifically superseded in these specifications. Accessories not specifically mentioned herein but necessary to furnish a complete unit ready for use shall also be included.

1.2

Government Requirements (where applicable)

The vehicle/equipment shall be built to, and perform in accordance with, all the requirements of the latest edition of the following standards and specifications:

- FHWA, Federal Highway Administration
- SAE, Society of Automotive Engineers Specifications
- FMVSS, Federal Motor Vehicle Safety Standards
- DOT, Department of Transportation Regulations
- AWS, American Welding Society Standards
- PUC, Public Utilities Commission (Colorado)

1.3 Workmanship and Durability

Workmanship throughout the vehicle/equipment shall conform to the highest standards. Durability shall be sufficient to allow safe and efficient operation of the equipment/vehicle.

1.4 Completion of Bid Items and Alternates

Vendor shall complete each line item in "Offered Equipment" and "Cost" columns in the following manner:

- A. Provide vehicle/equipments technical information: in "Offered Equipment" provide technical information as requested and provide cost of item in "Cost" column.
- B. Included Standard Equipment: in "Offered Equipment" column provide technical information as requested for standard equipment in, "Cost" column write NC for "No Charge".
- C. Differences: in "RED" ink in "Offered Equipment" column adjacent to Description of Equipment provide information on the item being offered, in "Cost" column provide cost if there is a bid item cost.
- D. Vendors shall break out and list costs for each specification section. Failure to break out proposed costs may cause proposal to be non-responsive. Breakout costs will be used for comparisons clarifying cost issues and if deletions to the specifications need to be made.
- E. Failure to enter information into any column could result in the proposal being considered non-responsive.

1.5 Major Areas of Concern

	Description of Concern
A.	Right Side Operator Cab Area to include: <ol style="list-style-type: none"> 1. Steering wheel belly room. 2. Shoulder leg and hip room. 3. Head room 4. Operator's vision. 5. Floor height and step distances. 6. Ergonomic layout of vehicle and recycle body controls. 7. Ease and speed of operation of collection and packing functions.
B.	Maneuverability: The ability of the truck to effectively, safely and efficiently maneuver in Denver's space restricted alleys, transverse alley-to-street drainage depressions and make tight turns either into or out of alleys from narrow high crowned streets with vehicles parked in the streets
C.	Ability to efficiently load <ol style="list-style-type: none"> 1. Plastic barrels/carts 2. Loading width for space restricted alleys 3. Loading height and barrel/cart travel to avoid overhead utility lines/wires and private property.

Loader Refuse Trucks
CONFIGURATION #1

D.	Mirror width for use in narrow and obstructed areas to include:
1.	Overall extended mirror width.
2.	Minimum mirror width.
3.	Ability for mirrors to be hit by obstructions (branches etc) and absorb the hit without damage.
4.	Ability for mirrors to be reset or adjusted into position without operator leaving operator's station.
E.	Warranty:
1.	Ability and cost to obtain a 5-year warranty on cab and chassis.
2.	Ability and cost to obtain a 5-year warranty on barrel loader body, hydraulic pump, hydraulic motors, hydraulic cylinders and controls.
3.	Location of warranty providers.
F.	Service Ability:
1.	Ability to easily service cab and chassis items that require regular (yearly or less) servicing and maintenance.
2.	Ability to easily service barrel loader body components/items that require regular (yearly or less) adjusting, servicing and maintenance.

2.0

2.1

Build Status of Vehicles:

Contractor and all sub vendors after receipt of the City's purchase order shall provide:

The primary Contractor (prime vendor) shall be responsible for providing within 15 business days to the City a "Preliminary Build Status Plan" to include but not limited to:

1. The "Build Status Plan" shall include sufficient detail to assure that the ordered units will meet specifications and be built to the highest quality standards and be delivered on time.
2. Placement date of initial order with the cab and chassis manufacture.
3. Cab and chassis manufacturer's date of order acceptance. Written order confirmation is required.
4. Placement date of initial order with the body manufacture.
5. Body manufacturer's date of order acceptance. Written order confirmation is required.
6. Build date for cab and chassis to include start date and completion date.
7. Build date for body to include start date and completion date.
8. Delivery date of the cab and chassis to the sub vendor's body manufacturer.
9. Beginning and completion dates for installation of the body on the cab and chassis.
10. Ship date for the completed vehicle (cab and chassis with body) from sub vendor's body manufacturer to Denver and which location shipped to.
11. Contractor and sub vendors local vehicle preparation time.
12. Delivery of a completed vehicle meeting specifications to the City.

Loader Refuse Trucks
CONFIGURATION #1

2.2 The Contractor shall contact all sub vendors:

The Contractor shall contact all sub-contractors providing accessories and equipment for the vehicle (s) and provide the sub-contractors with the a list of all accessories and equipment, manufacturer's order confirmation, order number, vehicle specifications, build date and delivery date to dealer from the vehicle manufacturer on the ordered vehicle. It is the primary selling dealer's responsibility to assure that the sub-contractors orders the accessories and equipment and has the items in stock and is prepared to install the accessories and equipment items when the vehicle arrives at the dealership.

3.0 Basic Requirements or Approved Equal.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality; comprehensive information in relation to proposed alternative products shall be provided with the bid so a full technical comparison/ assessment can be made.

3.1 Basic Vehicle or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	<p>Low floor height cab over engine with, front hinged doors with electric roll up/down windows,</p> <ol style="list-style-type: none"> 1. Tandem axle 66,000 lb. GVWR (plate certified), 2. Wheelbase approximate 223 inch, to accommodate the new exhaust after treatment devices. 3. Effective (clean) cab to axle approximate 210-inch, 4. After frame 60" and 5. Front tire cut angle 50° 6. Wall-to-Wall turning diameter 81 ft. 7. Both the cab and chassis and body vendors shall verify wheelbase is appropriate for truck and specified body. 	<p>Make: <u>PETERBILT</u> Model: <u>320</u></p> <p>Rating: <u>66,000</u> lbs</p> <p>Wheelbase: <u>210</u> "</p> <p>C to A: <u>192</u> "</p> <p>A F: <u>60</u> "</p> <p>Cut Angle: Left <u>50</u> ° Right <u>50</u> °</p> <p>Turn Dia. : Left <u>79.8</u> ft Right <u>79.4</u> ft</p>	<p>\$ <u>113,579</u></p>
B.	<p>Right side operator position configuration is very important for operator comfort and efficiency. The right side operator position shall accommodate operators of various physical sizes providing good visibility, steering wheel/belly clearance, and shoulder width room. Also all the controls for operating the attached equipment shall be in an ergonomic layout/configuration that promotes minimal operator movement, operator comfort and operation efficiency.</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

Loader Refuse Trucks
CONFIGURATION #1

<p>C.</p> <p>Frame: 1. Rating 66,000-lbs. GVWR minimum, 2. Heavy-duty 110,000-psi full channel heat-treated steel, with main frame 2,086,000 in-lb. RBM and deep frame section 3,235,000 in-lb. minimum.</p>	<p>Frame Rating: <u>66,000</u> -lbs Yield Strength: <u>120,000</u> psi Section Modulus/rail: <u>17.8</u> in³ Frame RBM/rail: <u>2,136,000</u> lbf-in</p>	<p>\$ <u>517</u></p>
<p>D.</p> <p>All components that require regular servicing shall be easy to access and be located as much as possible to protect the components from road splash. Access to rear engine mounts or transmission removal should not require the removal of electrical wiring, hydraulic hoses, air tanks or air dryers. Air dryer shall be easy and quick to access for servicing.</p>	<p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>INC</u></p>
<p>E.</p> <p>Towing Provisions: 1. Tow hooks, two front and two rear, frame mounted. 2. Air brake 3/8" female quick-connect hook up system on right front of the vehicle for wrecker air brake connection. Quick-connectors shall be easily accessible and protected behind the bumper and angled rearward away from the bumper so that hose connection is not difficult. 3. A check valve shall be provided at the vehicles air tank to prevent air loss.</p>	<p><input checked="" type="radio"/> Yes No Make: <u>Quick Connect</u> Model: <u>3/4"</u></p>	<p>\$ <u>500</u></p>
<p>F.</p> <p>Keying: 1. Keys keyed alike Ignition, Door, (same) and Toolboxes (same), 2 standard sets per vehicle. 2. Additional 5 key sets 3. If the City has similar make and model trucks in fleet the trucks shall be keyed the same as existing trucks.</p>	<p>Price per additional key set: \$ _____ X 5= _____ <input checked="" type="radio"/> Yes No</p>	<p>\$ NC \$ <u>NC</u> \$ <u>NC</u></p>

3.2

Engine or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	<p>Engine:</p> <p>Cummins ISX-11.9 liter, VGT turbocharged diesel engine, rated at 330 hp @ 2,100 rpm, torque 1,350 lb/ft @ 1,200 rpm, 2,100 rpm governed includes:</p> <ol style="list-style-type: none"> Engine shall utilize DEF (diesel exhaust fluid) to meet current EPA regulations and reduce NOx Engines shall be electronically controlled with following components: <ol style="list-style-type: none"> Engine protection system to monitor low oil pressure, high coolant temperature and low coolant level that will prevent component damage with manual over-ride on truck engine. Low oil pressure. High oil temperature. High coolant temperature. Low coolant level. High transmission oil temperature. Idle shutdown timer. Speed limiter top gear and cruise. Computer controlled fast idle and PTO protection. Thermos bottle stopper-type dipstick. Magnetic drain plug. Delco-Remy 22-SI, 145 amp alternator. Delco-Remy 42 MT, 12v starter with over-crank protection. 	<p>Make: <u>Cummins</u> Model: <u>ISX-12</u> HP: <u>330</u> @ <u>1350</u> rpm Torque: <u>1350</u> @ <u>1200</u> rpm Emissions Rating: <u>EPA CERTIFIED</u></p> <p><input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Make: <u>PYCOM</u> Model: <u>160 AMP</u> Make: <u>PYCOM</u> Model: <u>12</u></p>	<p>\$ <u>5186</u></p>
B.	<p>Power Take Off (PTO)</p> <ol style="list-style-type: none"> Transmission direct mounted Chelsea 890 series with hydraulic pumps direct mounted to Chelsea 890 PTO at rear of the transmission. PTO control electrically actuated from inside cab. PTO speed limiter shall be connected to the engine computer not to an external overspeed box (EOS). PTO shall efficiently operate all hydraulic systems at engine "low idle" 750 rpm or less. Increasing engine speed above 800 rpm shall not improve hydraulic operations except when ejecting the trash load. 	<p>Make: <u>Chelsea</u> Model: <u>890</u> Location: <u>TOP MOUNT</u></p> <p><input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No PTO idle rpm: <u>750</u></p>	<p>\$ <u>N/C</u> \$ <u>N/C</u> \$ <u>N/C</u></p>

Loader Refuse Trucks
CONFIGURATION #1

C.	<p>Filtration:</p> <ol style="list-style-type: none"> Oil: Fleetguard LF3000 full flow/bypass oil filter. Fuel: Racor 690RP12 fuel/water separator with thermostatically controlled fuel line heater. 	<p>Make: <u>FLEETGUARD</u> Model: <u>LF-3000</u> Make: <u>DAVCO</u> Model: _____</p>	<p>\$ <u>STD</u> \$ <u>INC</u></p>
D.	<p>Engine Air Intake:</p> <ol style="list-style-type: none"> The air intake shall be on the far left side of the vehicle at cab height. The air intake shall be positioned so that it can not draw in exhaust gases. Air filter dual element dry type with air inlet restriction indicator located in cab 	<p>Yes <input checked="" type="radio"/> <u>NO</u> <u>Right Side 1 CAB</u> No <input type="radio"/> _____ Make: <u>FY</u> Model: <u>FY6 160617</u></p>	<p>\$ <u>STD</u></p>
E.	<p>Exhaust Meeting 2010 EPA Standards:</p> <ol style="list-style-type: none"> Exhaust discharge shall be on the right side of the vehicle The exhaust after treatment device shall be horizontally mounted above the engine so as to not obstruct maintenance/repairs underneath the truck. Maximum exhaust system height shall not be higher than the highest point on the body or truck. Horizontal with a vertical chrome stack and stainless steel exhaust guard that will easily fit up to Denver's exhaust gas evacuation system. Exhaust discharge shall be above roofline and exhaust gases shall not discolor the body or be drawn into the operator's cab. 	<p>Trap Make: <u>Cummins</u> Model: _____ Location: <u>Center Back 1 CAB</u> Yes <input checked="" type="radio"/> No <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/></p>	<p>\$ <u>STD</u></p>
F.	<p>Fuel Tank:</p> <ol style="list-style-type: none"> Fuel tank 80 gallons minimum, The tank shall frame mounted. Fuel tank may be combined with body supplier's hydraulic tank. 	<p>Size: <u>80</u> gallons Location: <u>LEFT SIDE</u></p>	<p>\$ <u>33</u></p>
G.	<p>Diesel Enhancement Fluid Tank:</p> <ol style="list-style-type: none"> Location behind fuel tank Size 6-gallons minimum Tank fill opening shall be easily identified as "DEF Fluid Only" and shall not accept the entrance of a standard diesel fuel nozzle. 	<p>Location: <u>LEFT SIDE Behind CAB</u> DEF Tank Volume: <u>8</u> gallons Yes <input checked="" type="radio"/> No <input type="radio"/></p>	<p>\$ <u>INC</u></p>
H.	<p>Coolant Hoses:</p> <ol style="list-style-type: none"> Gates Blue Stripe hoses With constant torque hose clamps. 	<p>Make: <u>GATES</u> Model: <u>BLUE STRIPE</u> Yes <input checked="" type="radio"/> No <input type="radio"/></p>	<p>\$ <u>STD</u></p>

Loader/Refuse Trucks
CONFIGURATION #1

<p>I. Fan: 1. Fan clutch heavy-service-duty with automatic fan control. 2. The fan shall operate/ cycle according to engine coolant and transmission coolant temperature.</p>	<p>Make: <u>Heaton</u> Model: <u>2-SPRO</u> <input checked="" type="radio"/> Yes <input type="radio"/> No \$ <u>570</u></p>
<p>J. Air System: 1. Air compressor Bendix 18.7-cfm Tu-Flo minimum 2. Air tanks mounted horizontal inside frame. 3. Air drain valves shall be 1/4-turn brass with "Flag" style handle and air blast routed away from the person operating the valve. 4. The drain valves shall be installed in an easy to access and operate position in a central location 5. The valve bracket shall be permanently labeled (engraved): "Drain Air Tanks Daily" 1/2" font size "Air Valve 1" "Air Valve 2" "Air Valve 3" 1/4" font size 6. Air lines shall be color-coded nylon type.</p>	<p>Make: <u>Bendix</u> Model: <u>18.7</u> Capacity: <u>18.7</u> cfm Location: <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No \$ <u>570</u></p>
<p>K. Cold weather starting aids on truck engine. 1. Block heater, Phillips "Zero-Start" 120vAC, 1500 Watt, engine coolant temperature controlled to: a. Turn "on" at 40°F engine coolant temperature. b. Turn "off" at 55°F engine coolant temperature. 2. The plug-in station shall have 2 LED indicator lights to: a. Light when plugged into "hot line" to show "hot line is energized." b. Light when engine coolant drops below 40°F. 3. Plug-in shall be mounted next to the driver's door, protected from mechanical and weather damage. Heater plug shall be a male standard grounded 15 amp rated plug. Location to be mutually agreed to at installation. 4. A decal or information plate shall be provided describing how the system functions. The decal/plate shall be heavy-duty UV protected and capable of withstanding pressure washing and other normal vehicle functions. 5. Cold weather starting assist (no either allowed).</p>	<p>Make: <u>Phillips</u> Model: <u>ZERO START</u> On Temperature: <u>40</u> Off Temperature: <u>55</u> <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No Location: <u>DRIVER DOOR</u> <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No Type: <u>N/A</u> \$ <u>300</u> \$ <u>INC</u> \$ <u>INC</u> \$ <u>INC</u> \$ <u>—</u></p>

Loader Refuse Trucks
CONFIGURATION #1

3.3 Transmission and Drivetrain or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	<p>Transmission: Transmission shall be an Allison New World HD4560-RDS-P, wide ratio, set up for 5-speeds with the following components:</p> <ol style="list-style-type: none"> 1. Transmission and rear differential gearing shall be optimized for "Best" fuel economy. 2. The shift point calibrations both primary and secondary shall be factory S-1 set for reducing the shift point below maximum governed speed but the engine shall not drop below the peak torque point. On engines with 2,100 rpm full-load governed speed the shift point is reduced 200 rpm. For engines with higher or lower full-load governed speeds the shift point will need to be determined on a case-by-case basis. 3. Transmission interface wiring for Allison MD/HD transmission. 4. Electric push-button transmission controls shall be located on the "dog house" not under the joystick armrest. Location to be mutually agreed upon. 5. Transynd TES 295 automatic transmission fluid. 6. Allison High-Capacity filters for extended drain interval of 75,000 miles or 36 months. 7. Transmission water-to-oil cooler. 8. Remote mounted transmission filter. 9. Magnetic drain plug. 	<p>Make: <u>Allison</u> Model: <u>4560 RDS</u> Speeds: <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>1340</u> \$ <u>DNK</u> \$ <u>DNK</u> \$ <u>DNK</u> \$ <u>DNK</u> \$ <u>DNK</u> \$ <u>DNK</u></p>
B.	<p>Automatic Work Brake Hold Activated with: 1. Service brake automatically applies when the lift arm is activated. 2. Manually very easy to access button or switch.</p>	<p>Make: <u>DANA - SPICEL</u> Model: <u>D46170</u> Gear ratio: <u>4.56</u> <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No Top Speed: <u>60</u> mph level <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>421</u></p>
C.	<p>Rear Axles: 1. Eaton single reduction, capacity 46,000-lbs. 2. Driver controlled main power divider locking differential. 3. Oil pump. 4. Axle temperature sensor. 5. Axle ratio for approximate 60-mph top speed. 6. Oil seals, Union 76 Triton EP 75W-90 synthetic gear lubricant. 7. Magnetic drain plug.</p>	<p>Make: <u>DANA SPACB</u> Model: <u>D2000F</u> Capacity: <u>20,000 ±</u></p>	<p>\$ <u>341</u></p>
D.	<p>Front Axle: 1. Eaton, capacity 20,000-lbs. minimum with oil seals and Union 76 Triton EP 75W-90 synthetic gear lubricant.</p>	<p>Make: <u>DANA SPACB</u> Model: <u>D2000F</u> Capacity: <u>20,000 ±</u></p>	<p>\$ <u>570</u></p>

Loader Refuse Trucks
CONFIGURATION #1

Description of Equipment	Offered Equipment	Cost
<p>E.</p> <p>Springs:</p> <ol style="list-style-type: none"> 1. Front leaf with graphite impregnated spring pin bushings. Front: capacity 20,000-lbs. minimum. 2. Rear Hendrickson HMX-460 Haulmaax vari-rate spring system. Rear: capacity 46,000-lbs. minimum. 	<p>Make: <u>PETERBILT</u> Model: <u>20000</u></p> <p>Capacity: <u>20000</u> - lbs</p> <p>Make: <u>HENDRICKSON</u> Model: <u>HAULMAAX</u></p> <p>Capacity: <u>46000</u> - lbs</p>	<p>\$ <u>570</u></p> <p>\$ <u>397</u></p>
<p>F.</p> <p>Brakes:</p> <ol style="list-style-type: none"> 1. Bendix, 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads. 2. Bendix, 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads. 3. Brake chambers type 2824, size 24 chamber. 	<p>Front Make: <u>BENDIX</u> Model: <u>ADB22X</u></p> <p>Disc Size: _____ in</p> <p>Rear Make: <u>BENDIX</u> Model: <u>A0822X</u></p> <p>Front Chamber: _____</p> <p>Rear Chamber: _____</p>	<p>\$ <u>570</u></p>
<p>G.</p> <p>Anti-Lock Brake System / Automatic Traction Control system:</p> <ol style="list-style-type: none"> 1. Anti-Lock Brake System (ABS): Eaton 6S/6M with ATC, 6-channel with (6 sensors & 6 modulators) and 5-9 psi crack pressure relay valve. 2. Automatic Traction Control (ATC) shall work in conjunction with the Eaton ABS brake system in low traction situations limiting torque to least loaded tire allowing most loaded tire to receive torque and pull the vehicle. The ATC system in conjunction with the Interaxle Driveline Lock shall provide traction control very similar to the Driver Controlled Differential Lock system. 3. Interaxle Driveline Lock (IADL) to lock front and rear drive axles together. The interaxle differential lock shall be automatically locked via the ATC or manually locked by the driver. The IADL switch shall activate a flashing LED warning light. 4. Air lines shall be color-coded nylon type. 	<p>Make: <u>EATON</u> Model: <u>6S/6M</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>INC</u></p> <p>\$ <u>137</u></p> <p>\$ <u>570</u></p> <p>\$ <u>570</u></p>
<p>H.</p> <p>Air Dryer, (No Approved Equals)</p> <ol style="list-style-type: none"> 1. Bendix AD-IP with heated steel reservoir, automatic moisture ejector and cable operated air tank drain valves accessible from outside of vehicle. 2. Air dryer shall be installed on the outside of the frame rail in a location that is easy access and does not exceed 15-minutes to service unit. 	<p>Make: <u>BENDIX</u> Model: <u>A015-EP</u></p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>271</u></p> <p>\$ <u>INC</u></p>
<p>I.</p> <p>Driveline:</p> <ol style="list-style-type: none"> 1. Eaton Permalube type U-joints. 	<p>Make: <u>DANA-SPICER</u> Model: <u>1510</u></p>	<p>\$ <u>570</u></p>

J.	Power Steering: 1. TRW with 2-qt. reservoir.	Make: <u>SABER</u> Model: <u>SP110 DUAL</u> Reservoir Size: <u>2qt</u>	\$ <u>445</u>
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3.4 Electrical System or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	Alternator: 1. Alternator shall be a heavy duty, internally regulated, output 160-amp minimum.	Make: <u>PACCAR</u> Model: <u>160AMP</u>	\$ <u>18</u>
B.	Batteries: 1. Three Group 31 "maintenance free" batteries with a total CCA of 1950 minimum. 2. Battery location frame mounted left hand side. 3. Battery shut-off switch easy to see and access. 4. Jump start provision easy to access. 5. Battery cables (00) stranded copper minimum.	Make: <u>PACCAR</u> Model: <u>PREMIUM</u> Quantity: <u>3</u> CCA's: <u>2100</u> Location: <u>LEFT SIDE BACK-UP</u> <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No Cable Size: <u>00</u>	\$ <u>570</u> \$ <u>351</u> \$ <u>94</u> \$ <u>570</u>
C.	Circuit protection: 1. Circuit breakers with manual reset, no fuses. 2. Circuit breaker panel shall be easy to access. 3. Circuit breaker panel shall be clearly labeled for easy identification.	Type Protection: <u>CIRCUIT BREAKER</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>570</u>
D.	Wiring: 1. Wiring shall be color coded with hot stamped wire numbers. 2. All wiring shall be run in sealed wiring looms to reduce corrosion from magnesium chloride products	<input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No	\$ <u>570</u>
E.	Body Builders Junction Box: 1. Body builder's junction box shall be mounted behind the cab 2. Terminal shall be marked for easy identification.	Location: <u>BACK FRAME</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>199</u>
F.	Back Up Alarm: 1. Back up alarm 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter. 2. The alarm shall be mounted out of the vehicle's rear wheel splash area.	dBa rating: <u>107</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>27</u>

Loader Refuse Trucks
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G.	<p>Cab and Chassis Lights:</p> <ol style="list-style-type: none"> 1. Halogen sealed beam headlights, 12v. 2. Daytime running lights. 3. Wiring shall be sealed modular plug-in type. 4. Marker lights LED type. 	<p> <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No </p> <p>Type: <u>LEO</u></p>	<p>\$ <u>43</u></p>
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3.5 Cooling System or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	Cooling system with coolant recovery tank capable of maintaining engine manufacturer's recommended operating temperatures at an elevation of 6,800' in 120° F low humidity ambient conditions shall be provided.	<input checked="" type="radio"/> No	\$ <u>570</u>
B.	Coolant protection shall be -34° F.	Coolant Type: _____ Protection Level: <u>-34</u> °	\$ <u>570</u>
C.	Fleetguard coolant filter WF2071.	Make: <u>PRESQUAM</u> Model: <u>WF2071</u>	\$ <u>570</u>

3.6

Tires and Wheels or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	<p>Tires:</p> <ol style="list-style-type: none"> 1. Tires 315/80R22.5, tubeless, 20-ply, load range L. 2. Front: Michelin XZUS, Steer Tires. 3. Rear dual: Michelin XZUS, Steer Tires 	<p>Make: <u>Michelin</u> Model: <u>XZUS</u> Make: <u>Michelin</u> Model: <u>XZUS</u></p>	<p>\$ <u>580</u> \$ <u>3712</u></p>
B.	<p>Wheels:</p> <ol style="list-style-type: none"> 1. Disc, 10-hole, Hub piloted type, Single nut, Meets ISO Standard 4107. 2. White powder epoxy coated finish. 3. Front 22.5" x 9" 4. Rear 22.5" x 9" 	<p>Make: <u>ACCURIDE</u> Model: <u>22.5X7</u></p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No Size: <u>22.5</u> x <u>9</u> Size: <u>22.5</u> x <u>9</u></p>	<p>\$ <u>174</u></p>

3.7

Interior or Approved Equal

	Description of Equipment	Offered Equipment	Cost
A.	<p>Right Side Operating Controls:</p> <ol style="list-style-type: none"> 1. Vehicle operation shall be only from right side of vehicle. 2. Right side driver's controls shall be ergonomically laid out for maximum driver efficiency in operating the automated collection body in either recycle material of residential trash pick up. 	<p>Location: <u>Right Side</u> <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>765</u></p>

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Description of Equipment	Offered Equipment	Cost
<p>3. Since the vehicle will be used in automated recycle and residential trash collection with a "operate at idle" hydraulic system and a ergonomic multi-position joystick the transmission shifter location needs to be in a location the driver can easily access but not in the conventional location directly adjacent to the driver where it will be covered by the automated body's joystick control. With an "operate at idle" hydraulic system the driver will not be required to shift the vehicle into "neutral" at each collection and after collection back into "drive" to proceed to next stop.</p> <p>4. Doors:</p> <ol style="list-style-type: none"> Left and right doors shall be front hinged. Left and right doors shall have electric full roll up/down windows. 	<p>Shifter Obstructed: Yes <input type="radio"/> No <input checked="" type="radio"/></p> <p>Shifter Location: _____</p> <p>Joystick Location: <u>Body MFJ</u> <u>SHIFTER LOCATION DEFINED UPON LOCATION AND SIZE OF THE BODY WITH CONTROL PANEL.</u></p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>INC</u></p> <p>\$ <u>STD</u></p>
<p>B. Driver Viewing Environment/Area:</p> <ol style="list-style-type: none"> Requested SAE J1750 and SAE J1050a "Target Evaluation" method operator view area information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive. Vendor using the "Target Evaluation" method shall provide with bid, top view drawings with dimensions of the visibility values from the operator's seat at eye level for operators of the following percent quartile sizes: <ol style="list-style-type: none"> 5th % male height 1554 mm or 61.18" 50th % male height 1668 mm or 65.67" 95th % male height 1783 mm or 70.20" Drawings shall be on 11" x 17" paper ("B" size drawing paper) for easier reading. Good operator exterior visibility is a major safety concern and increasing operator viewing area and eliminating "blind spots" is beneficial to the City 	<p>Drawings Provided: <input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p><u>ATTACHED LIMITED SAE J1750.</u> <u>PETERBUT DOES NOT HAVE SAE J1050A</u> <u>DATA FOR STD.</u> <u>CAB IS BEING MODIFIED AT THIS TIME</u></p> <p>Paper Size: <u>11</u> " X <u>17</u> "</p> <p>Provide Materials: <u>SAE J1750</u></p>	<p>\$ _____</p>
<p>C.</p> <ol style="list-style-type: none"> Required Submittals with Bid: Requested information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive. 	<p>Provide Materials: <u>SAE J1750</u></p>	<p>\$ _____</p>

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Description of Equipment	Offered Equipment	Cost
<p>2. Vendor shall provide with bid, drawings with dimensions and photographs of the proposed cab interior for review.</p> <p>3. Interior dimensions measured:</p> <ul style="list-style-type: none"> a. Belly Room: seat back to steering wheel. b. Leg Room: seat front edge to brake pedal. c. Head Room: seat cushion to ceiling. d. Torso Room: Width from door to doghouse or other obstruction. e. Seat fore/aft travel: f. Seat height travel: g. Steering Wheel Knuckle Clearance: distance to closest object h. Floor Height: measured ground to cab floor. i. Cab Step Heights: measured from ground. j. Steering Wheel Tilt and Telescoping: <p>4. Location of transmission shifter: should not be obstructed by automated barrel loader's joystick.</p>	<p>Seat full forward: <u>11</u>" Seat full back: <u>16</u>" Seat full forward: <u>6</u>" Seat full back: <u>12</u>" Seat full lowered: <u>43</u>" Seat full raised: <u>51</u>" Smallest measurement: <u>23</u>" Travel: <u>3</u>" Travel: <u>2</u>" Clearance: <u>4</u>" Height: <u>35</u>" 1st Step: <u>15</u>" 2nd Step: <u>26 1/2</u>" Tilt: <u>5</u>° Telescoping distance: <u>0</u>" Yes No</p>	<p>\$ <u>570</u></p>
<p>D. Engine Cover "Doghouse"</p> <ul style="list-style-type: none"> 1. The engine cover "doghouse" shall be recessed to accommodate the ergonomic positioning of the automated barrel loader controls. 2. The vehicle manufacturer shall work with the body supplier to assure that the controls are the most ergonomic possible to assure operator comfort and reduce repetitive motion injuries. 3. The transmission shifter shall not be obstructed by the automated barrel loader joystick. The transmission shifter should be located in a location convenient to the operator but not directly adjacent to the driver's side. Since the vehicle has "operate at idle" hydraulic system the transmission does not require shifting into and out of "neutral" at each stop. 4. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. 5. The City, body vendor and the vehicle supplier shall mutually determine control locations after Contract award. 	<p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>---</u></p>
<p>E. Upfitter's Switch Panel:</p> <ul style="list-style-type: none"> 1. The vehicle manufacturer shall provide for the automated body manufacture an upfitter's switch panel for automated body control switches. 	<p><input checked="" type="radio"/> Yes <input checked="" type="radio"/> No</p>	<p>\$ <u>---</u></p>

Vendor/Sub Vendor: Blue Truck Centers

CCD_LOI_RUSH TRUCK_BARREL LOADER EXHIBIT

Loader Refuse Trucks
CONFIGURATION #1

Description of Equipment	Offered Equipment	Cost
<p>2. The panel location shall be in an ergonomic location and shall not require more than 30° head movement and be within easy reach of driver's of various sizes and physiques.</p> <p>3. The switch panel shall have permanently labeled and lighted rocker switches for all optional sundries equipment and lights etc.</p>	<p>Yes <input checked="" type="radio"/> No <input type="radio"/></p> <p>Yes <input checked="" type="radio"/> No <input type="radio"/></p>	
<p>F. Seats:</p> <p>1. Driver's right seat shall be air suspension Bostrom, high back driver's seat, gray vinyl with cloth insert and armrests.</p> <p>2. Left side be spring suspension Bostrom, mid-back seat, gray vinyl with cloth insert and armrests</p>	<p>Make: <u>PETERBILT</u> Model: <u>HIGH BACK</u></p> <p>Make: <u>PETERBILT</u> Model: <u>LOW BACK</u></p>	<p>\$ <u>125</u></p> <p>\$ <u>870</u></p>
<p>G. Instrumentation:</p> <p>1. Instrumentation shall include speedometer, engine hourmeter, tachometer, voltmeter, coolant temperature, oil temperature, oil pressure, fuel level and air pressure with low-pressure alarms (light, audible).</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>140</u></p>
<p>H. Floor Covering:</p> <p>1. Floor covering shall be heavy-duty black rubber/vinyl flooring.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>210</u></p>
<p>I. Steering:</p> <p>1. Steering controls shall comfortably accommodate operators of various sizes, from short and small to tall and larger.</p> <p>2. Steering tilt easy to adjust</p> <p>3. Telescoping easy to adjust,</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Tilt: <input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Telescoping: Yes <input checked="" type="radio"/> No <input type="radio"/></p>	<p>\$ <u>570</u></p> <p>\$ <u>570</u></p>
<p>J. Air Conditioning:</p> <p>1. Factory installed cab R134A air conditioning</p> <p>2. Cab shall be insulated to include floor, firewall, roof and walls.</p>	<p>Travel In-Out: _____ in</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>718</u></p>
<p>K. Radio:</p> <p>1. Radio AM/FM stereo with two speakers.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>149</u></p>
<p>L. Fire Extinguisher:</p> <p>1. Extinguisher ABC, 5-lb. dry type rechargeable</p> <p>2. Installed on the driver's side.</p> <p>3. Location labeled with 1" letters on outside of the cab.</p>	<p>Type: <u>ABC</u></p> <p>Location: <u>DRIVERS SIDE</u></p>	<p>\$ <u>37</u></p>
<p>M. Grab Handles:</p> <p>1. One each on exterior of cab for operator and passenger assist and one interior for passenger.</p> <p>2. Grab handles shall provide adequate clearance to other objects to provide easy access and clearance to prevent pinch or other hazards.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>570</u></p>

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3.8

Exterior or Approved Equal:

	Description of Equipment	Offered Equipment Provide Materials:	Cost
A.	Vendor shall provide with bid drawings with dimensions and photographs of the proposed cab exterior including mirrors for review. Failure to submit the requested information may make bid non-responsive.		\$ <u>STD</u>
B.	Cab Design: 1. Heavy-duty or severe-duty type with steel or aluminum body. 2. High visibility tilt forward design. 3. Low floor cab over with steps mounted to body. 4. Maximum step height 15".	Body Rating: <u>ALUMINUM</u> Body Material: <u>ALUMINUM</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Step Height: _____ in	\$ <u>STD</u>
C.	Front Bumper: 1. The front bumper shall be straight and fit as close to the front of the cab as possible with adequate reinforcement. Bumper shall not be driven back into the cab due to minor impacts. 2. The bumper shall be chrome	Bumper Type: <u>STEEL</u> Reinforced on outside corners: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Bumper Finish: <u>CHROME</u>	\$ <u>176</u> \$ <u>-</u> \$ <u>STD</u>
D.	Engine Accessibility: 1. Engine fully accessible and serviceable, 2. Cab shall tilt forward for access 3. Tilt shall be by easily operated momentary switch and 12v DC electric pump located on right side of vehicle.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>STD</u>
E.	Splash/Spray Suppression: 1. Spray suppression skirting, Fleet Engineering Inc. 4" brush filament P/N 997-70174, black polyethylene, (800.333.7890) 2. Local distributor: Fleetpride 7725 Dahlia St Commerce City CO (303.288.1166) 3. Skirting shall be installed on the front steer axle wheel housing to reduce road spray from being thrown up onto the truck's rearview mirrors.	Brand: <u>FLEET</u> P/N: <u>997-70174</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>500</u>
F.	Paint: 1. Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufacturer's procedures. 2. Preparation to include: a. Removing all mill scale and slag. b. Variprime 615S self-etching primer or approved equal.	Make: <u>DUPONT</u> Type: <u>IMRON</u> Color: <u>WHITE</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>STD</u>

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	<p>c. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. d. Paint to be applied with all body members painted.</p>	<p style="text-align: center;"> <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No </p>	
<p>G. Mirrors: "No Approved Equal"</p> <ol style="list-style-type: none"> Rear view mirrors Moto Mirror Model 7-5400 "Flat Back Traditional" 7" x 16" motor head, remote, heated, stainless steel left and right mounted on the cab. Convex 8" stainless steel mirrors mounted under primary mirrors. A left hand down mirror shall also be provided to cover front and side blind spot for shorter drivers under 5'-6" tall. Overall cab width including mirrors 112" maximum. 		<p>Overall mirror full extended width: <u>110</u> inches Overall mirror width with left side mirror folded in: <u>104</u> inches</p> <p>Make: <u>Moto Mirrors</u> Model: <u>WJYCB457</u></p>	<p>\$ <u>INC</u> \$ <u>INC</u></p>

<p>INITIAL CAB AND CHASSIS SUB TOTAL COST</p>	<p>\$ <u>137,961</u></p>
<p>MANUFACTURER/ DEALER DISCOUNT(S) (As Applicable)</p>	<p><\$ <u>—</u> ></p>
<p>FINAL CAB AND CHASSIS SUB TOTAL COST</p>	<p>\$ <u>137,961</u></p>

4.0 Dealer Provided Optional Equipment

4.1 Electrical Systems:

- A. All non-factory wire connections (splices, connectors, etc.) shall be soldered and shrink tube insulated with adhesive/melttable sealant, thick wall polyolefin shrink tubing (3M EPS-300 or equal). No non-factory crimp connections allowed. No cutting or splicing into the factory wiring harnesses allowed.
- B. All accessories (strobe lights, operator controls, light bar, etc.) shall be wired through a 12-VDC constant-duty solenoid and controlled by bus bar mounted and permanently labeled auto-resetting circuit breakers. The solenoid shall be wired to the key switch.
- C. All dealer/vendor installed items, which require connecting into the vehicle's electrical system shall be done using an OEM factory modified wiring kit whenever possible.
- D. All non-factory wiring shall be encased in a totally sealed wiring harness (no plastic split loom) to prevent corrosion from magnesium chloride. The wiring harness shall be well secured to the truck with neoprene aircraft stainless steel tubing clamps. Rubber grommets shall be used at all areas where the wiring passes through areas that could damage the wiring. Unprotected wiring in any application is unacceptable.
- E. Electrical cables and wiring harnesses shall be neatly run and clamped with neoprene aircraft stainless steel tubing clamps. Clamp spacing shall not exceed 18-inches.
- F. Dielectric grease shall be applied to all electrical plug terminals and connections to reduce corrosion.

Market Adjusted Price: \$138,961
D.R.M.C 20-64(A4) (10-10-13)

** Note: Amrep does comply to the intent of Fastners, Hydraulic Systems, Fabricated Parts and Welds as to their desired level of quality and will work wherever possible with the City of Denver to address and meet each item listed below.

Formal Proposal No.6993

Loader Refuse Trucks
CONFIGURATION #1

4.2 Fasteners:

- A. Grade 5 (SAE or USS) or 8.8 (metric) minimum, bolts, nuts, washers minimum. Vendor shall use Grade 8 or 10.9 for all critical areas or where good engineering practice suggests.
- B. All fasteners shall be zinc plated to prevent corrosion.
- C. Anti-Seize: all fasteners shall have Fel Pro C5A Anti-Seize compound applied before assembly to prevent corrosion, rusting, galling and aid in equipment servicing and repair.
- D. All fasteners shall be of appropriate length, diameter and strength (grade) for the application.
- E. Bolts and screws shall extend a minimum of 1-1/2 threads beyond the nut and maximum of 6 threads past the nut.
- F. Flat washers shall be used under bolt heads and nuts.
- G. Lock nuts (nylon insert, metal, slotted, castle nuts) shall be used lock-washers are not acceptable.

4.3 Hydraulic Systems:

- A. All hydraulic circuits shall be pressure relief protected.
- B. Hydraulic hoses shall be Parker ST 451 (tight bend radius) 2-wire braid hose meeting SAE-100R17 specifications where the hose meets operational criteria or approved equal.
- C. Hydraulic hoses shall have swivel fittings on both ends. Hose ends shall be located to facilitate easy component replacement.
- D. High-pressure hydraulic hose shall not be used for suction lines.
- E. Close/tight radius 90° elbow fittings shall not be used if short, medium or long drop steel stem 90° elbow fittings can be used. Over use of 90° elbows shall not be permitted.
- F. Hydraulic hoses and rigid lines shall be run parallel where possible; routing shall look neat and well planned.
- G. Rubber cushioned metal hydraulic clamps shall be used on all hydraulic ridged lines and hoses at proper intervals for supporting the line/hose 36" maximum distance. Clamps shall be securely mounted to the equipment.
- H. Hydraulic hoses and lines shall not be routed near exhaust, close to rotating components or over, around or through sharp edges. Rubber grommets shall be used at all areas where the hydraulic lines through areas that could damage the lines.
- I. Galvanized fittings and thread tape shall not be used.
- J. Hydraulic hoses shall be covered with protective spiral nylon anti-chaffing wrap or sock type protective sleeves at all areas where chafing/rubbing could cause premature wear/failure.
- K. Hydraulic oil tanks shall magnetic drain plug, oil level and temperature gauge.
- L. Hydraulic hoses over 4' long shall be labeled on both ends for easy identification.
- M. Shut off valves 1/4-turn on each side of filter.

4.4 All fabricated parts, brackets etc. shall have all sharp corners, edges etc. radiused or rounded for safety.

4.5 Welds:

- A. All welds shall meet AWS (American Welding Society) standards for the type weld, material joined and welding method.
- B. Weld joints shall have proper design and fit for the application.
- C. Welds joints shall have proper penetration and be smooth in appearance with no undercuts or overlaps at edge of weld.
- D. Weld joints shall be properly prepared with cut ends ground to remove all slag, create a smooth surface with no porosity and beveled end.
- E. Welds shall be full length to prevent "rust bleed" from non-welded seams.

4.6 Compactor Barrel Loader Body or Approved Equal

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality; comprehensive information in relation to proposed alternative products shall be provided with the bid so a full technical comparison/ assessment can be made.

Description of Equipment	Offered Equipment	Cost
<p>A. Manufacturer Qualifications:</p> <ol style="list-style-type: none"> Units shall be completely assembled, mounted and ready for operation. Parts not detailed shall be constructed in accordance with the best standard practice of the industry at the time of construction. Only new models in current production, which are catalogued by the manufacturer and for which printed literature and specifications are available, will be accepted. The loader body shall be the product of a manufacturer actively engaged in the production of automated side loading refuse collection vehicles of this size and capacity as specified. The City may consider only those bidders who can demonstrate that a minimum of 100 units have been manufactured and have been in use for (1) year. Name (s) of users and contact personnel shall be supplied with bid. All accessories not specifically mentioned herein, but necessary to furnish a complete unit ready for use shall also be included. 	<p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p>	
<p>B. A current year, new automated recycle/trash barrel side loader refuse body meeting ANSI Safety Standard Z245.1 standards of at least 30-cubic yard capacity, with push-out full ejection of trash loads and a low-height lift, non-kick out trash barrel lift for use in narrow alleys with many side and overhead obstructions or approved equal, installed with the following equipment:</p>	<p>Make: Amrep Model: AMHASLTPO-19</p> <p>Body Capacity: 37 yds³</p> <p>Tailgate Capacity: 3 yds³</p> <p>Trash expulsion Method: Full Push-out Non-kick Out Can Lift</p>	<p>\$ N/C</p>
<p>C. Vendors shall within 45 days of contract award submit drawings to the City showing that the truck will have no interference problems associated with the placement of all major components to include but not be limited to: System, body lift cylinders, front/rear bumpers, air filter, exhaust system, air dryer, air tanks, fuel tank, battery box, daily fluid checks/fills, hopper, hopper cover, tailgate drip pan, elevator, carriage, hydraulic tank, hydraulic valves, steps/ladders, electrical junction box, access doors, tool holders etc.</p>	<p>Yes X No</p>	

Push Truck Loader
Vendor/Sub Vendor: *Apple Inc Equipment*

Description of Equipment	Offered Equipment	Cost
<p>D. The compactor body shall be:</p> <ol style="list-style-type: none"> 1. Capacity, 27.5 cu yds excluding loading hopper, approximate 2. Body design, rounded rectangular shape curved sides mounted length wise on the truck chassis setup for right side barrel loading. 3. Hopper floor shall be level with the main body floor to allow full ejection of all materials. 4. Material: <ol style="list-style-type: none"> a. Body Dimensions, <ol style="list-style-type: none"> 1) Hopper capacity, 2.5 cubic yards, approximate 2) Maximum width of the body and pick up arm in down pick up position shall not exceed 102" width. No portion of the arm in down pick up position shall stick out past the truck or trash body. The pick up arm shall be "zero grab" capable, pick up barrels at the side of the truck without extending the pick up arm. 3) Length of body, hopper and arm, 267", approximate 4) Body height above ground, 12' 6" maximum 5) Height lift arm dump 30-90-gal. above ground, shall not exceed 14'-0" or 168". 6) Lift arm reach, 0" to 109" (9'-1") full extension to center of barrel. 7) The grabber shall grip containers at a height of 24" from bottom of the barrel b. Body Materials (minimum requirements) <ol style="list-style-type: none"> 1) Hopper Floor: 1/4" Hardox 450 steel 145,000 psi yield. 2) Hopper Sidewall: 4 mm Hardox 450 steel 145,000 psi yield. 3) Body Floor: 3/16" Hardox 450 steel 145,000 psi yield. 4) Body Sidewalls: 1/8" Hardox 450 steel 145,000 psi yield. 5) Body Roof: 1/8" Hardox 450 steel 145,000 psi yield. 6) Tailgate: 1/8" Hardox 450 steel 145,000 psi yield... 7) Body Posts: 2" x 2" x 1/4" formed steel, 2 required, 1 at front of the body/hopper and 1 at rear of body/door 	<p>Accurate Data Must Be Provided Body Capacity: <u>29.5</u> yds³³ Body Shape: <u>rounded rectangular</u></p> <p>Level Floor: Yes <input checked="" type="checkbox"/> No Note: Trash does not fall on hopper floor.</p> <p>Hopper Capacity: <u>5.5</u> yds³ Body Width: <u>102</u> in Total Width in Down Pick Up Position: <u>102</u> inches</p> <p>Body Length: <u>276</u> in ** in ** Includes rear door @37" Body Height: <u>146</u> in Max 90 gallon barrel dump height: <u>168</u> in see Attached Drawing. Maximum arm reach: <u>109</u> in Grab Height: <u>12-21</u> in Lowest height depends on how far out the arm is.</p> <p>Steel Specs: Steel Type: <u>Hardox 450</u> Thickness: <u>1/4"</u> Yield: <u>145,000</u> psi Steel Type: <u>Hardox 450</u> Thickness: <u>4mm</u> Yield: <u>145,000</u> psi Steel Type: <u>Hardox 450</u> Thickness: <u>3/16"</u> Steel Type: <u>Hardox 450</u> Thickness: <u>1/8"</u> Yield: <u>145,000</u> psi Steel Type: <u>Hardox</u> Thickness: <u>1/8"</u> Yield: <u>145,000</u> psi Steel Type: <u>Hardox 450</u> Thickness: <u>1/8"</u> Yield: <u>145,000</u> psi Steel Type: <u>Formed</u> Thickness: <u>1/4"</u> Yield: <u>80,000</u> psi</p>	

Vendor/Sub Vendor: Rusa Truck Center
Hardware Super

Description of Equipment	Offered Equipment	Cost
<p>8) Longitudinal Member: 8" x 2" x 0.180" wall structural steel tube, 2 required, 1 each on lower side of body extending from front to rear body posts</p> <p>9) Cross Members: 5 required minimum a. 2 members: 6" x 2" x 3/16", b. 1 member: 8" x 2" x 3/16" c. 2 members: 2" x 2" x 3/16" d. Cross members shall be on lower side of body extending from front to rear body posts and full body width e. Cross members shall be fully and continuously welded to the hopper and body floors</p> <p>10) The body design and construction shall ensure that "No" body or component distortion occurs when the body is repeatedly packed at full rated capacity.</p>	<p>Structural Steel Type: Tubing Thickness: 1/4" Yield: 58,000 psi</p> <p>Steel Type: Structural Tubing A500 Grd. B Size: 6" x 2" x 3/16" Size: 8" x 2" x 3/16" Size: 2" x 2" x 3/16" Yes X No Note: Rounded body allows the cross members between longitudinalinals .</p> <p>Yes No X Amrep Design believes skip weld provides greater strength with less heat. Can provide continuous weld if required. Yes X No</p>	
<p>E. Hopper:</p> <ol style="list-style-type: none"> The hopper capacity shall be approximately 5 yds³ Hopper floor shall be flat The hopper floor rear section (entrance into body) shall extend out into the main body approximately 18" past the vertical front wall to provide additional wear resistance. Hopper Sump: <ol style="list-style-type: none"> The hopper on its front side shall have a transverse sump to allow cleaning out of debris that accumulates behind the packer blade and collect liquids. Clean-out doors on both sides of the body Hopper sump doors shall be approximately 14" x 13" Hopper sump door hinges shall be front hinged and corrosion resistant Doors shall be sealed to prevent liquids from leaking. The door latches shall be easy and quick to operate. A clean out tool with easy to use and access storage brackets shall be provided. Exact location shall be mutually determined at installation 	<p>Hopper Capacity: 5.5 yds³ Yes X No</p> <p>Floor Distance into Body: 24" ** in</p> <p>**Trash does not fall on hopper floor but on Eject Blade which extends 24" into packer.</p> <p>Sump Size: 10" x 4" average x 90" wide Sump Volume: 16 gallons *Note: Amrep design has four doors Yes X No Clean Out Door Size: 10" x 36" Total: 2 doors ea. side. Yes No X Material: Mild Steel - 12 gauge *Bottom doors are sealed w/over center clamps. Yes X No Latch Type: Over Center and rubber tension straps Yes X No</p>	<p>\$ N/C</p>

Russ Truck Boston
 The Amrep Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>F.</p> <p>Hopper Cover:</p> <ol style="list-style-type: none"> 1. A hopper cover shall be provided that seals the hopper/body area and prevents loose material from being sucked out of the hopper/body when the trash truck is traveling along roads at City or highway speeds. 2. The hopper shall hydraulically fold out of the hopper front wall to seal the hopper area. 3. The hopper cover shall be either PVC plastic or metal however the cover needs to be easy to change out/repair in case of damage 4. When the hopper cover is in the down/hopper covered position the loading functions shall be disabled to prevent dumping on top of the hopper cover. 	<p>Yes X No</p> <p>Describe Function: <u>Folds out of hopper front wall.</u></p> <p>Material: <u>12 gauge steel skin over steel frame</u></p> <p>Yes X No</p>	<p>\$ <u>N/C</u></p>
<p>G.</p> <p>Packing and Ejection Mechanism:</p> <ol style="list-style-type: none"> 1. Packer plate shall be actuated by horizontally opposed and crossed telescopic hydraulic cylinders. 2. Pack panel shall have an auto-pack that is actuated with a completed cycle of the pick up arm. 3. The auto-pack shall be able to be easily set on the main control panel for: <ol style="list-style-type: none"> a. Pack every pick up cycle b. Pack every 3rd pick up cycle 4. A container dump lock out shall prevent dumping behind the packer plate. 5. The pack panel shall: <ol style="list-style-type: none"> a. The packer panel face and top surface shall be 1/4" AR400 minimum for wear resistance. b. The packing panel shall exert 70,000-lb force minimum across its entire face to highly compact the load. c. For packing the panel shall travel into the main body a sufficient distance for proper packing and to prevent trash fall-back into the hopper. 6. Packer panel follower plate shall be: <ol style="list-style-type: none"> a. Multi-piece folding design that retracts/stores inside the hopper on the front wall of the hopper. b. The follower plate shall utilize heavy-duty greaseless piano type hinges between the follower plates c. Constructed with a steel frame, 10-gauge steel, 50,000 psi yield minimum. 	<p>Yes X No</p> <p>Yes X No</p> <p>Switch Location: <u>Main Control Panel</u></p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes - no dumping back of packer panel.</p> <p>Material: <u>Hardox AR400</u> Thickness: <u>1/4"</u></p> <p>Packing Force: <u>70,000</u> lbs/in² min.</p> <p>Pack Distance into the Hopper: <u>24"</u> in</p> <p>Amrep Design has lower blade to prevent trash falling back into hopper.</p> <p>Number of Panels: <u>2</u></p> <p>Storage Location: <u>Inside Hopper</u></p> <p>Hinge Type: <u>Piano Type</u></p> <p>Lubrication Required: Yes No X</p> <p>Thickness: <u>3/8"</u> Yield: <u>50,000psi</u></p> <p>Reinforced Steel Plate, no frame required.</p>	<p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p>

Vendor/Sub Vendor: Rush Truck System
Hardox

Loader Refuse Trucks
CONFIGURATION #1

<p>d. The cover sheet shall be 10-gauge steel, 50,000 psi yield minimum and easy to replace when damaged. e. The follower panel plates shall run inside wall mounted tracks and a center support using permanently lubricated rollers for reduced maintenance. f. The packer follower plate shall have a protective shield that will keep trash from bypassing between the packer panel and the follower plate, get in front of the pack panel where the compaction cylinders are housed.</p>	<p>Reinforced Steel Plate, No Frame required Thickness: <u>3/8"</u> Yield: <u>50,000psi</u> How Fastened: <u>Studs in blade, plate bolted down</u> Roller Type: <u>Steel</u> Roller Number: <u>2</u> Size: <u>2"</u> dia x <u>6"</u> w & <u>1.25"</u> d. x <u>5"</u> w Permanently Lubricated: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Shield Material: <u>Rubber Wiper</u> \$ <u>N/C</u></p>
<p>7. Hydraulic cylinders that are in a location where they can be in contact with the trash or are subject to mechanical damage shall have nitrated piston rods with a positive-contact M2 tool steel scraper blade to shave off burrs, trash and other materials that could damage the cylinder seals, packing or other cylinder components, or "approved equal design" 8. Cylinders shall be single stage, with packing force as follows: 1st stage: 70,000 lbs minimum. 9. Packing mechanism shall be designed so that no contact to the tailgate can occur during loading or ejecting of refuse. 10. The packing panel shall be reinforced with formed cross members so no distortion occurs during operation. 11. Packer Panel Track: a. The pack panel shall ride on 1/4" AR500 abrasion resistance steel for wear resistance from constant packing. b. The wear strips shall be easily replaceable.</p>	<p>Make: <u>Amrep</u> Model: <u>509-2362</u> Cylinder Warranty: <u>2 years</u> Rod Material: <u>Chrome Plated Steel Rod</u> Scraper Blade Material: <u>Dual Floating Bronze</u> \$ <u>N/C</u> offered "As Equal" cylinder Force: <u>70,000 psi-lb force @ 2000 psi</u> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - Reinforced packer panel Material: <u>AR500</u> Thickness: <u>1/4" top</u> <u>5/16-3/8" Chromium sides and bottom</u> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> How Replaced: <u>Torch out weld back in.</u> \$ <u>N/C</u></p>
<p>H. Retention Teeth (Sharks Teeth): 1. Steel recycle material/trash retention teeth 9 teeth required on a 7" spacing located just inside the material receiver body to help prevent compacted materials from dropping back into the hopper. 2. Teeth shall be heavy gauge triangular shaped steel welded to the body.</p>	<p>Quantity of Teeth: <u>9</u> Tooth Size: <u>4"</u> \$ <u>N/C</u> Amrep design uses steel panel to block 1/3 of hopper opening to hold trash in place Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> *Amrep will provide teeth if required.</p>
<p>I. Compacted Trash Ejection System: 1. Load ejection shall be a combination of the packer panel and the ejection panel working together in an efficient manner to fully eject the load to include:</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe Ejection Cycle: <u>As Described Below</u> <u>2 sweeps of packer panel and 3</u> <u>sweeps of ejection panel minimum</u> \$ <u>N/C</u></p>

Rush Truck Lines
Vendor/Sub Vendor: Handlow Gayle

<p>Truck Engine Speed @ Ejection: <u>1200</u> rpm</p> <p>Amrep Full Pushout operates as described here. We also offer a second program with added passes of both blades to add to trash removal.</p> <p>Note: Ejections cylinders do not "pack" but only push trash out of rear door open there is minimal resistance.</p> <p>1st Stage Force: <u>47,492</u>psi-lb force @ <u>1800</u> psi 2nd Stage Force: <u>31,792</u>psi-lb force @ <u>1800</u> psi 3rd Stage Force: <u>19,232</u>psi-lb force @ <u>1800</u> psi</p>	<p>\$ <u>N/C</u></p>
<p>a. Truck engine increases rpm to approximately 1,200 rpm for ejection cycle only.</p> <p>b. The packer panel cycling thru 2 full pack cycles and stopping in the full rear position to help block compacted trash from falling back into the hopper.</p> <p>c. The ejection panel traveling rearward approximately 1/3 of body distance to make partial load ejection.</p> <p>d. Truck pulls forward sufficient distance to provide a clear dump area behind the truck for a second ejection push.</p> <p>e. The ejection panel traveling approximately 2/3 of body distance to make a 2nd partial load ejection.</p> <p>f. Truck pulls forward sufficient distance to provide a clear dump area behind the truck for a second ejection push.</p> <p>g. The ejection panel traveling full body length to make final and complete load ejection.</p> <p>h. Ejection panel and packer panel retract to home or ready to use position</p> <p>2. Ejection cylinders shall have three stages, with packing force as follows:</p> <p>a. 1st stage: 119,000 lbs.</p> <p>b. 2nd stage: 97,000 lbs.</p> <p>c. 3rd stage: 76,000 lbs.</p>	<p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p>
<p>J. Tailgate:</p> <p>1. Operation, lock/unlock, raise and lowered using two hydraulic cylinders, minimum.</p> <p>2. Hydraulic operated locks :</p> <p>a. Locks at 9 tailgate point's minimum shall secure tailgate door lock.</p> <p>b. Outside of body tailgate locks: 2 required</p> <p>c. Inside body side locks 4 required, 2 per side</p> <p>d. Bottom tailgate locks 3 required</p> <p>e. Locks shall automatically actuate when rear door lift cylinders are actuated.</p> <p>3. Tailgate shall be strong enough not to deform or crack during use.</p> <p>4. Tailgate shall have an easy to replace one-piece rubber gasket. The gasket shall extend across the entire bottom and up the sides a minimum of 24".</p>	<p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p>

Vendor/Sub Vendor: Dasco Truck Bodies
Heavy Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>5. Tailgate trough/catch basin shall be provided to catch liquid leakage.</p> <p>a. The trough shall self empty when the tailgate is raised for load ejection.</p> <p>b. A 2" NPT dia bung shall be provided for draining liquids without raising the tailgate.</p> <p>6. Tailgate unlatched alarm; light/buzzer shall indicate when door is unlatched.</p> <p>7. Tailgate safety prop rods shall be provided to hold the tailgate manually open.</p> <p>8. Tailgate hydraulic lines shall have restrictors to prevent sudden tailgate descent.</p> <p>9. Underride protection, shall be bolt on type, DOT approved.</p> <p>10. All tailgate hinge points shall be easily greaseable from the ground.</p> <p>11. Center mounted Truck Lite LED brake light shall be provided.</p> <p>12. Whelen Model L360 Super LED 360° beacon with branch guard L360BGB, (1) required shall be mounted on top of tailgate.</p> <p>13. Tailgate mounted safety lights sides shall be</p> <p>a. Whelen IONSMC -Wide Angle LED color (Amber) safety lights (4 required).</p> <p>b. The lights shall be located 1/3rd and 2/3rd up the tailgate just inside the outer edge of the tailgate on each side</p>	<p>Yes - Drip Catch Standard.</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Make: <u>Truck Lite</u> Model: <u>91 (7" LED)</u></p> <p>Make: <u>Whelen</u> Model: <u>L360</u></p> <p>Make: <u>Whelen</u> Model: <u>IONSMC - LED</u></p> <p>Location: <u>outer edge, side of tailgate</u></p> <p><u>1/3 & 2/3 up sides of tailgate.</u></p>	<p>\$ _____</p> <p>\$ <u>N/C</u></p> <p>\$ _____</p> <p>\$ <u>N/C</u></p> <p>\$ _____</p> <p>\$ <u>N/C</u></p>
<p>K. Container Loading System:</p> <p>1. Orientation, right or curb side of body.</p> <p>2. Loading arm system shall consist primarily of an extension/retraction arm, a container gripping system and a tracked lift/lower and dump track system or an approved equal with zero (negligible) barrel kick out. The truck will pick up in very narrow alleys with close obstructions on sides and overhead.</p> <p>3. A drawing showing the full sweep arc for a 90-gallon plastic barrel shall accompany the bid. The drawing shall show the sweep of all corners of the plastic barrel. Failure to provide an adequate drawing may make the bid non-responsive</p> <p>4. Performance:</p> <p>a. Cycle time</p> <p>1) Retracted zero reach: 8 to 10 seconds, from pick-up through raise, dump, lower, and release.</p>	<p>Orientation Side: <u>Curb Side</u></p> <p>Yes - As Described</p> <p>Yes X No See Attached Drawing.</p> <p>Retracted Cycle Time: <u>8-10</u> seconds</p>	<p>\$ _____</p> <p>\$ <u>N/C</u></p>

Vendor/Sub Vendor: Push Truck Centers
Hardware Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>2) Full 84" reach: 15 seconds, from pick-up through raise, dump, lower, and release.</p> <p>b. Container grippers shall pick up all City used 32, 60, standard City 95 -gallon and 110-gallon plastic containers with a 36" clearance circle around the container.</p> <p>c. The container dump movement shall keep the trash barrel essentially level with no bottom end of container kick out that could damage adjacent property (zero clearance). The truck will pick up in very narrow alleys with close obstructions on sides and overhead</p> <p>d. The pick up arm shall be "zero grab" capable, pick up barrels at the side of the truck without extending the pick up arm.</p> <p>e. Hydraulic inhibitor shall prevent dumping on top of the hopper cover.</p> <p>5. Lift/Lower system shall:</p> <p>a. Track system for vertical lift of containers or approved equal design.</p> <p>b. Hydraulic motor lift system with barrel grabber assembly climbing a heavy-duty chain running between the tracks or approved equal.</p> <p>c. Lifting capacity, 750 lbs (constant through lifts) at full extension.</p> <p>d. Barrel lift system shall have a brake system capable of stopping a full load (750 lbs) in any part of the lift/dump cycle and holding the weight without any settling.</p> <p>6. Loader arm shall pick up, dump, and return to ground 32, 60, standard City 95 -gallon and 110-gallon plastic containers. Operation shall be performed without the operator leaving the cab.</p> <p>7. Loader Arm Construction:</p> <p>a. The loader arm to vertical mast shall be fully welded on all sides with chamfered weld joints to assure full and deep penetration at all joints.</p> <p>b. The connection between the slide-out roller tube and mast shall have all heavy-duty bearing attachment points heavily braced/reinforced to prevent cracking/failure due to flexure.</p> <p>8. Loader arm shall be actuated by 2 hydraulic cylinders (extension/retraction and grip/release) and 1 hydraulic motors (raise/lower):</p>	<p>Full Reach Cycle Time: <u>8-15</u> seconds</p> <p>Container Sizes Grippers will safely and efficiently <u>32, 60, 95, and 110" gallon</u></p> <p>Clear Radius Required: <u>36</u> inches</p> <p>Held Level - See drawing of can being dumped for clearances.</p> <p>Kick Out: <u>Zero</u> inches</p> <p>Yes X No</p> <p>Yes X No Note: Chain lifts barrel assembly between tracks.</p> <p>Yes X No</p> <p>Yes No</p> <p>Lifting Capacity: <u>750</u> lbs</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p> <p>\$ <u>N/C</u></p>
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Tasso Truck Center
Hydraulic Equipment

Vendor/Sub Vendor:

Loader Refuse Trucks
CONFIGURATION #1

	<p>Extension Distance: <u>84</u> inches minimum</p>	<p>\$ <u>N/C</u></p>
<p>Yes X No</p>	<p>Yes X No</p>	<p>\$ <u>N/C</u></p>
<p>Yes X No</p>	<p>Yes X No</p>	<p>\$ <u>N/C</u></p>
<p>Yes X No</p>	<p>Yes X No</p>	<p>\$ <u>N/C</u></p>
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<p>Yes X No</p>	<p>Yes X No</p>	<p>\$ <u>N/C</u></p>
<p>Yes X No</p>	<p>Yes X No</p>	<p>\$ <u>N/C</u></p>

Rush Truck Center
Vendor/Sub Vendor: Harlowe Gripnet

Loader Refuse Trucks
CONFIGURATION #1

	<p>6. The standard grippers shall be provided and capable of handling the City's round 32, 60 and standard City 95-gallon and 110-gallon containers.</p> <p>7. Grippers shall grip the container at approximately 24" above the bottom of the barrel</p> <p>8. The grippers shall rotate on tapered roller bearings.</p> <p>9. Grippers shall not release the container during the dumping process.</p>	<p>Yes X No</p> <p>Barrel Grip Height: 10-21 inches minimum, 24" okay Varies as arm reaches outward. Yes X No Yes X No</p> <p>\$ N/C</p>
<p>M. Service Hoist System:</p> <ol style="list-style-type: none"> The service hoist lift system shall provide excellent access to truck components located under the trash body The service hoist system shall lift the front of the body up above the truck frame rail approximately 36" minimum for access The hoist system shall be powered by a 12vDC hydraulic pump with sufficient power to raise a fully loaded trash body. The system shall use hydraulic oil from the main hydraulic oil tank. A trash body anti-lowering safety pins or legs shall be provided: <ol style="list-style-type: none"> The pin/legs shall lock the trash body preventing lowering of the body. The pin/legs shall be sufficient to support 3X's the fully loaded weight of the body incase truck maintenance is required and the trash load cannot be ejected Pin storage in a sleeve, that the pin cannot fall/vibrate etc. out of shall be provided. The pin shall be attached to the hoist/trash body/chassis with chain/cable to prevent loss. Safety legs shall rest in a saddle to prevent bouncing around. 	<p>Yes X No</p> <p>Lift Height @ front: 36 inches</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>3X's</p> <p>Note: Amrep offers standard safety legs hinged to bottom of body. Can provide a second set to rest in saddle if required.</p>	<p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p>
<p>N. Hydraulic system: Operate at Standard Low Idle.</p> <ol style="list-style-type: none"> Hydraulic pumps 2 required (body, arm) PTO "hot shift" driven thru a Chelsea 890 series direct drive off the transmission. The gear pumps shall have an automatic pump oil bypass system in normal bypass mode when the hydraulic system is not energized. Hydraulic system shall be Parker Hannifin Corporation designed and certified and use as many as possible Parker components to assure compatibility of the system and 3 year Parker warranty for using a complete Parker system. Hydraulic components shall be warranted in Denver CO by a local Denver Parker representative. 	<p>Number of Pumps: 2</p> <p>Transmission Direct Drive: Yes X No</p> <p>Make: Chelsea Model: 890</p> <p>Oil Bypass: Yes X No</p> <p>Parker Hannifin Corp. Certification and 3-Year Warranty shall be provided with bid. No certification or warranty info may make bid non-compliant</p> <p>Local Denver Parker Warranty Yes X No</p> <p>Local Parker Warranty Vendor: Hardline Equipment</p> <p>Tandem Gear Pumps P75 and P50</p>	<p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p>

Denver Truck System
Vendor/Sub Vendor: HARDLINE EQUIPMENT

Loader Refuse Trucks
CONFIGURATION #1

<p>3. Hydraulic system shall operate all hydraulic functions except load ejection at engine low idle speed (750 rpm) and shall not require shifting transmission out of "Drive" gear or applying "Parking" brake. Increasing engine speed shall not increase system speed or pressures. For ejecting the trash load the engine rpm may increase to 1,200 rpm, (ejection function only not load packing)</p> <p>4. The hydraulic gear pump circuits shall be split into 2 separate hydraulic circuits with independent valve bodies (no cross feed).</p> <p>a. Larger gear pump circuit shall control the pack and ejection circuit</p> <p>b. Small gear pump circuit shall control the arm circuits</p> <p>5. Operating pressure.</p> <p>a. Body: 2,500 psig maximum.</p> <p>b. Grabber arm: 2,500 psig maximum</p> <p>6. Hydraulic valves shall have LED lights on valve coils to aid in troubleshooting the system.</p> <p>7. Hydraulic Cylinders shall:</p> <p>a. Be properly sized to efficiently and continuously perform their function without any cylinder degradation.</p> <p>b. The trash ejection cylinders, tailgate cylinders and any other cylinders that are in a location where they can be in contact with the trash or are subject to mechanical damage shall have nitrated piston rods with a positive-contact M2 tool steel scraper blade to shave off burrs, trash and other materials that could damage the cylinder seals, packing or other cylinder components.</p> <p>8. Hydraulic reservoir located on left side in front of left front dual tires.</p> <p>9. Hydraulic Reservoir:</p> <p>a. Capacity 55-gallons minimum.</p> <p>b. Pressurized 5 psig minimum (prevent pump cavitation).</p> <p>c. Oil level and temperature gauge.</p> <p>d. Suction and pressure shut-off valves very easy to access and operate.</p> <p>e. Magnetic drain plug.</p> <p>f. Bung for Future Hydraulic Oil Pre-heater System</p> <p>1) Possible future installation bung for an Arctic Fox Hydra</p>	<p>Note: Arm Works in Gear at Idle.</p> <p>Pump Operating Speed: 750 rpm</p> <p>Pump Output: 20-29 gpm @ 750 rpm</p> <p>Does System Require Higher Ejection rpm</p> <p>Yes X No</p> <p>Maximum Flow Rate: 29 gpm on arm p75 pump</p> <p>Maximum Flow Rate: 20 gpm on packer P50 pump</p> <p>Yes X No Backwards; Large Pump works Arm, small pump packer.</p> <p>Hydraulic Operating Pressure: 1800 psig</p> <p>Yes X No</p> <p>Make: Amrep Model: All Amrep</p> <p>List Cylinders and Provide Cylinder Cost:</p> <p>1) Packer: 1 stage \$ 687.10</p> <p>2) Ejection: 3 stage \$ 2540.27</p> <p>3) Extension \$ 302.10</p> <p>4) Gripper \$ 163.44</p> <p>5) Level \$ 269.02 \$5,072.72</p> <p>6) Tailgate \$ 443.06</p> <p>7) Hopper Cover \$ 378.51 Included in</p> <p>8) Service Hoist \$ 289.22 body total.</p> <p>Location: Left Side Frame Mounted</p> <p>Hydraulic Reservoir Size: 60 gallons</p> <p>Yes No X</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Total Cylinder Cost for eight (8) Cylinders \$ 5,072.72</p> <p>Included in body total.</p>	<p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p> <p>\$ N/C</p>
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Vendor/Sub Vendor: First Truck Center
HARDWARE Corp

Loader Refuse Trucks
CONFIGURATION #1

<p>Liner H-4000 hydraulic fluid warmer.</p> <ol style="list-style-type: none"> 2) Tank bung shall be schedule 80 2" NPT female thread coupling. 3) Bung shall be welded to 0.250" thick 8" dia steel tank reinforcing ring. 4) The bottom edge of the tread section of the bung and hydraulic oil pre-heater shall be 1 1/2" off the bottom of the tank. 5) The baffles shall be suitable to accept a 24" long heater element and provide a 1" clearance all the way around the element. <p>10. Hydraulic oil shall be ISO Grade 32 multi-viscosity with a -40°F pour point.</p> <p>11. Hydraulic system shall maintain oil temperature at no more than 90°F above ambient temperature.</p> <p>12. Hydraulic Filtration,</p> <ol style="list-style-type: none"> a. Pressure line Parker model: WPF 7,000 psig rated with 7-micron absolute tandem type (2 required, 1 per pump) b. Return line replaceable Parker 7-micron absolute with bypass mode indicator light, easy to access for replacement. c. Suction strainer 100-micron. <p>13. The hydraulic pump suction line shall be steel tubing with hydraulic hose sections at both the pump and tank end for vibration isolation. The suction line shall be routed for maximum ground clearance and damage protection. Hose swivel ends shall be used on all connections.</p> <p>14. Hydraulic system test ports shall be provided for each circuit. Test port connections shall be compatible with the Parker Hannifin PD type connector.</p> <p>15. All hydraulic hoses shall be Parker series ST 451 extra-high-abrasion resistant hoses to reduce hose failure from hose cover damage. Hydraulic hoses shall have swivel ends on each end.</p> <p>16. All hydraulic hoses and tubing shall be neatly routed, shielded and secured/supported to prevent chaffing under truck.</p> <p>17. A hydraulic oil recirculation filter system connection system shall be provided with the following:</p>	<p>Yes X No</p> <p>Amrep can weld in place the proper Bung/Adapter for the Artic Fox H1000 Hydraulic Oil element.</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Filter Size: <u>5</u> microns Make: <u>Parker</u> Model: <u>WPF4</u></p> <p>Filter Size: <u>5</u> microns Make: <u>Parker</u> Model: <u>KLS/KLT</u> w/Indicator light</p> <p>Yes X No</p> <p>Yes X No</p> <p>Make: <u>Parker</u> Model: <u>451 "TC"</u> We use all Parker Hoses & Fittings</p> <p>Yes X No</p> <p style="text-align: right;">\$ <u>N/C</u></p> <p style="text-align: right;">\$ <u>N/C</u></p> <p style="text-align: right;">\$ <u>N/C</u></p> <p style="text-align: right;">\$ <u>N/C</u></p> <p style="text-align: right;">\$ <u>N/C</u></p> <p style="text-align: right;">\$ <u>N/C</u></p>
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Rush Truck Center
Vendor/Sub Vendor: *Hardware Equipment*

Loader Refuse Trucks
CONFIGURATION #1

	<p>a. The suction and return tubes shall be 1" ID and be installed on the tank top side on each tank end (cross flow) approximately 4" inside the end caps and extending to within 1/4" off the tank bottom at the lowest point.</p> <p>b. The hydraulic connections shall be 1" Parker FF male (flat face) fittings and orientated so they face to the inside (each other).</p> <p>c. The suction and return lines shall be 1" ID with a 60° cut on the bottom to assure adequate hydraulic oil flow.</p> <p>d. The suction and return lines shall be interchangeable in use so it does not matter which hydraulic tank fitting the filter system suction and return lines are connected to.</p>	<p>Tubing Size: <u>1</u>" ID _____ inches Distance of Tank Bottom: <u>1/4</u> inches</p> <p>Make: <u>Parker</u> Type: <u>Flat Face</u></p> <p>Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No</p> <p>\$ <u>N/C</u></p>
<p>O. Electrical:</p> <ol style="list-style-type: none"> All remote electrical inter face connections shall be terminated on stud-type terminal strips or with plug type connectors in a waterproof junction box. Connectors/wires shall be permanently and individually labeled. Permanently laminated electrical schematics shall be affixed inside the cover of the electrical junction box. Dielectric grease shall be applied to all terminals and connectors to prevent corrosion if connector is not waterproof. 	<p>Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No</p> <p>\$ <u>N/C</u> \$ <u>N/C</u> \$ <u>N/C</u></p>	<p>\$ <u>N/C</u></p>
<p>P. Control System:</p> <ol style="list-style-type: none"> Cab mounted controls shall all be in ergonomic and natural easy to reach locations. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems and improve efficiency. Control locations shall be mutually determined after Contract award. Two (2) separate loader arm control systems shall be provided with following: <ol style="list-style-type: none"> Joystick controls Fingertip controls Both systems shall work together or separately without physically switching an operation program or switch. Linear joy stick with short handle and short throw movement arm control to include: <ol style="list-style-type: none"> Deadman button/trigger (stop arm movement when released) Dump-up/down. Grip-squeeze/release 	<p>Yes <input checked="" type="checkbox"/> No Photos or drawings shall be provided with the bid for review. Failure to submit information may make the bid non-compliant See Photos</p> <p>Yes - Joysticks and Door Mtd. Electric rocker switches.</p> <p>Yes <input checked="" type="checkbox"/> No Make: <u>H&M</u> Model: <u>AE-731J</u> Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No</p> <p>\$ <u>N/C</u></p>	<p>\$ <u>N/C</u></p>

Vendor/Sub Vendor: Rush Truck Center
Hay Line Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>Yes X No Yes X No Yes X No</p> <p>Location: <u>RH Door Mounted - see photo</u></p> <p>Yes X No Yes X No Yes X No Yes X No Yes X No</p> <p>Armrest Size: <u>4" x 6"</u> x <u>6"</u> Tapered on door plus <u>4" x 6"</u> Rectangular Pad on console</p> <p>Adjustment Range UP/Down: <u>4"</u> inches Adjustment Range Fore/Aft: <u>5.5"</u> inches Adjustment LH & RH: <u>2"</u> inches</p> <p>Head Turn Angle: <u>30</u>°</p> <p>Control Console Size: <u>7.5" x 8" x 3.5"</u></p> <p>Please see Console Options Photos, the angle will depend on space in the cab, so we will work to get you your 30 degrees.</p> <p>Yes X No Yes X No Yes X No Yes X No Yes X No Yes X No</p> <p>Yes X No Yes X No Yes X No Yes X No Yes X No</p> <p>Joystick Throw Angle: <u>15 degrees approx.</u> Make: <u>H&M</u> Model: <u>AE-731J</u></p>	<p>d. Arm-extend/retract</p> <p>4. Finger control switches to include: Momentary 3-position rocker switches (3 required) located on right door with arm rest pad.</p> <p>a. Door switches shall not operate above engine idle speed.</p> <p>b. Dump-up/neutral/down (outer closest to window).</p> <p>c. Grip-squeeze/neutral/release (middle)</p> <p>d. Arm-extend/neutral/retract (inner switch)</p> <p>e. Each switch shall have a permanent engraved symbol on front side of the switch bracket showing the switch function</p> <p>f. The armrest pad shall be approximately 4" wide with a high-density 1/2" thick closed cell foam pad for operator comfort and support</p> <p>g. The armrest and switch assembly shall be easily operator adjustable fore and aft and up/down for operator comfort</p> <p>5. Console control shall be mounted into an easy to see and access location with out turning the head more than 30° to side and without physical stretching to reach. Console shall not obstruct the vision to left side of vehicles for shorter operators seated in the right side operator's position. Console location shall be mutually agreed upon. Console controls and switches shall be in an ergonomic, easy to view and operate position Console controls to include:</p> <p>a. E-stop.</p> <p>b. Packer cycle.</p> <p>c. Automatic packer cycle on/off switch and 1 or 3 cycles.</p> <p>d. Container dump cycle counter.</p> <p>e. Tailgate latch.</p> <p>f. The main panel shall have self-diagnostic troubleshooting capabilities.</p> <p>g. Transmission shifter control.</p> <p>h. Tailgate open/close.</p> <p>i. Master power.</p> <p>j. Work lights.</p> <p>k. Strobe lights.</p> <p>6. The barrel grabber arm controls shall be heavy-duty short height, short throw (approximately 15") "joystick" type with an armrest. The grabber arm controls/armrest shall be multi-position adjustable (up/down, forward/back and in/out) within easy reach of the operator. The City has operators of varying statures and adjustable</p>
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Vendor/Sub Vendor: Fast Truck Center
AAEWWE Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>control will minimize on-the-job related physical problems. Control locations shall be mutually determined after Contract award. Control system shall be manufactures standard electric over hydraulic.</p> <p>7.</p> <p>8. Cab Mounted Controls:</p> <ul style="list-style-type: none"> a. Cab mounted controls shall all be in ergonomic and natural, easy to reach locations. b. Controls shall be designed to comfortably and efficiently accommodate an operator making 1,200 dumping operations per day, 6 days per week. c. Controls shall have a life cycle of 5,000,000 cycles minimum. d. Controls shall utilize light touch and short throw devices. e. Controls shall be multi-positional to accommodate a variety of operators. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. Control placement shall accommodate operators from 5'-2" to 6'-4" tall and from slender to large physics. f. The controls shall be easy and quick for the operator to securely position without the use of tools for comfort and efficiency. g. Studies suggest that long periods of repetitive motion coupled with an improper work environment and incorrect operator position may be linked to certain types of physical discomfort or injury. These include Carpal Tunnel Syndrome (CTS), Cumulative Stress Disorder (CSD), Tendonitis and Tenosynovitis. h. The City is providing information sites where ergonomic information is available to help in the proper layout of operator controls. <ul style="list-style-type: none"> 1) Ergonomist Certifying Organizations include: <ul style="list-style-type: none"> a) Oxford Research Institute: 301-865-4506 b) Board of Certified Professional Ergonomists: 360-671- 7601 <p>9. Main control panel shall be solid state design with LED function indicators. Rocker switches shall be back lighted type for easy identification at night.</p>	<p>Control System Type: <u>Electric over air</u> over hydraulic.</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes - H.D. Joystick and door mounted light touch rocker switches.</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Will work with City to design ergonomic controls for all of the City Drivers within the space allowed by the Chassis Cab.</p> <p>Dome Light in Cab to provide light for main control panel, can provide secondary adjustable lite</p> <p>\$ N/C</p> <p>\$ N/C</p>
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Vendor/Sub Vendor: *Perry Truck Center*
Hard Time Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>10. Controls shall be permanently labeled and lighted for easy night viewing.</p> <p>11. Vendor shall provide:</p> <ul style="list-style-type: none"> a. The City preliminary drawings of the control layout and how the controls are positioned inside the truck cab within 45 days of the contract award. b. Within 120 days of the Contract award the vendor shall provide a preliminary mock up set of controls for review by the City. c. Vendor shall deliver the first article for review, testing and approval before shipping remaining units from the factory. 	<p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Can provide first truck or a sample of the console mtd. controls assembly.</p>	<p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p>
<p>Q.</p> <p>Branch Protection:</p> <p>1. The body shall have tree branch deflector plates to provide protection for:</p> <ul style="list-style-type: none"> a. Grabber arm hoses. b. Rear tailgate hydraulic hoses/lines, wiring and for the grease lines. c. Grabber Arm Side hydraulic hoses and steel plumbing. d. Lights and switches. e. Side sign boards both front and back sides. f. All other components that is vulnerable to damage from tree branches. 	<p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p>	<p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p> <p>\$ <u> </u> N/C</p>

Vendor/Sub Vendor: *Rush Truck Centers*
HAERLINE Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>R.</p> <p>Vehicle Rear Lights: (No Approved Equals)</p> <ol style="list-style-type: none"> All lights shall be Truck-Lite "Lifetime Warranty" 12vDC, LED type, flush mount, sealed lexan body, grommet insulated with Fit' N Forget multi-pin plugs where possible. Integral Stop/Turn/Tail/ lights mounted in the rear corner post of the dump body model Super 44 P/N 44302R or model 60 P/N 60250R. Third Brake Light use the same used light used for Stop/Turn/Tail light and disable the Turn and Tail light sections. Back up lights Truck-Lite LED, flush mount, sealed lexan body, grommet insulated, multi-pin units model 44 P/N 44206C. Marker lights Truck-Lite LED 3 per side model 10 P/N 10250R or 10250Y or model 30 P/N 30250R or 30250Y. Rear ID bar Truck-Lite LED model 35 P/N 35741R or 35740R. License plate light, Truck-Lite model 15 P/N 15040 Work lights Two (2) Hopper and gripper arm mount LED work lights with lighted on dash mounted control switch. Wiring shall be sealed Fit' N Forget modular plug-in type where possible. Dielectric grease shall be applied to all plug connections and terminals to prevent corrosion. 	<p>Make: <u>Truck-Lite</u> Model: <u>LED</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>Super 44or60</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>Super 44or60</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>44</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>10 or 30</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>35</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>15</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>81380</u> \$ <u>N/C</u></p> <p>Make: <u>Truck-Lite</u> Model: <u>Fit-N-Forget</u> \$ <u>N/C</u></p> <p>Yes X No</p>
<p>S.</p> <p>Paint Main Body:</p> <ol style="list-style-type: none"> Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufactures procedures to include: <ol style="list-style-type: none"> Preparation to include: <ol style="list-style-type: none"> Removing all mill scale and slag. Variprime 615S self-etching primer or approved equal. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. Paint to be applied with all body members painted. 	<p>Make: <u>Sikens</u> Type: <u>Polyurethane</u> \$ <u>N/C</u></p> <p>Color: <u>"Bright" White to match cab</u></p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p>

Dyna Truck Center
Vendor/Sub Vendor: Harwin Gypsum

Loader Refuse Trucks
CONFIGURATION #1

<p>T. Special Tailgate Paint:</p> <ol style="list-style-type: none"> 1. Polyurethane paint equal to DuPont Imron 5000, Color: <ol style="list-style-type: none"> a. Top 1/2 of tailgate "Bright White", b. Lower 1/2 of tailgate "Safety Yellow" with: <ol style="list-style-type: none"> 1) Alternating "Safety Yellow" paint 8" wide and 2" wide "White" tape. 2) Tape 2" wide 3M Scotchlite "White" DOT reflective conspicuity tape applied from center out in a "Chevron Pattern" with a top horizontal tape strip separating the tailgate's White and Safety Yellow paint. 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted. 	<p>Color: <u>Bright White to Match Cab</u> Color: <u>Safety Yellow</u></p> <p>We can add stripes and tape to meet City Fleet Design.</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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<p>Refuse Body Equipment SUB TOTAL COST</p>	<p>\$100,190</p>
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\$101,692.85

Use Truck Coater
Vendor/Sub Vendor: Harold Inc Equipment

4.7 Sundries Equipment

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality; comprehensive information in relation to proposed alternative products shall be provided with the bid so a full technical comparison/ assessment can be made.

	Description of Equipment	Offered Equipment	Cost
A.	<p>Driver Height Warning Sign</p> <ol style="list-style-type: none"> Installed on truck dash providing the travel height of the vehicle. Sign shall be in 1" "white" block letters. 	<p>Provide Specs: Large Decal can include height in 1" letters</p>	<p>\$ N/C</p>
B.	<p>Conspicuity Tape:</p> <ol style="list-style-type: none"> DOT-C2 Standard No. 108 reflective conspicuity tape. Tape shall be on both lower sides and rear of the body. Tape shall be applied in symmetrical pattern from middle of panel outward. 	<p>Provide specs: Conspicuity Tape is Standard on side of truck fenders and on rear ICC Bumper will add symmetrical pattern.</p>	<p>\$ N/C</p>
C.	<p>Mud flaps:</p> <ol style="list-style-type: none"> Mud flaps shall be heavy-duty anti-sail type Installed front and rear on rear wheels. 	<p>Provide specs: H.D Anti-sail mud flaps mounted behind front and rear wheels.</p>	<p>\$ N/C \$ N/C</p>
D.	<p>Toolbox:</p> <ol style="list-style-type: none"> The toolbox shall be easily accessible for storage of the flairs, triangles, tire chains and other small tools. Mounted underneath and attached to the right side of the body. The exact location shall be mutually agreed upon at installation. Size 36" long x 18" high x 18" deep heavy-duty steel with powder coat "black" finish. The door shall be side-mounted bottom hinged. The box shall have a flush mount latch/lock assemble. 	<p>Make: Fleming Model: Steel</p> <p>Location: RH Frame Mtd.</p> <p>Size: 18"Hx18"Dx36"Long OR AS SPACE</p>	<p>\$</p> <p>ALLOWS</p>
E.	<p>Tool Holders:</p> <ol style="list-style-type: none"> Two shovel/broom holders mounted on curbside of body. Brooms and shovels shall be easy to access, remove and replace in the brackets. 	<p>Yes X No Yes X No</p> <p>Yes X No Yes X No</p>	<p>\$ N/C</p>

Vendor/Sub Vendor: *Rush Trucks for you*
HAEDLINE Equipment

Loader Refuse Trucks
CONFIGURATION #1

F.	<p>Spill Kit:</p> <ol style="list-style-type: none"> 1. A Brady (Sorbent Products Co.) 20-gallon lab pack oil only spill kit PN SKO-20 shall be provided. 2. The 20-gallon "Safety Yellow" polyethylene spill container shall be UN approved for both water and chemical resistance with a screw type top cover. 3. The oil spill kit shall contain the following minimum: <ol style="list-style-type: none"> a. 15" x 19" absorbent pads, 12 required b. 3" x 12' SOCs, 3 required c. 18" x 18" pillows, 2 required d. Nitrile gloves, 1 pair required e. Disposal bags, 3 required f. Goggles, 1 pair required 4. Emergency response handbook, 1 book required 5. The spill kit shall be installed on the truck frame's right/curb side in a mutually agreed upon location at installation. 6. The spill kit mount shall secure the spill kit to the mounting frame so that the kit cannot dislodge during operation and shall have a provision for securing the kit with a standard padlock. 7. The mount system shall not have any sharp corners/areas that could rub thru the spill container during operation. 	<p>Make: <u>Brady</u> Model: <u>SKO-20</u></p> <p>See Brady SKO-20 product details</p> <p>Yes X No Yes X No Yes X No Yes X No Yes X No Yes X No</p> <p>Yes X No</p> <p>Yes X No</p> <p>Yes X No</p>	<p>\$ <u>N/C</u></p>
G.	<p>Tire Chain Holders:</p> <ol style="list-style-type: none"> 1. Special brackets for storing drive wheel tire chains during winter season shall be provided 2. The chain holders shall be close to the drive wheels and easy to lift tire chains onto/off the brackets 3. Exact location shall be mutually agreed upon at installation 	<p>Tire Chain Brackets design and location to be mutually agreed on.</p> <p>Yes X No</p>	<p>\$ <u>N/C</u></p>

Sundries Equipment SUB TOTAL COST	\$ <u>N/C</u>
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Base Truck for Year
Vendor/Sub Vendor: *Hepler Equipment*

4.8 Optional Equipment/ Inspection Trip Considerations

Do not include Optional Equipment in the total price of the vehicle; however an equipment price must be provided. The City will determine if the equipment is to be purchased.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality; comprehensive information in relation to proposed alternative products shall be provided with the bid so a full technical comparison/ assessment can be made.

A.	Description of Equipment	Offered Equipment	Cost
	Retarder System:	Truck Dealer responsible for all of section A.	
1.	The retarder system shall provide effective vehicle slowing/retardation to a speed of 3 mph or below. The retarder system shall provide at minimum a 50% increase in vehicle foundation brake life. Provide the information for the type of retardation system being offered.	Make: _____ Model: _____ Provide Brake Horsepower: _____ Provide lowest speed retarder is effective: _____	\$ <u>N/A</u>
2.	Transmission output shaft retarder.	Make: <u>THELMA</u> Model: <u>FOCAL MOUNT</u> Provide Brake Horsepower: <u>300</u> Provide lowest speed retarder is effective: <u>2</u>	\$ <u>8934</u>
3.	Electric driveline retarder	Make: <u>JACOBS</u> Model: <u>C-Brakes</u> Provide Brake Horsepower: <u>300</u> Provide lowest speed retarder is effective: <u>20</u> <input checked="" type="radio"/> Yes <input type="radio"/> No	\$ <u>1612</u>
4.	Engine and exhaust/turbo brake combination that does not raise exhaust noise (no Jacobs brakes).	<input checked="" type="radio"/> Yes <input type="radio"/> No	\$ _____
5.	Retardation shall be activated into 1 st stage when the driver removes their foot from the throttle pedal. Stages 2, 3 and 4 shall be progressively activated by the brake pedal before the foundations brakes are engaged.	<input checked="" type="radio"/> Yes <input type="radio"/> No	\$ _____
6.	Retarded control switches dash mounted with easy access for the driver.	<input checked="" type="radio"/> Yes <input type="radio"/> No	\$ _____
a	On/Off switch.	<input checked="" type="radio"/> Yes <input type="radio"/> No	\$ _____
b	High/Low retardation range.	<input checked="" type="radio"/> Yes <input type="radio"/> No	\$ _____

Dash Truck Control
Vendor/Sub Vendor: HAERLINE Equipment

B.	Auto Dump Feature:	Describe Operation:	\$ N/A
	<p>1. A PLC (programmable logic controller) controlled system for safe consistent speed productivity, maintaining higher productivity throughout a 10-hour work day and reducing excessive wear to the system by erratic or too fast of operational speeds.</p> <p>2. System shall after operator moves the arm to the container and grips the container hit and hold a button to:</p> <ul style="list-style-type: none"> a Automatically grab the container b Automatically lift the container approximately 18" above the ground c Bring the container in to the truck d Raise and dump the container e Return the empty container to the spot that the full container was initially picked up from, f Release the container g Retract the arm so the operator can move the truck to next pick up location. <p>3. If the operator should encounter a problem, releasing the automatic actuation button shall stop all movement and function and require manual operation for the completion/duration of the cycle.</p> <p>4. The system shall be capable of:</p> <ul style="list-style-type: none"> 1) Faster and more reliable operation than a skilled operator can accomplish using manual operation. 2) The system shall also reduce wear on the system as all functions are programmed to manufacture suggested speeds for maximum durability <p>5. The automatic operation shall not cause over-loader trash containers to spill there contents any more than manual operation would cause.</p> <p>6. The operational characteristics (function speeds) of the pick up/dump cycle shall be easily programmable with a special code (non operator programmable) so the trucks performance can be properly programmed for maximum route efficiency without damage to the equipment from too fast of operation.</p> <p>7. Hydraulic inhibitor shall prevent dumping on top of the hopper cover.</p>	<p>Amrep has never built or designed a system of this type for the safety issues associated with an automated system working in a confined space.</p>	

Vendor/Sub Vendor: Parse Truck Centers
APROLINE Corp

Loader Refuse Trucks
CONFIGURATION #1

<p>C. CNG Fuel System: Engine Option:</p> <ol style="list-style-type: none"> Cummins ISL-G, 8.9 liter, VGT turbocharged natural gas engine, rated at 320 hp @ 2,000 rpm, torque 1,000 lb/ft @ 1,300 rpm, 2,200 rpm governed The CNG engine shall meet all required EPA on-highway emissions standards Fuel Tank: <ol style="list-style-type: none"> Fuel tank shall meet or exceed <ol style="list-style-type: none"> NFPA 52 standards US-DOT/FMVSS304 ISO 11439 Tank Manufacturer Tank Information <ol style="list-style-type: none"> Tank Construction Type: composite Service Life Years: 20 years Recertification Period: 8 years Type of Recertification Inspection Required Tank Service Pressure Full: 3,600 psig @ 70°F (21°C) Each CNG fuel tank shall have a ¼-turn ball stainless steel shutoff valve mounted at the tank inlet. Tank Installation Location: <ol style="list-style-type: none"> The CNG tank mounting location shall be mutually agreed upon by the vendor and the City prior to the ordering of the cab and chassis. The vendor shall provide drawing of proposed CNG tank location(s). The locations shall not increase the truck wheelbase or the overall height of the truck and body 12' - 6" or body length over a regular non-CNG configuration: <ol style="list-style-type: none"> Tank Size: provide diameter x length Tank Weight each: Empty Quantity of Tanks for 75 gallon DGE Weight All Tanks: Empty Weight All Tanks: Full CNG Tank Enclosure Width, Length, Height Tank Enclosure Material: Steel/Gauge 	<p>Hardline Equipment/Agility Sec.-C.</p> <p>Make: <u>Cummins</u> Model: <u>ISL-G</u></p> <p>HP: <u>320</u> @ <u>2100</u> rpm</p> <p>Torque: <u>1300</u> @ <u>1200</u> rpm</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Make: _____ Model: _____</p> <p>Material: _____</p> <p>Service Life: _____ yrs</p> <p>Recertification: _____ yrs</p> <p>Inspection Type: _____</p> <p>Service Pressure: _____ psig</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>CNG Tank (s) Location: <u>TOP TANK</u> <u>OR Behind Cab</u></p> <p>Size: _____ dia x _____ long DEG Net _____ gal</p> <p>Tank Weight: _____ lbs</p> <p># of Tanks: <u>25</u> DEG Net <u>75</u> gal</p> <p>Weight all tanks and brackets etc: _____ lbs</p> <p>Weight All Tanks Full CNG: _____ lbs</p> <p>Enclosure Size: _____ x _____ x _____</p> <p>Material: _____ Gauge: _____</p> <p>\$ <u>3600</u></p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ <u>36,500</u> Revised Price</p> <p>\$ <u>335,135</u></p> <p>12-6-2013</p> <p>PRICE</p> <p>\$31,855</p>
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Vendor/Sub Vendor: Best Truck Centers
Hardline Equip

Loader Refuse Trucks
CONFIGURATION #1

<p>d Tank Mounting:</p> <p>1) End/dome/ boss, 2-piece saddle mounts on each tank end. The tanks shall be installed inside a steel tank mounting frame. The frame shall be 3" x 1 1/2" x 3/16" tubing. The frame shall be powder coat finished for durability.</p> <p>2) CNG tank manufacturer 2-point band type CNG bracket with rubber cushion between tank and bracket to prevent slippage and eliminate chaffing, accommodate tank growth by changes in internal pressure.</p> <p>e The primary tank relief valve (PRD) shall be vented up and away from the vehicle and any ignition sources. The vent shall be protected from rain or vehicle wash water from entering the vent line. The vent line shall be 1/2" diameter minimum.</p> <p>5. CNG Pressure Reducing Regulator System:</p> <p>a The pressure reducing regulator system shall be mounted inside a protective steel enclosure no more than 6 ft from the CNG fuel tank.</p> <p>b From the CNG fuel tank to the regulator the tubing shall be 1/2" od x 0.049" wall 300 series stainless steel minimum.</p> <p>c The pressure reducing regulator system shall have 2 pressure gauges installed in the system.</p> <p>1) High Pressure gauge 0-to-5,000 psi installed on tank side to show tank system pressure.</p> <p>2) Low pressure gauge 0-to-250 psi to show engine downstream fuel delivery pressure to the engine.</p> <p>3) Gauges shall be stainless steel glycerin filled.</p> <p>d The engine coolant flow to the pressure reducing regulator shall be minimum of 1 gallon/minute of 180°F coolant per 50 hp of engine output. For coolant flow the heat exchanger for the engine shall be rated at 450 hp to cover engine rating increases after the truck is delivered.</p> <p>e Engine coolant flow and CNG fuel supply shall enter the regulator on the same side of the regulator.</p> <p>f Coolant ports shall be oriented vertical (up) in horizontal regulators to prevent air from becoming trapped in the regulator.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Frame Size: _____ x _____ x _____ \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No</p> <p>PRD Pressure Release: <u>3650</u> psig \$ _____</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Tubing Size: _____ \$ _____</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Tubing Size: _____ x _____ Type: <u>SS</u> \$ _____</p> <p>Pressure Range: _____ to <u>3650</u> psi \$ _____</p> <p>Pressure Range: _____ to _____ psi \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No \$ _____</p> <p><input type="radio"/> Yes <input type="radio"/> No \$ _____</p>
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Loader Refuse Trucks
CONFIGURATION #1

	<p>g The pressure reducing regulator shall not under any circumstance be installed in series with the truck cab heater system.</p> <p>6. Automatic Fuel Shut Off:</p> <p>a The automatic fuel shut off valve shall be plumbed directly to the exit/warm side of the engine coolant heated pressure reducing regulator.</p> <p>b The automatic fuel shut off valve shall have its weight supported by a mounting bracket.</p> <p>c The automatic fuel valve shall have a Cv of 2.0 minimum to assure adequate fuel flow.</p> <p>d The automatic fuel shut off shall be a NC (normally closed) valve when the ignition is in "Off" position.</p> <p>7. Fuel Lines:</p> <p>a All high pressure shall be 1/2" od x 0.049" wall stainless steel 316L tubing appropriate for the application.</p> <p>b Stainless steel lines shall have thermal expansion/contraction loops for smaller diameter lines and S-bend expansion joints for larger diameter lines.</p> <p>c All CNG lines shall be supported with stainless steel rubber bushed aircraft P-type clamps. The maximum distance between clamps shall no more than 24".</p> <p>d Fitting for the CNG fuel system shall be:</p> <ol style="list-style-type: none"> 1) Stainless steel tube fittings shall be Swagelok or Parker A-lok with thread sealant. 2) Special NPTF pipe fittings shall be stainless steel with thread sealant. <p>e All NPT fitting shall be installed on male pipe threads using proper thread sealants.</p> <ol style="list-style-type: none"> 1) Thread sealant and anti-seize shall be a nickel impregnated or nickel coated Teflon tape. 2) Teflon tape shall start at 2nd thread. 3) On 1/2" and under use 2 wraps of tape 4) On 5/8" to 1" use 3 wraps of tape. 5) Assure last section of tape is pulled down tight against the threads. 6) Do not use sealant on compression threads <p>f Post heat exchanger hoses and lines may be Parker 929</p>	<p>Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>Valve Cv: <u>2.0</u></p> <p>Yes No</p> <p>Make: <u>316L</u> Type: <u>1/2"</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>Make: _____ Type: _____</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>Sealant Type: _____</p> <p>Make: _____ Type: _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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Loader Refuse Trucks
CONFIGURATION #1

<p>heavy-wall PTFE hose exceeding SAE100R14A or stainless steel tubing.</p> <p>8. Fuel Fill System:</p> <p>a The fuel receptacle and fuel fill system shall be rated for both "fast fill" and "slow fill" with a minimum 1/2" od x 0.049" wall 300 series stainless steel.</p> <p>b The fuel fill nozzle:</p> <ol style="list-style-type: none"> 1) Shall be a male NGV1 OPW with rubber protective cover boot 2) Fill location on the driver's side of the vehicle 3) The fuel filler line shall be plumbed to the CNG tank bank. <p>c The tank fill enclosure shall have:</p> <ol style="list-style-type: none"> 1) A high pressure line/tank pressure gauge 0-to-5,000 psi 2) A low pressure fuel to engine pressure gauge 0-to-250 psi 3) An OPW male NGV1 fuel fill receptacle with easy access and excellent clearance for both "fast fill" and "slow fill" receptacles. 4) An emergency 1/4-turn shut off valve for shutting down the system in case of a fueling emergency. <p>d The fuel fill access shall be easy to access and easy for the operator to see for fueling and to prevent drive-off with fuel hose attached.</p> <p>e The fill receptacle shall have an easy to remove/reinstall fuel fill cover to protect the fill port from contamination during truck operation.</p> <p>9. CNG Filtration:</p> <ol style="list-style-type: none"> a High pressure, on the fuel tank(s) fill line to clean the CNG before it enters the fuel tank storage system. b Low Pressure, on the downstream "low pressure" post regulator engine delivery side. The "low pressure" filter shall be a Fleetguard spin-on NG5900 with liquid drain or approved equal. <p>10. Fuel Gauge:</p> <ol style="list-style-type: none"> a An electric fuel gauge shall be provided with easy to see vehicle dash gauge to show fuel tank volume. b The fuel sender shall be a sealed unit mounted to the high-pressure tank system c A sealed 3-pin Weatherpak connector with a 1-amp fast blow 	<p> <input checked="" type="radio"/> Yes <input type="radio"/> No <u>1/2</u> Tubing Size: _____ \$ _____ </p> <p> Make: _____ Model: _____ \$ _____ </p> <p> Fill Location: _____ Yes No \$ _____ </p> <p> Pressure Range: _____ to <u>5000</u> psi Pressure Range: _____ to _____ psi <input checked="" type="radio"/> Yes <input type="radio"/> No \$ _____ </p> <p> <input checked="" type="radio"/> Yes <input type="radio"/> No \$ _____ </p> <p> <input checked="" type="radio"/> Yes <input type="radio"/> No \$ _____ </p> <p> Make: _____ Model: _____ \$ _____ </p> <p> Make: _____ Model: _____ \$ _____ </p> <p> Fuel Gauge Type: _____ Make: _____ Model: _____ \$ _____ </p> <p> Yes No </p>
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	<p>d automotive fuse shall connect the sender to the gauge. Pins are: 1) Red = power 2) Green = signal 3) Black = ground</p>	<p>Yes No Yes No Yes No</p>	
<p>D. Remote High-Quality Color Safety 3 Camera System: 1. Cameras (3 required) color, ECCO Gemineye K7000Q system with camera view selection on the TV monitor face (No Approved Equal: a. Rear of vehicle mounted camera wired into vehicle reverse circuit to automatically turn ON when vehicle is shifted into reverse or ON when vehicle ignition is on or in a forward gear. b. Left side camera (cab mounted) to serve as an auxiliary left rear view mirror function (blind spot view) to augment the left rear view mirrors. 1) The camera shall be normally ON viewing the left side of the vehicle and blind spot. 2) It shall automatically switch to rear of vehicle view when the transmission reverse gear function is activated. 3) An over-ride to keep the left side camera on shall be provided for special situation use. 4) Camera shall be as small as possible and have a guard that will protect the camera and wiring from tree branch damage and road spray/splash. 5) The exact location of the camera and approval of the camera protection shall be mutually agreed upon at installation c. Hopper camera to provide viewing of trash in the hopper and packing operation. Hopper camera shall be fully protected from physical damage and dirt build up on the lens. The camera shall be positioned for easy lens cleaning. The hopper camera shall automatically switch ON when the barrel pick up arm is activated for pick up operations 2. Camera color ECCO model C2001 with automatic shutter (2) required: a. Camera shall be in water proof cast aluminum housing. Housing shall be able to be pressure washed when washing vehicle.</p>	<p>Hardline Equip. to do Camera System Sec. D Make: <u>ECCO</u> Model: <u>K7000Q</u> \$ <u>Inc</u> <input checked="" type="checkbox"/> Yes No Camera Price Required \$ <u>Inc</u> <input checked="" type="checkbox"/> Yes No Camera Price Required \$ <u>Inc</u> <input checked="" type="checkbox"/> Yes No Camera Price Required \$ <u>Inc</u> Make: <u>ECCO</u> Model: <u>C2001</u> \$ <u>Inc</u> Quantity: <u>2</u> <input checked="" type="checkbox"/> Yes No</p>		

	<p>b. Camera shall have built in safety audio system that will pick up and broadcast normal conversation to monitor.</p> <p>c. Camera shall be automatically heated for cold weather operation.</p> <p>d. Resolution 380 TV lines horizontal.</p> <p>e. Signal to noise ratio 44dB minimum.</p> <p>3. Monitor LCD, 7" flat screen ECCO model M7000Q with:</p> <p>a. Monitor shall be in a very easy to see location on the dash next to the "A" pillar that requires as little as possible head movement and also with a little as possible front windshield obstruction. The monitor location shall be mutually agreed upon.</p> <p>b. Camera view selection switches on the TV monitor and trigger wires via power cable.</p> <p>c. Automatic day/night dimmer sensor</p> <p>d. Resolution 291,000 pixels or better.</p> <p>e. Picture control to include brightness, contrast and image.</p> <p>f. Speaker system to broadcast sound from camera.</p> <p>g. Picture shall be crisp and clear at all times.</p> <p>h. Anti-glare sun shield and hood model A7000SS.</p> <p>i. Swivel mounting bracket.</p> <p>j. Automatic dimmer sensor to adjust for day and night viewing.</p> <p>k. Monitor capable of accommodating 2 cameras.</p> <p>4. All wiring shall be totally sealed with sealed locking connections to prevent corrosion.</p> <p>5. All wiring shall be routed to prevent damage to the wiring.</p> <p>6. Warranty 2 years with replacement of failed components with new components shipped UPS "Next Day" upon notification of problem.</p> <p>Automatic Lubrication System to include:</p> <p>1. Interlube AC3 or Vogel automatic lubrication system.</p> <p>2. The system shall automatically lubricate the slide-out carriage system and plastic barrel pick up system and other high wear areas.</p>	<p>Resolution: <u>380</u> lines</p> <p>Make: <u>ECCO</u> Model: <u>M7000Q</u></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Make: <u>ECCO</u> Model: <u>A7000SS</u></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Warranty: <u>2</u> years</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Make: Interlube Model: <u>AC3</u></p> <p>Items that will be automatically lubricated: <u>15 points on trolley, 10 points on arm & extension, 2 points on push out cylinders.</u></p>	<p>\$ <u>IUC</u></p> <p>\$ <u>IUC</u></p> <p>\$ <u>IUC</u></p> <p>\$ <u>1800⁰⁰</u></p> <p>\$ <u>3604.00</u></p>
E.			

Loader Refuse Trucks
CONFIGURATION #1

	<p>3. The automatic lubrication system shall be designed for the particular application and to maximum durability of the lubrication lines and installed by the trash body manufacturer. Poorly thought out or routed lubrication lines will not be accepted.</p> <p>4. Grease pump/reservoirs, control unit, distribution manifolds and grease hoses/lines shall be located/routed for maximum durability ease of access and protection from damage. The automatic lubrication system shall be well thought out and the system shall be designed into the trash system</p> <p>5. Grease pump/reservoir shall be a 3 liter grease capacity minimum.</p>	<p>Number of Automatic Lubrication Points: <u>27</u> Yes X No Yes X No</p>
<p>F.</p> <p>Cab Heater: 1. The cabin heater shall be a Webasto Air Top 2000ST. 2. Heat Value 3,100 to 7,000 Btu/hour 3. Air Flow 37 cfm 4. Size: 12 1/4" x 4 3/4" x 5" approximate 5. Electrical 12vDC @1.2 amps 6. Diesel Fuel Usage 0.03 to 0.06 gallons/hour</p>	<p>System Pressure: <u>1200</u> psi Grease Line Material: <u>INTEC NYLON 2500psi</u> Grease Reservoir Size: <u>3 liter capacity</u> Hardline Equip. / Truck Dealer Sec.F. Make: <u>WEBASTO</u> Model: <u>AIRTOP 2000ST</u> Btu's: <u>31000</u> /hr Air Flow: <u>37</u> cfm Size: <u>12 1/4</u> x <u>4 3/4</u> x <u>5</u> Fuel Usage: <u>0.03</u> gal/hr Hardline Equip. / Truck Dealer Sec.G Make: <u>WEBASTO</u> Model: <u>THESON POST</u></p>	<p>\$ <u>955.00</u></p>
<p>G.</p> <p>Hydraulic Oil and Engine Coolant Heater: 1. Heater for hydraulic oil and engine coolant shall be a Webasto Thermo 90ST 2. Heat Value 6,100 to 26,000 Btu/hour 3. Water Flow 7.3 gallons/minute @ 2.2 psi 4. Size: 15 3/4" x 7 1/2" x 14" approximate 5. Electrical 12vDC @ 3 amps 6. Diesel Fuel Usage 0.06 to 0.24gallons/hour 7. Hydraulic oil heater Arctic Fox H-4000 series maximum length for hydraulic tank. Baffle may need to have pass-thru opening</p>	<p>Btu's: <u>31000</u> /hr Water Flow: <u>7.3</u> gpm Size: <u>15 3/4</u> x <u>7 1/2</u> x <u>14</u> Fuel Usage: _____ gal/hr Make: <u>ARCTIC FOX</u> Model: <u>H 4000</u> Length: _____</p>	<p>\$ <u>2612.00</u></p>
<p>H.</p> <p>Zonar System (No Approved Equals) The Zonar system shall be the model EVIR-GPS-GSM (Electronic vehicle information reports- global position system- global systems mobile communications) and provide the following functions minimum: 1. The system shall be fully compatible with and fully interface with: a. CCG Faster fleet maintenance software b. Kronos time keeping system for reporting employee data 2. Webb based reporting.</p>	<p>Make: <u>ZONAR</u> Model: <u>125 H40001</u> Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No</p>	<p>\$ <u>1,000.00</u> \$ <u>N/C</u> \$ <u>N/C</u> \$ <u>N/C</u></p>

Vendor/Sub Vendor: Pack Truck Center
Hardware Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>3. The system shall provide the following functions:</p> <ol style="list-style-type: none"> Ties the operator to the vehicle. Pre and Post trip vehicle inspection information and compliance. Send inspection information to Fleet Maintenance for an automatic "work order" generation. Track vehicle time out of the yard, time on route, and return to yard time. Tracks engine idle time. Monitors route pick-ups/work stops, show the vehicles route and work stops on a real time basis. Uses the City's own maps of Denver area. Captures meter readings (odometer, engine hours) reports for PM scheduling. Has five (5) additional electronic inputs 8 to 30 vDC for monitoring and reporting vehicle functions and information. <p>4. The system shall be fully contained in an injection molded, impact resistant plastic case that is water -tite and insulated.</p> <p>5. The system shall have passed SAE J-1455 vibration test</p>	<p>Yes ✓ Yes ✓ Yes / Yes / Yes ✓ Yes / Yes / Yes / Yes / Yes ✓ Yes ✓ Yes ✓</p> <p>No No No No No No No No No No No No</p>	<p>\$ <u>1200</u> \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____</p>
<p>1. Sign Boards, Two body mounted Roadway Displays Inc. (909.587.0207) mobile display systems shall be provided to include:</p> <ol style="list-style-type: none"> Frame model SS315955 95-1/2" long x 31-1/2" high x 2-1/4" frame width with .025" aluminum backing. Frame material, 6463-T6 aluminum extrusions with satin anodize. Sign panel size 93-3/16" x 29-3/16" x .060" high impact styrene. View size 91" x 27". 	<p>Make: Roadway Model: SS315955 Displays 95.5x31.5x2.25"</p> <p>Yes X No Yes X No</p>	<p>\$ 600.00</p>
<p>J. Spare Parts for Refuse Body:</p> <ol style="list-style-type: none"> Joystick controller (1) required. Door rocker switch platform complete with switches and armrest 	<p>Yes - one joystick. Yes - Door rocker assembly</p>	<p>\$ <u>490.42</u> \$ <u>527.13</u></p>

Vendor/Sub Vendor: *Rush Truck Center*
Amityville, NY

Loader Refuse Trucks
CONFIGURATION #1

K.	<p>Spare Tire and Wheel:</p> <ol style="list-style-type: none"> 1. Tire and wheel assembly: 1 per vehicle. 2. Tire: Michelin XZU, Steer Tire. 3. Wheel: Size 22.5" x 9", disc, 10-hole, hub piloted type, single nut, meeting ISO Standard 4107. "White" powder epoxy coated finish. <p>Inspection Trip:</p> <ol style="list-style-type: none"> 1. The City and County of Denver reserves the right to inspect at the cab and chassis and body fabricating plant during the construction of the first (1st) article prior to paint and delivery. 2. Where the fabricating plant is located further than 200 road-miles from the City and County of Denver, the bidder shall include in the bid price all travel expenses to the fabrication plant for the inspection. 3. The City may select to send from 2 representatives to inspect the 1st article. The provided costs shall be based on one (1) person per day and the City will determine how many representatives the inspection will require and how many days the inspection will require. 4. Inspection Trip Costs to include: <ol style="list-style-type: none"> a. Air fare per person: b. Surface transportation costs: c. Lodging per person per day: d. Meals per person per day: 5. Total cost per person for 1st article inspection trip: 	<p>Hardline Equip. / Truck Dealer Sec. K \$ <u>1500</u></p> <p>Make: <u>Michelin</u> Model: <u>XZUS</u> Make: <u>Accuride</u> Model: <u>22.5 x 9</u></p>
L.	<p>Provide information:</p> <p>Hardline Equip. / Truck Dealer Sec. L</p> <p>Distance to fabrication plant: <u>932</u> miles Plant Location: <u>Channah, California</u></p> <p>Air Fare: \$ <u>300</u>, Airline: <u>Unired</u> \$ <u>300</u> Surface Transportation: \$ <u>100</u>, Mode: <u>Rental</u> \$ <u>100</u> Lodging / day: \$ <u>150</u> \$ <u>150</u> Hotel: _____ Meals / day: \$ <u>50</u> \$ <u>50</u> \$ <u>600</u></p>	

Vendor/Sub Vendor: Dash Truck System
HAEDLINE Equip

5.0

Manuals/Equipment

Item	Description of Equipment	Offered Equipment	Cost
Training Video	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment. 1. Cab and chassis. 2. Equipment and Body.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	\$ _____ \$ N/C
Operators Manual Paper	One book per vehicle/equipment with "safe equipment operation" section for each component. 1. Cab and Chassis. 2. Equipment and Body.	Standard Amrep Operators Manual	\$ N/C \$ N/C
Service/Repair/Maintenance Manual Paper	Two complete sets per Contract (not per vehicle); binder required, A. Manuals shall be provided for: 1) Cab and chassis 2) Equipment and body B. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. C. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes X <input type="checkbox"/> No <input type="checkbox"/> (On CD and Paper) Yes X <input type="checkbox"/> No <input type="checkbox"/> Offering Standard Amrep Manuals	\$ _____ \$ N/C
Service/Repair/Maintenance Manual on CD rom or DVD	One complete set; per Contract (not per vehicle) 1. Manuals shall be provided for: 1) Cab and chassis 2) Equipment and body 2. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes X <input type="checkbox"/> No <input type="checkbox"/> Yes X <input type="checkbox"/> No <input type="checkbox"/> Offering Standard Amrep Manuals and basic electrical and hydraulic schematics.	\$ _____ \$ N/C

Vendor/Sub Vendor: Dark Truck Leasing
Harlowe Equipment

Loader Refuse Trucks
CONFIGURATION #1

	<p>3. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.</p> <p>4. New CD roms or DVDs shall be provided when information is updated, superseded or changed.</p>	<p>Yes X No</p> <p>Offering Standard Amrep Manuals and basic electrical and hydraulic schematics.</p> <p>Yes X No</p>	<p>\$ N/C</p>
<p>Service/ Repair/ Maintenance Manual on Internet Access, or Other Electronic Media</p>	<p>One complete set; per Contract (not per vehicle)</p> <p>1. Vendor shall provide access to the site for the length of time that the City owns the vehicle/equipment at a one time up front cost to the City.</p> <p>2. Internet information shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments.</p> <p>3. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.</p>	<p>Yes X No</p> <p>If other Specify: <u>Currently Amrep does not offer Internet Access to Amrep Manuals. Site is Free.</u></p> <p>Yes No X</p>	<p>\$ <u>N/C</u></p> <p>\$ <u>N/A</u></p>
<p>Parts Manual Paper</p>	<p>Two complete sets, per Contract (not per vehicle)</p> <p>binders required,</p> <p>1. Manuals shall be provided for:</p> <p>A. Cab and chassis</p> <p>B. Equipment and body</p> <p>2. Illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.</p>	<p><input checked="" type="checkbox"/> Yes No</p> <p><input type="checkbox"/> Yes X No</p> <p><input type="checkbox"/> Yes X No</p>	<p>\$ <u>M/C</u></p> <p>\$ <u>N/C</u></p>

Vendor/Sub Vendor: Red Truck System
Harline Equipment

Loader Refuse Trucks
CONFIGURATION #1

<p>Parts Manual on CD rom or DVD</p>	<p>One complete set, per Contract (not per vehicle) illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.</p> <ol style="list-style-type: none"> Information shall be provided for: <ol style="list-style-type: none"> Cab and chassis Equipment and body Parts manuals shall include complete and detailed information for replacement parts for the equipment, including general information, specifications ordering guide lines and superseded parts information. New CD roms or DVDs shall be provided when information is updated, superseded or changed. 	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>\$ <u>N/C</u> \$ <u>N/C</u></p>
<p>Parts Manual on Internet Access, or Other Electronic Media</p>	<p>One complete subscription; per Contract (not per vehicle)</p> <ol style="list-style-type: none"> Internet information shall allow the City 24 hour 7 days/week including holidays access from its main maintenance facility and all its satellite maintenance facilities. Internet information shall include complete and detailed information for parts for the: <ol style="list-style-type: none"> Cab and Chassis Equipment and Body Internet information shall cover vehicle/equipment, shall include general parts information, parts specifications, ordering guide lines and superseded parts information. Vendor shall provide access to the site for the length of time that the City owns the vehicle/equipment at a one time up front cost to the City. 	<p>Access Information: 7 days/week including holidays Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>CCO CURRENTLY USING PETERBILT</i> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Currently Amrep If other Specify: <u>does not offer Internet Access to Amrep Manuals. Site is Free.</u></p>	<p>\$ <u>N/C</u> \$ <u>N/C</u></p>

Vendor/Sub Vendor: Pesi Truck Center
Hardware Equip

	<p>5. Parts manuals shall include complete and detailed information for replacement parts for the equipment, including general information, specifications ordering guide lines and superseded parts information.</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	
<p>New Equipment Check-in Form:</p>	<p>The successful vendor shall complete the City's "New Equipment Check-in Form" completely and accurately with all requested information.</p>	<p>Amrep to do Body Portion</p>	<p>\$ <u> N/C </u></p>

5.1

Operator and Mechanics Training

Item	Description of Equipment	Offered Equipment	Cost
<p>On Site Equipment Manufacturers Training</p>	<p>On site the vendor shall insure that the equipment manufacturers training representative, after delivery of the equipment Contacts Fleet Maintenance training manager to coordinate equipment training.</p>	<p>Factory personnel to be present to work with City to start working with trucks.</p>	<p>\$ <u> N/C </u></p>
<p>Fleet Maintenance Training Manager</p>	<p>Mr. Charlie Pletcher, Telephone: 720.865.3951 Contact time: 8:00 am to 3:00 pm M-F</p>	<p>Thank You.</p>	
<p>Training Requirements</p>	<p>Training shall consist of factory training materials, classroom and actual field training on the equipment for the equipment operators and supervisors.</p>	<p>Amrep to provide training on Body</p>	<p>\$ <u> N/C </u></p>
<p>On Site Mechanics Training</p>	<p>On site mechanics training shall be 2 classes, approximately 8 hours, 2 shifts total provided at City facilities. The training shall cover maintenance and service procedures, trouble shooting and use of manuals.</p>	<p>Amrep to provide training on Body</p>	<p>\$ <u> N/C </u></p>

Vendor/Sub Vendor: Haroldine Equipment
Rush Trucks Loader

6.0

Repair Parts Delivery

Repair Parts delivery	
A.	<p>Prime Vendor is to indicate current Master Purchase Order agreement(s) in place with the City. (Example 0667A0108):</p> <p>If no agreement(s) exists, is your company willing to enter into long-term Master Purchase Order Agreement(s) in order to supply parts and components for the equipment and manufacturers proposed herein? YES OR NO <i>0 667AD.301</i></p>
B.	<p>Sub-Vendor is to indicate current Master Purchase Order agreement(s) in place with the City. (Example 0298A0609):</p> <p>If no agreement(s) exists, is your company willing to enter into long-term Master Purchase Order Agreement(s) in order to supply parts and components for the equipment and manufacturers proposed herein? YES OR NO YES Amrep Would.</p>

Dash Truck Center
 Vendor/Sub Vendor: *HARDWARE SUPPLY*

7.0
7.1

Warranty
General Warranty Provisions

WARRANTY (Table 1) Class 7 & 8 Vehicles		Complies (Y or N/A)
A.	Express warranty is to be a minimum of 12 months on the Class 8 vehicle chassis. The warranty on the refuse body of the vehicle is to be a minimum of 2 years. The standard factory warranty plan for both the chassis and refuse body, to include the hydraulic components, shall be provided as an attachment to your bid proposal.	Yes
B.	The Warranty is to include at no cost to the City of Denver, all parts and labor, and no charge for work performed at the vendors facility	Yes
C.	Warranty shall start when the City places the vehicle into service NOT on the delivery date. Taking an exception may make bid non compliant.	Yes
D.	Warranty plans shall consist of the total unit and be broken out to a separate plan for each warranty item if applicable, such as engine warranty plan, transmission warranty plan, electrical, etc.	Trk. DLR.
E.	Options listed shall be bid and provided as factory installed under the terms of the full factory-backed warranty. This includes, but is not limited to: air conditioning, radios, cruise control, bumpers, towing packages etc. Dealer-installed options will not be permitted unless pre-approved by the City in writing and, where applicable, indicated on bid sheet as a "dealer installed" non-factory item.	Trk. DLR.
F.	Bidder will be responsible for warranty repair of all installed options/auxiliary equipment included in the bid that has a standard warranty that is less than the standard warranty for the base vehicle/equipment	Yes
G.	Bidder shall use a single, local factory authorized dealership that will accomplish or coordinate required warranty work. The dealership must have a minimum of 1-year experience as a factory authorized vendor for like equipment being bid. Warranty parts shall be available and supplied within 24 hours	Yes
H.	If applicable, bidder shall provide a plan for the City to be reimbursed if the work can be done by the City on site. The current shop rate is \$71.00/hour, not to exceed \$85.00/hour. (Enter a response of N/A if not available)	Yes
I.	The bidder shall respond to request for warranty assistance within twenty-four (24) hours.	Yes
J.	Warranty work shall be accomplished within an appropriate length of time (generally less than 3 working days for everything other than major component repair such as a transmission rebuild) and shall be coordinated with an authorized City representative	Yes
K.	During the entire warranty period, if the unit requires transportation to a repair facility, the vendor/sub-vendors shall be responsible for all transportation at "NO COST" to the City and County of Denver. This includes transporting the unit back to the City's domicile location after repairs are complete. If an alternate is bid, charges to the City of Denver shall be listed (e.g. mileage, travel, labor, etc.). Even if an alternate is bid, in NO CIRCUMSTANCES will the City and County of Denver be responsible for transporting a unit greater than 25 miles from the center of Denver. For purposes of these warranty provisions, the center of Denver is defined as the City and County Building located on the corner of Colfax and Bannock Street.	N/A

Vendor/Sub Vendor: *Perk Truck Center*
Hardware Equipment

Loader Ketuse Trucks
CONFIGURATION #1

L.	The item(s) procured by the City pursuant to this Bid Proposal shall, in addition to being subject to the express warranties referenced above, be subject to all implied warranties arising by operation of law under State of Colorado and Federal law, including but not limited to the implied warranty of merchantability and, to the extent applicable, the implied warranty of fitness for a particular purpose arising under the Colorado Uniform Commercial Code, Title 4, Colorado Revised Statutes. The bidder shall in no event attempt to limit or disclaim any of such implied warranties under this Bid Proposal, and any attempt to do so will render the bidder's bid non-responsive under this Bid Proposal.	Yes
M.	This warranty in Table 1 and Table 2, is IN ADDITION to factory warranties on the vehicle and components	Note: Exception taken to Table 2, see note below.

7.2

Defective Unit / Defective Fleet Protocol

A.	<p>WARRANTY - (Table 2) Defective Unit and Fleet Protocol, Class 7 & 8 Vehicles</p> <p>Defective Unit-Definition: If during the warranty period, a vehicle/unit(s) covered by this specification is out of service for 10% or 208 hours or more during the first 2,080 service hours of the 1st year warranty period caused by defects in Design, Testing, Material, and/or Workmanship, this Defective Unit / Defective Fleet Protocol goes into effect at the City's option.</p> <p style="text-align: center;">7.2.A Sub-Sections 1, 2, 3, 4 Redacted 2-14-2013</p> <p>5. This protocol will not apply to delays in completion of warranty repairs due to acts of God, acts of the Public Enemy, acts of the Government (in either its sovereign or contractual capacity), fires, floods, or strikes, and unusually severe weather, PROVIDED that the Vehicle/Unit Vendor shall within three (3) calendar days of any such delay notify the City of Denver's Fleet Management in writing of the causes of delay and the facts relating to the problem</p> <p>6. After 24 hours/3 days of consecutive "lost service" of the vehicle/unit due to warranty problems the warranty period shall be extended by the length of lost service time due to warranty problems.</p> <p>7. The City of Denver shall consider the information submitted and may extend the time (208 hours) for completing, if in the City's, judgment, the facts justify such a warranty extension. The judgment of the City shall be final.</p> <p>B. Defective Fleet Definition: [Redacted] thirty percent (30%) of the total number of units delivered have the same part(s) and/or components failure requiring replacement and/or modifications caused by defects in Design, Testing, Material, and/or Workmanship.</p> <p>[Redacted] This Sentence Modified / Redacted 2-14-2013</p>
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** Note: Amrep would not be able to participate in Table 2 warranty, as we can not give warranty decisions to anyone other than ourselves as we have all the financial responsibility.

Deed Truck Center
 Vendor/Sub Vendor: *AMREP Support*

Loader Refuse Trucks
CONFIGURATION #1

C.	<p>Remedy: Following notification of a Unit/ Fleet Defect, the vendor shall develop and implement a plan that either reengineers, modifies, or replaces the defective parts/ systems, such that the identified problem is cured and the operation of the vehicle/equipment is not altered. When alterations are required to cure the defect, those alterations that change or modify the original bid specifications must be approved by the City and County of Denver prior to execution. The vendor will pay for all necessary labor and materials to repair, modify, and/or "update" all vehicles/units in this group. The vendor shall also propose a work schedule that is mutually agreed upon by the City of Denver that corrects the fleet deficiency within 30 days or a mutual agreed upon schedule.</p>
D.	<p>Exceptions: Fleet defects will not apply to minor aftermarket accessories specified by the City of Denver and installed per instructions/specifications. Examples include: toolboxes, spotlights, bed-liners, etc.</p>
E.	<p>Mitigation: Should the vendor become non responsive to the City's notification of a Fleet Defect, the City may employ several options. (1) After notifying the vendor in writing of The City's intent to mitigate its circumstances, the City may choose to perform its own warranty work and seek reimbursement for both parts and labor. (2) On major components, such as engine, transmission, air conditioning, etc., the City may choose to have the repairs performed by an authorized dealer and vendor shall reimburse the City for any parts or labor not covered by other warranty.</p>
F.	<p>Outside Metro-Denver: Vendor will pay for all transportation costs if unit(s) must be sent out of the Denver area for repairs. The City and County of Denver reserves the right to inspect unit(s) before returning back to Denver. The City and County of Denver also reserves the right to send at least one employee, without cost to the City, to inspect the repair(s) before unit is released back to the City.</p>
G.	<p>Expired Warranties: Units that have mutually agreed upon warranty defects during the warranty period will continue to be repaired until completed. If an on-going remedy continues past the warranty date the repairs will continue under warranty until completed or cease at a time agreed upon by the vendor and City and County of Denver.</p>

Rush Truck Center
Vendor/Sub Vendor: HREGUNE Equipment

7.3 Warranty Options

WARRANTY Options (Table 3) Class 7 & 8 Vehicles					
Please indicate in the columns below the additional cost of an extended warranty for all applicable components listed in the left hand column.					
Cost of Factory Extended Warranties	N/A = Not available				
	Inc = Included	Two Years	Three Years	Five Years	
A. Cab and Chassis		1265	2915	N/A	
B. Engine		INC		5 YEARS 1500MILE	1200
C. Transmission		INC		INC	950
D. Drive Train		N/A		N/A	N/A
E. Suspension		471	705	N/A	N/A
F. Air Conditioning		350	655	N/A	N/A
G. Hydraulics		Included	N/A	N/A	N/A
H. a. Pumps		Included	N/A	N/A	N/A
b. Cylinders		Included	N/A	N/A	N/A
c. Tanks		Included	N/A	N/A	N/A
d. Valves		Included	N/A	N/A	N/A
e. Controls		Included	N/A	N/A	N/A
I. Attached Body		Included	N/A	N/A	N/A
J. Joystick		Included	N/A	N/A	N/A
K. Electrical Components		Included	N/A	N/A	N/A
L. Camera System					
M. Other					
N. Notes:					

*Best Trade Center
HARVEY EQUIPMENT*

Vendor/Sub Vendor:

7.4 Warranty Service Locations: Warranty repair parts and service shall be available locally at an established factory authorized dealership meeting requirements of Table 1 Section 7.

A. Cab & Chassis:	Dealership Name: <u>Rush Truck Center</u>	Telephone #: <u>303-675-0111</u>
	Street Address: <u>5165 INSURE? Blvd</u>	City: <u>Denver Co.</u>
B. Barrel Loader Trash Body:	Dealership Name: <u>Hardline Equipment</u>	Telephone #: <u>(303) 500-2176</u>
	Street Address: <u>7500 Dahlia St.</u>	City: <u>Commerce City, CO 80022</u>
C. Sundries	Dealership Name: _____	Telephone #: _____
	Street Address: _____	City: _____

**** Note:** Also Factory Direct Assistance: Amrep, Inc: 1555 S. Cucamonga Ave., Ontario, CA 91761
(909) 923-0430 tele., (909) 923-2485 fax

Vendor/Sub Vendor: Rush Truck Center
Hardline Equipment

8.0

Heavy Duty Vehicle Delivery Documentation:

	<p>Delivery Documentation (GWR 26,001-Lbs and Above Heavy Duty)</p>
<p>A. Vehicles ordered under this specification shall be complete and delivered to CITY AND COUNTY OF DENVER, Fleet Management Division. All prices quoted must be quoted at a firm price F.O.B. Denver, Colorado, 5440 Roslyn St. Building C.</p> <p>B. Vendor shall supply at acceptance and delivery of vehicle.</p> <ol style="list-style-type: none"> 1. Bill of Sale (aka invoice, buyers order) 2. Original MSO (Manufacturers Statement of Origin) 3. Application for Title and/or Registration, Colorado Dept of Revenue form DR2395 (02-22-11) 4. Odometer Disclosure Statement, Colorado Dept of Revenue form DR2407 (09-07-05) 5. Letter of Certification on Vendor Letterhead (Required for Incomplete Vehicles) with added bodies etc, describes the final configuration of the vehicle) 6. Air Brake inspection form required for any vehicle with air brakes or truck units capable of towing trailers greater than 10,000-Lbs 7. Standard Sales Tax Receipt. 8. DOT inspection form. 9. Temporary License Plate. 10. New Equipment Check-in Form/ Vendor Supplied Information on the Vehicle. Form provided by Fleet contact Dolores @ 720.865.3903 11. Copy of City Purchase Order. 12. All Keys ordered for the Vehicle and Sundries, i.e. toolboxes etc. 13. All Manuals repair, parts, owners and/or CD's/DVD's etc 14. Vehicle Warranty information and receipt for optional warranty. 15. Receipts and Warranty information for vendor installed/supplied components (lift gates, snowplows, lighting equipment etc) 	
<p>C. For an "Incomplete Vehicle" (cab & chassis) add the following:</p> <ol style="list-style-type: none"> 16. Verification of Vehicle Identification Number (VIN), Colorado Dept. of Revenue form DR2087. 17. Statement of Fact for incomplete vehicles with added bodies etc, describes the final configuration of the vehicle. 18. Original weight slip. 	
<p>D. Delivery: Monday through Friday between 8:00am and 1:00pm. Location: CITY AND COUNTY OF DENVER Fleet Management 5440 Roslyn St. Building C Denver, CO 80216</p> <p>Contact person to coordinate delivery: Dolores Gallegos at (720) 865-3900 ext. 03 or direct line (720) 865-3903.</p>	

Red Tail Center
Vendor/Sub Vendor: APRO LIME EQUIPMENT


9.0 Vehicle Delivery
91 Delivery of Cab and Chassis to Body Vendor

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF CAB AND CHASSIS AFTER PURCHASE ORDER IS ISSUED TO BODY VENDOR	<u>60</u> DAYS
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9.2 Delivery of Completed Truck with Body Installed to City and County of Denver

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF COMPLETE VEHICLE AFTER CAB AND CHASSIS IS DELIVERED	<u>120</u> DAYS
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10.0 Complete Vehicle Cost

Include: <input type="checkbox"/> Cab & Chassis Total Cost <input type="checkbox"/> Side Loader Body Total Cost <input type="checkbox"/> Sundries Items Total Cost Do Not Include: <input type="checkbox"/> Optional Equipment <input type="checkbox"/> Warranty Cost (s) <input type="checkbox"/> Manual Cost (s)	ONE COMPLETE VEHICLE TOTAL COST Authorized Signature: 
	\$ <u>298,151.00</u>

UPDATED PER MARKET ADJUSTMENT (DRMC)20-64 (A1)
 CAB AND CHASSIS: \$138,961
 AMREP BARREL LOADER BODY: \$101,692.85
 SUNDRIES: INC
 SIGN BOARDS: \$600
 ECCO CAMERA SYSTEM: \$1,800
 TOTAL EACH DIESEL UNIT: \$243,053.85

CNG
 +CNG ENGINE: \$3,600
 +CNG SYSTEM: \$31,855
 TOTAL EACH CNG UNIT: \$278,508.85

CCD_LOI_RUSH TRUCK_FRONT LOADER

RETURN TO: Department of General Services PURCHASING DIVISION 201 West Colfax Avenue Department 304, 11 th Floor Denver, CO 80202 Phone: (720) 913-8100 FAX: (720) 913-8101	CITY AND COUNTY OF DENVER  DENVER THE MILE HIGH CITY	Department of General Services PURCHASING DIVISION www.denvergov.org/purchasing Buyer: Michael Romero 720-913-8122
ADRIENNE BENAVIDEZ MANAGER, GENERAL SERVICES	MICHAEL HANCOCK MAYOR	JAMES P. MCINTYRE DIRECTOR OF PURCHASING

FORMAL PROPOSAL

Formal Proposal No. _____

7063

REFUSE TRUCKS Front Loader and Small Rear Loaders 26,000-66,000 GVWR

SCHEDULE OF EVENTS

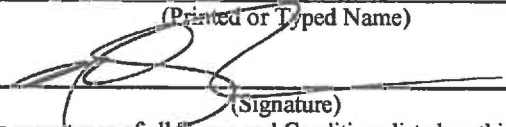
• Proposal Issued	February 19, 2013		
• Deadline to Submit Additional Questions	March 1, 2013	3:00 P.M.	Local Time
• Response to Written Questions	March 6, 2013		
• Proposal Due Date	March 12, 2013	3:00 P.M.	Local Time

Vendor offers to furnish to the City and County of Denver the materials, supplies, products or services requested in accordance with the specifications and subject to the Terms and Conditions described herein.

VENDOR SIGN HERE

Company Name: RUSH TRUCK CENTERS / COLORADO INC
aka RUSH TRUCK CENTER DENVER

By: Michael Russell
 (Printed or Typed Name)


 (Signature)

Signature constitutes acceptance of all Terms and Conditions listed on this form and all documents attached.

THIS PROPOSAL MUST BE RETURNED IN A SEALED ENVELOPE WITH THE PROPOSAL NUMBER AND PROPOSAL TITLE ON THE ENVELOPE

Reference Nos. 12-083

CITY AND COUNTY OF DENVER
Technical Specifications and Bid Items
For a
CNG Powered Front Loader 28-Yard Refuse Truck

1.0 General Description

A new current model year CNG powered front loader trash truck; cab over engine with low entry, cab forward design left hand drive. Powered by a CNG turbo-charged engine with charge air cooling, a 66,000 GVWR (plate certified) with 28-yard rectangular shaped front loader body. The front loader shall be capable of efficiently loading from 2 yd³ to 10 yd³ standard width side pocket City dumpsters. Collection operations shall be conducted only from the left side operator's position in tight with restricted access Denver Public School facilities which have tight turns, narrow pick up areas, deep drainage transitions, steep angles at street transitions into parking lots etc and overhead obstructions. Since the front loader trash truck will be used in and around schools excellent visibility in all directions is extremely important, front, rear and sides. The truck shall be suitable for a minimum of 6 years service (400 pick ups/day, 5 days/week) by Solid Waste Management in automated dumpster loading of school waste materials, compacting and transporting the refuse to a landfill or transfer station and dispensing the load efficiently from the body. The truck's dumpster body shall operate at maximum efficiency and speed when the truck engine is at "low idle" approximately 800-rpm or less, revving engine shall not increase speed /efficiency. The truck shall be fully equipped and road ready, easily capable of transporting over the road, into, trash transfer facilities or into landfills a fully packed minimum 28 yard load.

1.1 Standard Factory Equipment

All standard factory equipment shall be included with the vehicle/equipment; no deletions of standard factory equipment will be permitted unless specifically superseded in these specifications. Accessories not specifically mentioned herein but necessary to furnish a complete unit ready for use shall also be included.

1.2 Government Requirements (where applicable)

The vehicle/equipment shall be built to, and perform in accordance with, all the requirements of the latest edition of the following standards and specifications:

- FHWA, Federal Highway Administration
- SAE, Society of Automotive Engineers Specifications
- FMVSS, Federal Motor Vehicle Safety Standards
- DOT, Department of Transportation Regulations
- AWS, American Welding Society Standards
- PUC, Public Utilities Commission (Colorado)
- NFPA National Fire Prevention Association

1.3 Workmanship and Durability

Workmanship throughout the vehicle/equipment shall conform to the highest standards. Durability shall be sufficient to allow safe and efficient operation of the equipment/vehicle.

1.4 Completion of Bid Items and Alternates

Vendor shall complete each line item in "Offered Equipment" and "Cost" columns in the following manner:

- A. Provide vehicle/equipments technical information: in "Offered Equipment" provide technical information as requested and provide cost of item in "Cost" column.
- B. Included Standard Equipment: in "Offered Equipment" column provide technical information as requested for standard equipment in, "Cost" column write NC for "No Charge".
- C. Differences: in "RED" ink in "Offered Equipment" column adjacent to Description of Equipment provide information on the item being offered, in "Cost" column provide cost if there is a bid item cost.
- D. Vendors shall break out and list costs for each specification section. Failure to break out proposed costs may cause proposal to be non-responsive. Breakout costs will be used for comparisons clarifying cost issues and if deletions to the specifications need to be made.

1.5 Major Areas of Concern

	Description of Concern
A.	Left Side Operator Cab Area to include: <ol style="list-style-type: none"> 1. Visibility from the driver's seats (Blind Spots) The front loader trash truck will be used in and around schools so excellent visibility in all directions is extremely important, front, rear and sides 2. Steering wheel belly room. 3. Shoulder leg and hip room. 4. Head room. 5. Operator's vision. 6. Floor height and step distances. 7. Ergonomic layout of vehicle and dumpster body controls. 8. Ease and speed of operation of collection and packing functions.
B.	Maneuverability: The ability of the truck to effectively, safely and efficiently maneuver in Denver School's parking lots and narrow access driveways, transverse alley-to-street drainage depressions and make tight turns from narrow high crowned streets with vehicles parked in the streets
C.	Mirror width for use in obstructed tight areas to include: <ol style="list-style-type: none"> 1. Overall extended mirror width. 2. Minimum mirror width. 3. Ability for mirrors to be hit by obstructions (branches etc) and absorb the hit with out damage. 4. Ability for mirrors to be reset or adjusted into position without operator leaving operator's station.
D.	Warranty: <ol style="list-style-type: none"> 1. Ability and cost to obtain a 5-year warranty on cab and chassis. 2. Ability and cost to obtain a 5-year warranty on front loader body, dumpster pick up arm assemblies, hydraulic pump, motors cylinders and controls. 3. Location of warranty providers.

E.	Service Ability: 1. Ability to easily service cab and chassis items that require regular (yearly or less) servicing and maintenance 2. Ability to easily service front loader body components/items that require regular (yearly or less) adjusting, servicing and maintenance.
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2.0 Build Status of Vehicles:

2.1 Contractor and all sub vendors after receipt of the City's purchase order shall:

The primary Contractor (prime vendor) shall be responsible for providing within 15 business days to the City a "Preliminary Build Status Plan" to include but not limited to:

- A. The "Build Status Plan" shall include sufficient detail to assure that the ordered units will meet specifications and be built to the highest quality standards and be delivered on time.
- B. Placement date of initial order with the cab and chassis manufacture.
- C. Cab and chassis manufacturer's date of order acceptance. Written order confirmation is required.
- D. Placement date of initial order with the body manufacture.
- E. Body manufacturer's date of order acceptance. Written order confirmation is required.
- F. Build dates for all cab and chassis to include start date and completion date.
- G. Build dates for the body to include start date and completion date.
- H. Delivery date of the cab and chassis to the sub vendor's body manufacturer.
- I. Beginning and completion dates for installation of the body on the cab and chassis.
- J. Beginning and completion dates for installation of the CNG system on the vehicle.
- K. Ship date for each completed vehicle (cab and chassis with body) from sub vendor's body manufacturer to Denver and which location shipped to.
- L. Contractor and sub vendors local vehicle preparation time.
- M. Delivery of a completed vehicle meeting specifications to the City.

2.2 The Contractor shall contact all sub vendors:

The Contractor shall contact all sub-contractors providing accessories and equipment for the vehicle (s) and provide the sub-contractors with the a list of all accessories and equipment, manufacturer's order confirmation, order number, vehicle specifications, build date and delivery date to dealer from the vehicle manufacturer on the ordered vehicle. It is the primary selling dealer's responsibility to assure that the sub-contractors orders the accessories and equipment and has the items in stock and is prepared to install the accessories and equipment items when the vehicle arrives at the dealership.

3.0 **Basic Requirements, or approved equal.**
 When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

3.1 **Basic Vehicle**

	Description of Equipment	Offered Equipment	Cost
A.	CNG powered cab over engine, cab forward design tandem axle. 1. Sit-down left side operator controls, 2. Tandem axle 66,000 lb. GVWR (plate certified), 3. Wheelbase approximate 210 inch, 4. Effective cab to axle approximate 181-inch, clean 5. After frame 96" 6. Front tire cut angle 50° 7. Wall-to-wall turning diameter 80 ft. 8. Both the cab and chassis and body vendors shall verify wheelbase is appropriate for truck and specified body	Make: <u>PETERBILT</u> Model: <u>370</u> Left Side: <u>Yes</u> No CNG <u>Yes</u> No Rating: <u>66,000</u> lbs Wheelbase: <u>210</u> " <u>MAX CHANGE DUCT BODY</u> C to A: <u>181</u> " A F: <u>96</u> " Cut Angle: Left <u>45</u> ° Right <u>45</u> ° Turn Dia: Left <u>36.7</u> ft Right <u>38.7</u> ft <u>200WS</u>	
B.	The left side operator configuration is very important for operator comfort and efficiency. The operator position shall accommodate operators of various physical sizes providing good visibility, steering wheel/belly clearance, and shoulder width room. Also all the controls for operating the attached equipment shall be in an ergonomic layout/configuration that promotes minimal operator movement, operator comfort and operation efficiency.	_____ _____ _____ _____ _____	
C.	Frame: 1. Rating 66,000-lbs. GVWR minimum, 2. Heavy-duty 110,000-psi full channel heat-treated steel, with main frame 2,086,000 in-lb. RBM and deep frame section 3,235,000 in-lb. minimum.	Frame Rating: <u>66,000</u> -lbs Yield Strength: <u>120,000</u> psi Section Modulus/rail: <u>17.8</u> in ³ Frame RBM/rail: <u>2,136,000</u> lbf-in	\$ <u>512</u>
D.	All components that require regular servicing shall be easy to access and be located as much as possible to protect the components from road splash. Access to rear engine mounts or transmission removal should not require the removal of electrical wiring, hydraulic hoses, air tanks or air dryers. Air dryer shall be easy and quick to access for servicing.	<input checked="" type="radio"/> Yes No	\$ <u>INC</u>

E.	Towing Provisions: 1. Tow hooks, two front and two rear, frame mounted. 2. Air brake 3/8" female quick-connect hook up system on vehicle for wrecker air brake connection. Quick-connectors shall be accessible and protected but shall not stick out where they could get damaged. 3. A check valve shall be provided at the vehicles air tank to prevent air loss.	<input checked="" type="radio"/> Yes No Make: <u>quick connect</u> Model: <u>9/1</u> Yes No	\$ <u>220</u>
F.	Keying: 1. Keys keyed alike Ignition, Door, (same) and Toolboxes (same), 2 standard sets per vehicle. 2. Additional 5 key sets 3. If the City has similar make and model trucks in fleet the trucks shall be keyed the same as existing trucks.	Cost for 5 additional set of keys: \$ <u>20</u> <input checked="" type="radio"/> Yes No	\$ NC \$ <u>20.00</u> \$ _____

3.2 Engine or "Approved Equal"

	Description of Equipment	Offered Equipment	Cost
A.	CNG Engine: 1. Cummins ISL-G, 8.9 liter, VGT turbocharged natural gas engine, rated at 320 hp @ 2,000 rpm, torque 1,000 lb/ft @ 1,300 rpm, 2,200 rpm governed includes: 2. Engine shall utilize CNG (compressed natural gas) to meet current EPA on-highway emission regulations. 3. Engines shall be electronically controlled with following components: a. Engine protection system to monitor low oil pressure, high coolant temperature and low coolant level that will prevent component damage with manual over-ride on truck engine: b. Low oil pressure. c. High oil temperature. d. High coolant temperature. e. Low coolant level. f. High transmission oil temperature. g. Idle shutdown timer. h. Speed limiter top gear @ 65 mph and cruise. 4. Computer controlled fast idle and PTO protection. 5. Thermos bottle stopper-type dipstick. 6. Magnetic drain plug. 7. Delco-Remy 22-SI, 145 amp alternator.	Make: <u>Cummins</u> Model: <u>ISL-G</u> HP: <u>320</u> @ <u>2200</u> rpm Torque: <u>1000</u> @ <u>1700</u> rpm CNG <input checked="" type="radio"/> Yes No Meets EPA emission standards <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Make: <u>PACCAR</u> Model: <u>160</u>	\$ <u>8899</u>

Description of Equipment	Offered Equipment	Cost
3. Delco-Remy 42 MT, 12v starter with over-crank protection.	Make: <u>PACCAR</u> Model: <u>160</u>	
B. Power Take Off (PTO) 1. Transmission direct mounted Chelsea 890 series with hydraulic pumps direct mounted to Chelsea 890 PTO at rear of the transmission. 2. PTO control electrically actuated from inside cab. 3. PTO speed limiter shall be connected to the engine computer not to an external overspeed box (EOS). 4. PTO shall efficiently operate all hydraulic systems at engine "low idle" 750 rpm or less. Increasing engine speed above 800 rpm shall not improve hydraulic operations.	Make: _____ Model: _____ Location: _____ Yes No <u>800 MF</u> Yes No _____ Yes No _____ PTO Idle rpm: _____	\$ <u>INC</u> \$ <u>INC</u> \$ <u>INC</u> \$ <u>INC</u>
C. Filtration: 1. Oil: Fleetguard LF3000 full flow/bypass oil filter. 2. Fuel: Racor 690RP12 fuel/water separator with thermostatically controlled fuel line heater.	Make: <u>FLEETGUARD</u> Model: <u>LF 3000</u> Make: _____ Model: _____	\$ <u>INC</u> \$ <u>N/A</u>
D. Engine Air Intake: 1. The air intake shall be on the far left side of the vehicle at cab height. 2. The air intake shall be positioned so that it can not draw in exhaust gases. 3. Air filter dual element dry type with air inlet restriction indicator located in cab	<input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Make: <u>DONALDSON</u> Model: <u>16' FV9</u>	\$ <u>STD</u>
E. Exhaust Meeting 2012 Tier 4 EPA Standards: 1. Exhaust discharge shall be right side discharge opposite side from the driver's station to reduce exhaust getting into the cab and prevent spilled paper and other combustible products being dumped into the body from being susceptible to ignition. " Vertical discharge not acceptable " 2. The exhaust after treatment device shall be installed so as to not obstruct maintenance/repairs underneath the truck. 3. Horizontal with stack and stainless steel exhaust guard that will easily fit up to Denver's exhaust gas evacuation system. 4. Exhaust discharge shall be right side discharge and exhaust gases shall not discolor the body or be drawn into the operator's cab.	Trap Make: _____ Model: _____ Location: _____ Yes No Yes No Yes No	\$ <u>N/A</u>

<p>F.</p>	<p>Fuel Tank: 1. CNG fuel capacity 75 DGE (diesel gallons equivalent) minimum 2. Fuel Tank: a Fuel tank(s) shall meet or exceed 1) NFPA 52 standards 2) US-DOT/FMVSS304 3) ISO 11439 b Tank Manufacturer c Tank Information 1) Tank Construction Type: composite 2) Service Life Years: 20 years 3) Recertification Period: 8 years 4) Type of Recertification Inspection Required 5) Tank Service Pressure Full: 3,600 psig @ 70°F (21°C) 6) Each CNG fuel tank shall have a ¼-turn ball stainless steel shutoff valve mounted at the tank inlet.</p>	<p>Gallons: _____ DGE</p> <p>Yes No <i>SEE ATTACHED SHEET</i> Yes No Yes No</p> <p>Make: _____ Model: _____</p> <p>Material: _____ Service Life: _____ yrs Recertification: _____ yrs Inspection Type: _____ Service Pressure: _____ psig Yes No</p>	<p>\$ <u>38,905</u></p>
<p>G.</p>	<p>Tank Installation Location: 1. The CNG tank mounting location shall be mutually agreed upon by the vendor and the City prior to the ordering of the cab and chassis. The vendor shall provide drawing of proposed CNG tank location(s). The locations shall not increase the truck wheelbase or the overall height of the truck and body 12' – 6" or body length over a regular non-CNG configuration: 2. CNG Tank Information: a) Tank Size: provide diameter x length b) Tank Weight each: Empty c) Quantity of Tanks for 75 gallon DGE d) Weight All Tanks: Empty a) Weight All Tanks: Full CNG e) Tank Enclosure Width, Length, Height f) Tank Enclosure Material: Steel/Gauge</p>	<p>CNG Tank (s) Location: _____ _____ _____ _____ _____</p> <p>Size: _____ dia x _____ long DEG Net _____ gal Tank Weight: _____ lbs # of Tanks: _____ DEG Net _____ gal Weight all tanks and brackets etc: _____ lbs Weight All Tanks Full CNG: _____ lbs Enclosure Size: _____ x _____ x _____ Material: _____ Gauge: _____</p>	<p>\$ _____</p>
<p>H.</p>	<p>Tank Mounting and System Requirements: 1. Tank mounting type: a. End/dome/ boss, 2-piece saddle mounts on each tank end. The tanks shall be installed inside a steel tank mounting frame. The frame shall be 3" x 1 ½" x 3/16" tubing. The frame shall be powder coat finished for durability.</p>	<p>Yes No</p> <p>Frame Size: _____ x _____ x _____</p>	<p>\$ _____</p>

<p>b. CNG tank manufacturer 2-point band type CNG bracket with rubber cushion between tank and bracket to prevent slippage and eliminate chaffing, accommodate tank growth by changes in internal pressure.</p> <p>c. Tank(s) shall be shielded/protected from mechanical damage by a metal protective cover.</p> <p>d. The cover shall be easy to remove for tank inspections and routine maintenance work.</p> <p>e. The tank cover shall be either non-corrosive or powder coated to prevent corrosion and maintain an attractive appearance.</p> <p>f. The primary tank relief valve (PRD) shall be vented up and away from the vehicle and any ignition sources. The vent shall be protected from rain or vehicle wash water from entering the vent line. The vent line shall be ½" diameter minimum.</p> <p>2. CNG Pressure Reducing Regulator System:</p> <p>a. The pressure reducing regulator system shall be mounted inside a protective steel enclosure no more than 6 ft from the CNG fuel tank.</p> <p>b. From the CNG fuel tank to the regulator the tubing shall be ½" od x 0.049" wall 300 series stainless steel minimum.</p> <p>c. The pressure reducing regulator system shall have 2 pressure gauges installed in the system.</p> <p>1) High Pressure gauge 0-to-5,000 psi installed on tank side to show tank system pressure.</p> <p>2) Low pressure gauge 0-to-250 psi to show engine downstream fuel delivery pressure to the engine.</p> <p>3) Gauges shall be stainless steel glycerin filled.</p> <p>d. The engine coolant flow to the pressure reducing regulator shall be minimum of 1 gallon/minute of 180°F coolant per 50 hp of engine output. For coolant flow the heat exchanger for the engine shall be rated at 450 hp to cover engine rating increases after the truck is delivered.</p> <p>e. Engine coolant flow and CNG fuel supply shall enter the regulator on the same side of the regulator.</p> <p>f. Coolant ports shall be oriented vertical (up) in horizontal regulators to prevent air from becoming trapped in the regulator.</p>	<p>Yes No</p> <p>Material: _____ Gauge: _____</p> <p>Yes No</p> <p>Material: _____</p> <p>PRD Pressure Release: _____ psig</p> <p>Yes No</p> <p>Tubing Size: _____</p> <p>Yes No</p> <p>Tubing Size: _____ x _____ Type: _____</p> <p>Pressure Range: _____ to _____ psi</p> <p>Pressure Range: _____ to _____ psi</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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Hardline Equipment

Po Box 39
 Henderson, Co. 80640

Proposal

Proposal Date: 3/15/2013

Proposal #: 3070

Project:

Bill To:

City and County of Denver
 Accounts Payable
 201 West Colfax Ave Dept 908
 Denver, Co 80202

Description	Est. Hours/Qty.	Rate	Total
80 DGE Frame Mounted on gas ISXG Chassis-Fontana Instalation		0.00	0.00
Provide and Install the CNG fuel storage & High Pressure Fuel Lines on (1) CNG Ready Chassis. 93" Clearance required on both sides of frame. Fuel system installed in Fontana, California		0.00	0.00
Fabricate, Assemble and Install Frame Mounted Cylinder Pack, High Pressure Plumbing & Fuel Management Module	1	38,805.00	38,805.00
25" X 80" Strap Mounted 3600 psi Type IV CNG Cylinder(Includes Manual Valve and Dual PRDs)		0.00	0.00
Custom Cylinder Covers with Heavy Duty Skid Sheild(Finished Aluminum)		0.00	0.00
Standard 25" Tank Braket Ass.		0.00	0.00
High Pressure Fittings and Lines		0.00	0.00
Hi-Flow Fuel Management Module(Includes NGV-1 Fill Receptackle Filter, HPR, High and Low Pressure Gages, 1/4 Turn and Lock-Off Solenoid)		0.00	0.00
Hardware		0.00	0.00
CNG Fuel		0.00	0.00
Standard Warranty		0.00	0.00
Total			\$38,805.00

**UPDATED
 PRICE:
 \$37,805**

<p>g The pressure reducing regulator shall not under any circumstance be installed in series with the truck cab heater system.</p> <p>3. Automatic Fuel Shut Off:</p> <p>a The automatic fuel shut off valve shall be plumbed directly to the exit/warm side of the engine coolant heated pressure reducing regulator.</p> <p>b The automatic fuel shut off valve shall have its weight supported by a mounting bracket.</p> <p>c The automatic fuel valve shall have a Cv of 2.0 minimum to assure adequate fuel flow.</p> <p>d The automatic fuel shut off shall be a NC (normally closed) valve when the ignition is in "Off" position.</p> <p>4. Fuel Lines:</p> <p>a All high pressure shall be ½" od x 0.049" wall stainless steel 316L tubing appropriate for the application.</p> <p>b Stainless steel lines shall have thermal expansion/contraction loops for smaller diameter lines and S-bend expansion joints for larger diameter lines.</p> <p>c All CNG lines shall be supported with stainless steel rubber bushed aircraft P-type clamps. The maximum distance between clamps shall no more than 24".</p> <p>d Fitting for the CNG fuel system shall be:</p> <ol style="list-style-type: none"> 1) Stainless steel tube fittings shall be Swagelok or Parker A-lok with thread sealant. 2) Special NPTF pipe fittings shall be stainless steel with thread sealant. <p>e All NPT fitting shall be installed on male pipe threads using proper thread sealants.</p> <ol style="list-style-type: none"> 1) Thread sealant and anti-seize shall be a nickel impregnated or nickel coated Teflon tape. 2) Teflon tape shall start at 2nd thread. 3) On ½" and under use 2 wraps of tape 4) On 5/8" to 1" use 3 wraps of tape. 5) Assure last section of tape is pulled down tight against the threads. 6) Do not use sealant on compression threads 	<p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Valve Cv: _____</p> <p>Yes No</p> <p>Tubing Size: _____ od x _____ wall</p> <p>Type: _____</p> <p>Yes No</p> <p>Yes No</p> <p>Make: _____ Type: _____</p> <p>Yes No</p> <p>Yes No</p> <p>Sealant Type: _____</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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<p>f Post heat exchanger hoses and lines may be Parker 929 heavy-wall PTFE hose exceeding SAE100R14A or stainless steel tubing.</p> <p>5. Fuel Fill System:</p> <p>a The fuel receptacle and fuel fill system shall be rated for both "fast fill" and "slow fill" with a minimum ½" od x 0.049" wall 300 series stainless steel.</p> <p>b The fuel fill nozzle:</p> <p>1) Shall be a male NGV1 OPW with rubber protective cover boot</p> <p>2) Fill location on the driver's side of the vehicle</p> <p>3) The fuel filler line shall be plumbed to the CNG tank bank.</p> <p>c The tank fill enclosure shall have:</p> <p>1) A high pressure line/tank pressure gauge 0-to-5,000 psi</p> <p>2) A low pressure fuel to engine pressure gauge 0-to-250 psi</p> <p>3) An OPW male NGV1 fuel fill receptacle with easy access and excellent clearance for both "fast fill" and "slow fill" receptacles.</p> <p>4) An emergency ¼-turn shut off valve for shutting down the system in case of a fueling emergency.</p> <p>d The fuel fill access shall be easy to access and easy for the operator to see for fueling and to prevent drive-off with fuel hose attached.</p> <p>e The fill receptacle shall have an easy to remove/reinstall fuel fill cover to protect the fill port from contamination during truck operation.</p> <p>6. CNG Filtration:</p> <p>a High pressure, on the fuel tank(s) fill line to clean the CNG before it enters the fuel tank storage system.</p> <p>b Low Pressure, on the downstream "low pressure" post regulator engine delivery side. The "low pressure" filter shall be a Fleetguard spin-on NG5900 with liquid drain or approved equal.</p>	<p>Make: _____ Type: _____</p> <p>Yes No Tubing Size: _____ od x _____ wall</p> <p>Make: _____ Model: _____</p> <p>Fill Location: _____ Yes No</p> <p>Pressure Range: _____ to _____ psi Pressure Range: _____ to _____ psi</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Make: _____ Model: _____</p> <p>Make: _____ Model: _____</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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	<p>7. Fuel Gauge:</p> <p>a An electric fuel gauge shall be provided with easy to see vehicle dash gauge to show fuel tank volume.</p> <p>b The fuel sender shall be a sealed unit mounted to the high-pressure tank system</p> <p>c A sealed 3-pin Weatherpak connector with a 1-amp fast blow automotive fuse shall connect the sender to the gauge.</p> <p>d Pins are:</p> <p>1) Red = power</p> <p>2) Green = signal</p> <p>3) Black = ground</p>	<p>Fuel Gauge Type: _____</p> <p>Make: _____ Model: _____</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ _____</p>
I.	<p>Coolant Hoses:</p> <p>1. Gates Blue Stripe hoses</p> <p>2. With constant torque hose clamps.</p>	<p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>570</u></p>
J.	<p>Fan:</p> <p>1. Fan clutch heavy-service-duty with automatic fan control.</p> <p>2. The fan shall operate off of engine coolant and transmission coolant temperature.</p>	<p>Make: <u>Horton</u> Model: <u>2 SPEED</u></p> <p><input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>570</u></p>
K.	<p>Air System:</p> <p>1. Air compressor Bendix 18.7-cfm Tu-Flo minimum</p> <p>2. Air tanks mounted horizontal inside frame.</p> <p>3. Air drain valves shall be ¼-turn brass with "Flag" style handle and air blast routed away from the person operating the valve.</p> <p>4. The drain valves shall be installed in an easy to access and operate position in a central location</p> <p>5. The valve bracket shall be permanently labeled (engraved): "Drain Air Tanks Daily" ½" font size "Air Valve 1" "Air Valve 2" "Air Valve 3" ¼" font size</p> <p>6. Air lines shall be color-coded nylon type.</p>	<p>Make: <u>Bendix</u> Model: <u>18.7</u></p> <p>Capacity: _____ cfm</p> <p>Location: _____</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>570</u></p> <p>\$ <u>5100</u></p>
L.	<p>Cold weather starting aids on truck engine. "No Approved Equal"</p> <p>1. Block heater, Phillips "Zero-Start" 120vAC, 1500 Watt, engine coolant temperature controlled to:</p> <p>a. Turn "on" at 40°F engine coolant temperature.</p> <p>b. Turn "off" at 55°F engine coolant temperature.</p> <p>2. The plug-in station shall have 2 LED indicator lights to:</p> <p>a. Light when plugged into "hot line" to show "hot line is energized.</p> <p>b. Light when engine coolant drops below 40°F.</p>	<p>Make: <u>Phillips</u> Model: <u>ZERO START</u></p> <p>On Temperature: <u>40</u></p> <p>Off Temperature: <u>50</u></p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>9000</u></p> <p>\$ <u>1mc</u></p>

3. Plug-in shall be mounted below driver's door, protected from mechanical and weather damage. Heater plug shall be a male standard grounded 15 amp rated plug. 4. A decal or information plate shall be provided describing how the system functions. The decal/plate shall be heavy-duty UV protected and capable of withstanding pressure washing and other normal vehicle functions. 5. Cold weather starting assist (no either allowed).	Location: <u>BELOW DRIVER DOOR</u>	\$ <u>INC</u>
	<input checked="" type="radio"/> Yes No	\$ <u>INC</u>
	Type:	\$

3.3 Transmission and Drivetrain

Description of Equipment	Offered Equipment	Cost	
A. Transmission shall be an Allison New World HD4560P, wide ratio, 6-speeds with the following components: 1. Transmission and rear differential gearing shall be optimized for "Best" fuel economy. 2. The shift point calibrations both primary and secondary shall be factory S-1 set for reducing the shift point below maximum governed speed but the engine shall not drop below the peak torque point. On engines with 2,100 rpm full-load governed speed the shift point is reduced 200 rpm. For engines with higher or lower full-load governed speeds the shift point will need to be determined on a case-by-case basis. 3. Transmission interface wiring for Allison MD/HD transmission. 4. Electric push-button transmission controls shall be located on the "dog house" not under the joystick armrest. Location to be mutually agreed upon. 5. TranSynd TES 295 automatic transmission fluid. 6. Allison High-Capacity filters for extended drain interval of 75,000 miles or 36 months. 7. Transmission water-to-oil cooler. 8. Remote mounted transmission filter. 9. Magnetic drain plug.	Make: <u>ALLISON</u> Model: <u>4500</u> Speeds: <u>6</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>9976</u> \$ <u>INC</u>	
	B. Automatic Work Brake Hold Activated with: 1. Service brake automatically applies when the lift arm is activated. 2. Manually very easy to access button or switch.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>450</u>
	C. Rear Axles: 1. Eaton single reduction, capacity 46,000-lbs. 2. Driver controlled main power divider locking differential.	Make: <u>EATON</u> Model: <u>P46-170</u> Yes No	\$ <u>500</u>

Description of Equipment	Offered Equipment	Cost
3. Oil pump. 4. Axle temperature sensor. 5. Axle ratio for best fuel economy with an approximate 60-mph top speed. 6. Oil seals, Union 76 Triton EP 75W-90 synthetic gear lubricant. 7. Magnetic drain plug.	<input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Top Speed: <u>60</u> mph level Gear ratio: <u>5.25</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	
D. Front Axle: 1. Eaton, capacity 20,000-lbs. minimum with oil seals and Union 76 Triton EP 75W-90 synthetic gear lubricant.	Provide specs: Make: <u>EATON</u> Model: <u>D2000F</u> Capacity: <u>20000</u>	\$ <u>570</u>
E. Springs: 1. Front leaf with graphite impregnated spring pin bushings. Front: capacity 20,000-lbs. minimum. 2. Rear Hendrickson HMX-460 Haulmaxx varirate spring system. Rear: capacity 46,000-lbs. minimum.	Make: <u>PETERBILT</u> Model: <u>20000*</u> Capacity: <u>20000</u> - lbs Make: <u>HENDRICKSON</u> Model: <u>HMX-460</u> Capacity: <u>46000</u> - lbs	\$ <u>570</u> \$ <u>399</u>
F. Brakes: 1. Bendix, 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads. 2. Bendix, 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads. 3. Brake chambers type 2824, size 24 chamber.	Front Make: <u>BENDIX</u> Model: <u>ADB22x</u> Disc Size: <u>17</u> in Rear Make: <u>BENDIX</u> Model: <u>ADB22x</u> Front Chamber: <u>24</u> Rear Chamber: <u>24</u>	\$ <u>570</u>
G. Anti-Lock Brake System / Automatic Traction Control system: 1. Anti-Lock Brake System (ABS): Eaton 6S/6M with ATC, 6-channel with (6 sensors & 6 modulators) and 5-9 psi crack pressure relay valve. 2. Automatic Traction Control (ATC) shall work in conjunction with the Eaton ABS brake system in low traction situations limiting torque to least loaded tire allowing most loaded tire to receive torque and pull the vehicle. The ATC system in conjunction with the Interaxle Driveline Lock shall provide traction control very similar to the Driver Controlled Differential Lock system. 3. Interaxle Driveline Lock (IADL) to lock front and rear drive axles together. The interaxle differential lock shall be automatically locked via the ATC or manually locked by the driver. The IADL switch shall activate a flashing LED warning light. 4. Air lines shall be color-coded nylon type.	Make: <u>EATON</u> Model: <u>6S/6M</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	\$ <u>266</u> \$ <u>145</u> \$ <u>570</u> \$ <u>570</u>

H.	Air Dryer, (No Approved Equals) 1. Bendix AD-IP with heated steel reservoir, automatic moisture ejector and cable operated air tank drain valves accessible from outside of vehicle. . 2. Air dryer shall be installed on the outside of the frame rail in a location that is easy access and does not exceed 15-minutes to service unit.	Make: <u>BENDIX</u> Model: <u>AD-15-50</u> <input checked="" type="radio"/> Yes No	\$ <u>570</u> \$ <u>570</u>
I.	Driveline: 1. Eaton Permalube type U-joints or approved equal.	Make: <u>EATON</u> Model: <u>PERMALUBE</u>	\$ <u>570</u>
J.	Power Steering: 1. TRW with 2-qt. reservoir.	Make: <u>SHEPARD</u> Model: <u>50 110</u>	\$ <u>504</u>

3.4 Electrical System

	Description of Equipment	Offered Equipment	Cost
A.	Alternator: 1. Heavy duty, internally regulated, output 160-amp minimum.	Make: <u>PACCAR</u> Model: <u>160</u> Rating: <u>160</u> amps	\$ <u>570</u>
B.	Batteries: 1. Two or three Group 31 batteries with a total CCA of 1,950 minimum. 2. Battery location frame mounted left hand side. 3. Battery shut-off switch easy to see and access. 4. Jump start provision easy to access. 5. Battery cables (00) stranded copper minimum.	Make: <u>PACCAR</u> Model: <u>PREMIUM</u> Quantity: <u>3</u> CCA's: <u>2100</u> Location: <u>LH</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Size: <u>00</u>	\$ <u>570</u>
C.	Circuit Protection: 1. Circuit breakers with manual reset, no fuses. 2. Circuit breaker panel shall be easy to access. 3. Circuit breaker panel shall be clearly labeled for easy identification.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>570</u>
D.	Wiring: 1. Wiring shall be color coded with hot stamped wire numbers. 2. All wiring shall be run in sealed wiring looms to reduce corrosion from magnesium chloride products	<input checked="" type="radio"/> Yes No <u>STANDARD</u> <input checked="" type="radio"/> Yes No	\$ <u>577</u>
E.	Body Builder's Junction Box 1. Body builder's junction box shall be provided. 2. Terminal shall be marked for easy identification.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>216</u>
F.	Back Up Alarm: 1. Back up alarm, 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter.	<input checked="" type="radio"/> Yes No	\$ <u>27</u>

Description of Equipment	Offered Equipment	Cost
2. The alarm shall be mounted out of the vehicle's rear wheel splash area.	<input checked="" type="radio"/> Yes No	
G. Cab and Chassis Lights: 1. Halogen sealed beam headlights, 12v. 2. Daytime running lights. 3. Wiring shall be sealed modular plug-in type. 4. Marker lights LED type.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Make: <u>9406</u> Model: <u>LC0</u>	\$ <u>570</u> \$ <u>570</u>

3.5 Cooling System

Description of Equipment	Offered Equipment	Cost
A. Cooling system with coolant recovery tank capable of maintaining engine manufacturer's recommended operating temperatures at an elevation of 6,800' in 120° F low humidity ambient conditions shall be provided.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
B. Coolant protection shall be -34° F.	Coolant Type: _____ Protection Level: <u>-34</u> °	\$ <u>570</u>
C. Fleetguard coolant filter WF2071.	Make: <u>FLEETGUARD</u> Model: <u>WF 2071</u>	\$ <u>570</u>

3.6 Tires and Wheels

Description of Equipment	Offered Equipment	Cost
A. Tires: 315/80R22.5, tubeless, 20-ply, load range L. 1. Front: Michelin XZU-S, Steer Tires 10,000 lb rated @ 130 psig 2. Rear dual: Michelin XZU-S, Steer Tires 10,000 lb rated @ 130 psig	Make: <u>MICHELIN</u> Model: <u>XZUS</u> Make: <u>MICHELIN</u> Model: <u>XZUS</u>	\$ <u>209</u> \$ <u>1590</u>
B. Wheels: 1. Disc, 10-hole, Hub piloted type, Single nut, Meets ISO Standard 4107, size 22.5" x 9" 2. Powder epoxy coated finish, color "White".	Make: <u>ACQUINS</u> Model: <u>3707</u> Size: <u>22.5</u> x <u>7</u> Powder Coated: Yes <input checked="" type="radio"/> No <input type="radio"/> Color: <u>WHITE</u>	\$ <u>1109</u>

3.7 Interior

Description of Equipment	Offered Equipment	Cost
A. Left side operating controls: 1. Vehicle operation shall be only from left side of vehicle. 2. Driver's controls shall be ergonomically laid out for maximum driver efficiency in operating the automated collection body.	Driving Location: <u>LEFT</u> side <input checked="" type="radio"/> Yes No	\$ <u>570</u>

Description of Equipment	Offered Equipment	Cost
<p>3. Since the vehicle will be used in automated front load trash collection with a "operate at idle" hydraulic system and a ergonomic multi-position joystick the transmission shifter location needs to be in a location the driver can easily access but not in the conventional location directly adjacent to the driver where it will be covered by the automated body's joystick control. With a "front load" operation the driver will be required to shift the vehicle 3X's per stop minimum. The operator will at minimum shift from drive to reverse and back to drive at each collection location.</p> <p>4. Doors:</p> <p>a. Left and right doors shall be front hinged.</p> <p>b. Left and right doors shall have electric full roll up/down windows.</p>	<p><input checked="" type="radio"/> Yes No Shifter Location: _____</p> <p>Joystick Location: _____</p> <p><i>DEPENDENT ON BODY MFG</i></p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>ENC</u></p> <p>\$ <u>STO</u></p>
<p>B. Driver Viewing Environment/Area:</p> <p>1. Since the front loader trash truck will be used in and around schools excellent visibility in all directions is extremely important, front, rear and sides.</p> <p>2. Requested SAE J1750 and SAE J1050a "Target Evaluation" method operator view area information must be submitted with bid for evaluation.</p> <p>3. Failure to submit the requested information may make bid non-responsive.</p> <p>4. Vendor using the "Target Evaluation" method shall provide with bid, top view drawings with dimensions of the visibility values from the operator's seat at eye level for operators of the following percent quartile sizes:</p> <p>a. 5th % male height 1554 mm or 61.18"</p> <p>b. 50th % male height 1668 mm or 65.67"</p> <p>c. 95th % male height 1783 mm or 70.20"</p> <p>5. Drawings shall be on 11" x 17" paper ("B" size drawing paper) for easier reading.</p> <p>6. Good operator exterior visibility is a major safety concern and increasing operator viewing area and eliminating "blind spots" is beneficial to the City</p>	<p>Drawings Provided: Yes No</p> <p>Paper Size: _____ " X _____ "</p>	<p>\$ _____</p>

C.	<p>Required Submittals with Bid:</p> <ol style="list-style-type: none"> 1. Requested information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive. 2. Vendor shall provide with bid, drawings with dimensions and photographs of the proposed cab interior for review. 3. Interior dimensions measured: <ol style="list-style-type: none"> a. Belly Room: seat back to steering wheel. b. Leg Room: seat front edge to brake pedal. c. Head Room: seat cushion to ceiling. d. Torso Room: Width from door to doghouse or other obstruction. e. Seat fore/aft travel: f. Seat height travel: g. Steering Wheel Knuckle Clearance: distance to closest object h. Floor Height: measured ground to cab floor. i. Cab Step Heights: measured from ground. j. Steering Wheel Tilt and Telescoping: 4. Location of transmission shifter: should not be obstructed by automated barrel loader's joystick. 	<p>Provide Materials: _____</p> <p>Seat full forward: <u>4</u> " Seat full back: <u>13</u> " Seat full forward: <u>6</u> " Seat full back: <u>12</u> " Seat full lowered: <u>48</u> " Seat full raised: <u>78</u> " Smallest measurement: <u>23</u> " Travel: <u>3</u> " Travel: <u>2</u> " Clearance: <u>6</u> " Height: <u>35</u> " 1st Step: <u>15</u> " 2nd Step: <u>26 1/2</u> " Tilt: <u>5</u> ° Telescoping distance: <u>0</u> " <input checked="" type="radio"/> Yes No</p>	
D.	<p>Seats: Drivers seats shall be:</p> <ol style="list-style-type: none"> 1. Left seat shall be air suspension Bostrom, high back driver's seat, gray vinyl with cloth insert and armrests. 2. Right side seat shall be spring suspension Bostrom, mid-back seat, gray vinyl with cloth insert and armrests 	<p>Make: <u>PETERBUC</u> Model: <u>H-1 BNC</u> Make: <u>PETERBUC</u> Model: <u>1084L</u></p>	<p>\$ <u>878</u> <u>233</u></p>
E.	<p>Engine Cover "Doghouse"</p> <ol style="list-style-type: none"> 1. The engine cover "doghouse" shall be recessed to accommodate the ergonomic positioning of the automated front loader controls. 2. The vehicle manufacturer shall work with the body supplier to assure that the controls are the most ergonomic possible to assure operator comfort and reduce repetitive motion injuries. 3. The transmission shifter shall not be obstructed by the front loader joystick. The transmission shifter should be located in a location convenient to the operator but not directly adjacent to the driver's side. The transmission/joystick controls are very important since the operator will need to shift from drive to reverse and back to drive at each stop. Some stops may require additional shifting as the operator maneuvers the truck into proper location 4. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. 	<p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Shifter Location: _____ Front Loader Joystick Location: _____ <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>240</u></p>

	<p>5. The City, body vendor and the vehicle supplier shall mutually determine control locations after Contract award.</p>	<p><input checked="" type="radio"/> Yes No</p>	
<p>F.</p>	<p>Required Submittals with Bid: 1. Requested information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive. 2. Vendor shall provide with bid, drawings with dimensions and photographs of the proposed cab interior for review. 3. Interior left side dimensions measured: a. Belly Room: seat back to steering wheel. b. Leg Room: seat front edge to brake pedal. c. Head Room: seat cushion to ceiling. d. Torso Room: Width from door to doghouse or other obstruction. e. Seat fore/aft travel: f. Seat height travel: g. Steering Wheel Knuckle Clearance: distance to closest object h. Floor Height: measured ground to cab floor. i. Cab Step Heights: measured from ground. j. Steering Wheel Tilt and Telescoping: 4. Location of the transmission shifter: should not be obstructed by automated front loader's joystick.</p>	<p>Provide Materials: _____ _____</p> <p><input checked="" type="radio"/> Yes No</p> <p>Seat full forward: <u>11</u>" Seat full back: <u>16</u>" Seat full forward: <u>6</u>" Seat full back: <u>12</u>" Seat full lowered: <u>43</u>" Seat full raised: <u>48</u>" Smallest measurement: <u>27</u>" Travel: <u>3</u>" Travel: <u>2</u>" Clearance: <u>6</u>" Height: <u>25</u>" 1st Step: <u>15</u>" 2nd Step: <u>26 1/2</u>" Tilt: <u>5</u>° Telescoping distance: <u>0</u>"</p>	
<p>G.</p>	<p>Instrumentation: 1. Instrumentation shall include speedometer, engine hourmeter, tachometer, voltmeter, coolant temperature, oil temperature, oil pressure, fuel level and air pressure with low-pressure alarms (light, audible).</p>	<p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>INC</u></p>
<p>H.</p>	<p>Steering: 1. Steering controls shall comfortably accommodate operators of various sizes, from short and small to tall and larger. 2. Steering tilt easy to adjust 3. Telescoping easy to adjust,</p>	<p><input checked="" type="radio"/> Yes No Tilt: <input checked="" type="radio"/> Yes No Telescoping: Yes <input checked="" type="radio"/> No Travel In-Out: _____ in</p>	<p>\$ <u>INC</u></p>
<p>I.</p>	<p>Upfitter's Switch Panel: 1. The vehicle manufacturer shall provide for the automated front load dumpster body manufacture an upfitter's switch panel for automated body control switches. 2. The panel location shall be in an ergonomic location and shall not require more than 30° head movement and be within easy reach of driver's of various sizes and physiques.</p>	<p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>INC</u></p>

	3. The switch panel shall have permanently labeled and lighted rocker switches for all optional sundries equipment and lights etc.	<input checked="" type="radio"/> Yes No	
J.	Floor Covering: 1. Floor covering shall be heavy-duty black rubber/vinyl flooring.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
K.	Air Conditioning: 1. Factory installed cab R134A air conditioning A. Cab shall be insulated to include floor, firewall, roof and walls.	Refrigerant Type: <u>R-134</u> B. <input checked="" type="radio"/> Yes No	\$ <u>500</u>
L.	Radio: 1. AM/FM stereo with two speakers.	Make: <u>CONCEPT CAB</u> Model: <u>AM/FM</u>	\$ <u>162</u>
M.	Fire Extinguisher: 1. Extinguisher ABC, 5-lb. dry type rechargeable 2. Installed in cab. 3. Location labeled with 1" letters on outside of the cab.	Type: <u>ABC</u> <input checked="" type="radio"/> Yes No	\$ <u>500</u>
N.	Grab Handles: 1. One each side on exterior of cab for operator and passenger assist and one interior for passenger. 2. Grab handles shall provide adequate clearance to other objects to provide easy access and clearance to prevent pinch or other hazards.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>500</u>

3.8 Exterior:

Description of Equipment	Offered Equipment	Cost
A. Vendor shall provide with bid drawings with dimensions and photographs of the proposed cab exterior including mirrors for review. Failure to submit the requested information may make bid non-responsive.	Provide Materials: _____ _____ _____	\$ <u>500</u>
B. Cab Design: 1. Heavy-duty or severe-duty type with steel or aluminum body. 2. High visibility tilt forward design. 3. Front hinged doors. 4. Low floor cab over with steps mounted to body. 5. Maximum step height 15".	Body Rating: <u>ALUMINUM</u> Body Material: <u>ALUMINUM</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Step Height: <u>15</u> in	\$ <u>870</u>
C. Front Bumper: 1. The front bumper shall be straight and fit as close to the front of the cab as possible with adequate reinforcing to not allow the bumper to be driven back into the cab with minor impacts. 2. The bumper shall be chrome	Bumper Type: <u>STEEL</u> Reinforced on outside corners: Yes <input checked="" type="radio"/> No Bumper Finish: <u>CHROME</u>	\$ <u>500</u> \$ <u>500</u>

D.	<p>Engine Accessibility:</p> <ol style="list-style-type: none"> Engine fully accessible and serviceable, Cab shall tilt forward for access Tilt shall be by easily operated momentary switch and 12v DC electric pump located on right side of vehicle. 	<p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>510</u></p> <p>\$ <u>76</u></p>
E.	<p>Splash/Spray Suppression:</p> <ol style="list-style-type: none"> Spray suppression skirting, Fleet Engineering Inc. 4" brush filament P/N 997-70174, black polyethylene, (800.333.7890) Local distributor: Fleetpride 7725 Dahlia St Commerce City CO (303.288.1166) Skirting shall be installed on the front steer axle wheel housing to reduce road spray from being thrown up onto the truck's rearview mirrors. 	<p>Brand: <u>FLEET ENGINEERING</u> P/N: <u>997-70174</u></p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>550</u></p>
F.	<p>Paint:</p> <ol style="list-style-type: none"> Polyurethane paint equal to DuPont Imron 5000, "Bright White", applied following manufacture's procedures to include: Color top coat, 2 coats, applied to all non-stainless steel components following manufactures procedures. Removing all mill scale and slag. Variprime 615S self-etching primer or approved equal. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 	<p>Make: <u>Dupont</u> Type: <u>IMRON</u></p> <p>Color: _____</p>	<p>\$ <u>570</u></p>
G.	<p>Mirrors: "No Approved Equal"</p> <ol style="list-style-type: none"> Rear view mirrors Moto Mirror Model 7-5400 "Flat Back Traditional" 7" x 16" motor head, remote, heated, stainless steel left and right mounted on the cab. Convex 8" stainless steel mirrors mounted under primary mirrors. A right hand down mirror shall also be provided to cover front and side blind spot for shorter drivers under 5'-6" tall. Overall cab width including mirrors 112" maximum. 	<p>Overall mirror full extended width: <u>110</u> inches</p> <p>Overall mirror width with left side mirror folded in: <u>109</u> inches</p> <p>Make: <u>Moto</u> Model: _____</p>	<p>\$ <u>471</u></p> <p>\$ <u>274</u></p>

VEHICLE SUB TOTAL COST	\$ <u>174,033</u>
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CAB AND CHASSIS PRICE INCLUSIVE OF CNG COMPONENTRY:
BASE C&C \$136,228 + CNG ENGINE: INC + CNG SYSTEM:
\$37,805
\$174,033

4.0 Dealer Provided Optional Equipment

4.1 Electrical Systems:

- A. All non-factory wire connections (splices, connectors, etc.) shall be soldered and shrink tube insulated with adhesive/meltable sealant, thick wall polyolefin shrink tubing (3M EPS-300 or equal). No non-factory crimp connections allowed. No cutting or splicing into the factory wiring harnesses allowed.
- B. All accessories (strobe lights, operator controls, light bar, etc.) shall be wired through a 12-vDC constant-duty solenoid and controlled by bus bar mounted and permanently labeled auto-resetting circuit breakers. The solenoid shall be wired to the key switch.
- C. All dealer/vendor installed items, which require connecting into the vehicle's electrical system shall be done using an OEM factory modified wiring kit whenever possible.
- D. All non-factory wiring shall be encased in a totally sealed wiring harness (no plastic split loom) to prevent corrosion from magnesium chloride. The wiring harness shall be well secured to the truck with neoprene aircraft stainless steel tubing clamps. Rubber grommets shall be used at all areas where the wiring passes through areas that could damage the wiring. Unprotected wiring in any application is unacceptable.
- E. Electrical cables and wiring harnesses shall be neatly run and clamped with neoprene aircraft stainless steel tubing clamps. Clamp spacing shall not exceed 18-inches.
- F. Dielectric grease shall be applied to all electrical plug terminals and connections to reduce corrosion.

4.2 Fasteners:

- A. Grade 5 (SAE or USS) or 8.8 (metric) minimum, bolts, nuts, washers minimum. Vendor shall use Grade 8 or 10.9 for all critical areas or where good engineering practice suggests.
- B. All fasteners shall be zinc plated to prevent corrosion.
- C. Anti-Seize: all fasteners shall have Fel Pro C5A Anti-Seize compound applied before assembly to prevent corrosion, rusting, galling and aid in equipment servicing and repair.
- D. All fasteners shall be of appropriate length, diameter and strength (grade) for the application.
- E. Bolts and screws shall extend a minimum of 1-1/2 threads beyond the nut and maximum of 6 threads past the nut.
- F. Flat washers shall be used under bolt heads and nuts.
- G. Lock nuts (nylon insert, metal, slotted, castle nuts) shall be used lock-washers are not acceptable.

4.3 Hydraulic Systems:

- A. All hydraulic circuits shall be pressure relief protected.
- B. Hydraulic hoses shall be Parker ST 451 (tight bend radius) 2-wire braid hose meeting SAE-100R17 specifications where the hose meets operational criteria or approved equal.
- C. Hydraulic hoses shall have swivel fittings on both ends. Hose ends shall be located to facilitate easy component replacement.
- D. High-pressure hydraulic hose shall not be used for suction lines.
- E. Close/tight radius 90° elbow fittings shall not be used if short, medium or long drop steel stem 90° elbow fittings can be used. Over use of 90° elbows shall not be permitted.
- F. Hydraulic hoses and rigid lines shall be run parallel where possible; routing shall look neat and well planned.

- G. Rubber cushioned metal hydraulic clamps shall be used on all hydraulic ridged lines and hoses at proper intervals for supporting the line/hose 36" maximum distance. Clamps shall be securely mounted to the equipment.
- H. Hydraulic hoses and lines shall not be routed near exhaust, close to rotating components or over, around or through sharp edges. . Rubber grommets shall be used at all areas where the hydraulic lines through areas that could damage the lines.
- I. Galvanized fittings and thread tape shall not be used.
- J. Hydraulic hoses shall be covered with protective spiral nylon anti-chaffing wrap or sock type protective sleeves at all areas where chafing/rubbing could cause premature wear/failure.
- K. Hydraulic oil tanks shall magnetic drain plug, oil level and temperature gauge.
- L. Hydraulic hoses over 4' long shall be labeled on both ends for easy identification.
- M. Shut off valves ¼-turn on each side of filter.

4.5 All fabricated parts, brackets etc. shall have all sharp corners, edges etc. radiused or rounded for safety.

4.6 Welds:

- A. All welds shall meet AWS (American Welding Society) standards for the type weld, material joined and welding method.
- B. Weld joints shall have proper design and fit for the application.
- C. Welds joints shall have proper penetration and be smooth in appearance with no undercuts or overlaps at edge of weld.
- D. Weld joints shall be properly prepared with cut ends ground to remove all slag, create a smooth surface and beveled end.

4.7 Compactor Front Load Dumpster Body or (Approved Equal)

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	A current year, new front loader dumpster refuse body meeting ANSI Z245.1 standards of at least 28 cubic yard capacity, capable of loading 2 yd ³ to 10 yd ³ standard width side pocket dumpsters, compacting and transporting the refuse to a landfill or transfer station and dispensing the load efficiently from the body or approved equal, installed with the following equipment:	Make: Amrep_____ Model: AMHFLPO-21_____ Body Capacity: 38___ yds	\$ Incl. _____
B.	Vendor shall within 45 days of contract award submit drawings to the City showing the placement of all major components to include but not be limited to: front/rear bumpers, CNG fuel tanks, air filter, side discharge exhaust system with trap, air dryer, air tanks, fuel tank, battery box, daily fluid checks/fills, hopper, hopper cover, loading arms, hydraulic tank, hydraulic valves, steps/ladders, electrical junction box, access doors, tool holders etc.	X Yes No	

C.	<p>Body Capacities:</p> <ol style="list-style-type: none"> Capacity: <ol style="list-style-type: none"> Main Body: 28 yds³ excluding loading hopper. Hopper Capacity: 12 yds³ suitable for loading 2 yds³ to 10 yds³ containers. Hopper Sump with access doors on both left and right side for easy ground level clean out. 	<p>Body Capacity: 28 _____ yds³ Hopper Capacity: 12 _____ yds³ X Yes No Sump Volume: 12 _____ gallons Door Sizes: 22 ___ x 8.5 ___ Easy Access: XYes No</p>	
D.	<p>Truck and Body Measurements:</p> <ol style="list-style-type: none"> Body Height above the ground maximum height): <ol style="list-style-type: none"> Loading arms down: 12'-7" Loading arms raised: 13' - 10" Vehicle overall length maximum: <ol style="list-style-type: none"> Loading arms down: 37' - 1" Loading arms raised: 34'-2" Vehicle maximum overall width: 102". Width mirrors folded in: 102". Width mirrors at full extension: 112". 	<p>Maximum Body Height: 12'7" _____ Height; Loading Arms Down: 12'7" _____ Height; Loading Arms Raised: 13'8" _____ Length; Loading Arms Down: 440" _____ Length; Loading Arms Raised: 374" _____ Width: 102" _____ Mirrors folded in: 102" _____ inches Mirrors at full extension: 112" _____</p>	
E.	<p>Front Loader Body Performance:</p> <ol style="list-style-type: none"> Capable of efficiently and quickly loading front load side-pocket dumpsters from 2 yds³ to 10 yds³ Lift Arm cycle time: 14 - 20 seconds with full dumpster 8,000-lbs. Lift arm capacity: 8,000-lbs Fork cycle time: 4 seconds Packer cycle time: 20 - 26 seconds Capable of packing 1000-lbs. per cubic yard based on average school type (food waste, paper general trash) refuse Compaction Force: 105,000-lbs Tailgate cycle time: 18 seconds up and 18 seconds down Load ejection time: 45 seconds Hopper Cover open/close time: 11 seconds 	<p>X Yes No Cycle Time: 14-20 _____ seconds Capacity: 8000 _____ lbs Fork Cycle Time: 4 _____ seconds Packer Cycle Time: 20-26 _____ seconds X Yes No Force: 95,000 _____ lbs Cycle Time: 10-18 _____ seconds Cycle Time: 30-45 _____ seconds Cycle Time: 11 _____ seconds</p>	
F.	<p>Body Design: or Approved Equal</p> <ol style="list-style-type: none"> Rectangular shape mounted length wise on the truck chassis setup for front loading. All body corners/transitions shall be reinforced with bolsters/gussets/channels. All welds shall be continuous. Body standard profile with height of no more than 107" above chassis frame rail when lifting attachment is in the lowered position. 	<p>Body Type: <u>Rectangle with curved corners</u> X Yes No X Yes No Overall Height of Body @ highest point: <u>107"</u> Overall Body Height From Ground mounted on a 44" frame height: <u>12'7"</u></p>	<p>\$ Incl. _____ \$ Incl. _____</p>

<p>5. Hopper Material: a. Sidewalls, 3/16" abrasion resistant steel 150,000 psi yield. b. Floor, 1/4" abrasion resistant steel 150,000 psi yield with reinforced cross members spaced entire length of body. All welds shall be continuous.</p>	<p>Sidewalls: 1/4" thickness: Type: Hardox AR450 Tensile _____ yield: 150,000 psi Floor: 1/4" thickness: Type: Hardox AR450 Tensile _____ yield: 150,000 psi Cross Member Spacing: 2' Cross Member Size: 2X2" Shape: Tube Square</p>	<p>\$ Incl. _____</p>
<p>6. Main Body Material: a. Sidewalls, 8-gauge abrasion resistant steel 80,000 psi yield. b. Floor, 1/4" abrasion resistant steel 150,000 psi yield with reinforced cross members spaced entire length of body. All welds shall be continuous. c. Roof, 8-gauge high-strength steel 80,000 psi yield. All welds shall be continuous. d. Longitudinal Members, 7-gauge single piece formed box section high-tensile strength steel 80,000 psi yield. e. Cross Members, 7-gauge single piece formed high-tensile strength steel 80,000 psi yield. Spacing of cross members shall be: 1) Full width and capped. 2) High stress areas: Proper for application 3) Lower stress areas: Proper for application</p>	<p>Sidewalls: 3/16" thickness: Type: Hardox AR 450 Tensile _____ yield: 150,000 psi Floor: 3/16" thickness: Type: Hardox AR 450 Tensile _____ yield: 150,000 psi Cross Member Spacing: 5@2' & 3@1 Cross Member Size: 2X2" Shape: Sq. Tube Roof: 1/8" thickness: Type: Hardox AR 450 Tensile _____ yield: 150,000 psi tensile Long Member: 3/16" thickness Size: 6X2" Tensile _____ yield 58,000 psi Shape: Rectangular Tubing Cross Member: 3/16" thickness: Size: 2X2" Tensile _____ yield: 58,000 psi X Yes No Spacing: 3@1 Spacing: 5@2 X Yes No</p>	<p>\$ Incl. _____ \$ Incl. _____ \$ Incl. _____ \$ Incl. _____ \$ Incl. _____ \$ Incl. _____</p>
<p>7. Body shall be designed/constructed to withstand repeated maximum packing pressures without distortion. The vertical channel bracing must interconnect with roof channels to form a wrap-around channel design. All welds shall be continuous. 8. Access door, a. A left access door shall be 27" wide x 29" high with 3" radius rounded corners on left front side of body shall provide access to hopper area. b. Open non-slip step tread steps shall be providing access to the hopper. c. Grab handles shall have durable deep knurled non-slip grip surface and powder epoxy painted "Safety Yellow". d. A interlock shall disable the system when the door is</p>	<p>Door Size: 29X35" Corner Radius: 90 Degree Door Location: Front Street Side Interlock: X Yes No X Yes No X Yes No X Yes No</p>	<p>\$ Incl. _____</p>

	<p>unlatched/opened</p> <p>9. Front body closure made of expanded metal to prevent loose trash and debris from entering the front area of the front loader body, engine/transmission areas or the engine exhaust system area. The body closure shall be as large as possible and be easy and fast to remove for maintenance.</p>	<p>Material Type: <u>12 Ga Mild Steel and Mesh</u></p> <p>X Yes No</p>	<p>\$ Incl. _____</p>
<p>G.</p>	<p>Tailgate:</p> <ol style="list-style-type: none"> 1. Tail gate curved bubble type with capacity: 2 to 4-yds³ 2. Tailgate: <ol style="list-style-type: none"> a. Material: 8-gauge high-strength steel 80,000 psi yield with boxed rib reinforcement to prevent deformation from the packing forces. b. All welds shall be continuous. c. Tailgate shall be strong enough not to deform or crack during the useful life. d. Tailgate shall be reinforced in lower area to prevent deformation from trash 3. Tailgate shall lift above the horizontal position sufficiently to allow efficient and fast unloading of trash without the trash hanging up on the tailgate. 4. Tailgate top heavy-duty hinged with 2" dia. minimum hinge pins with ground level grease lubrication. Tailgate hinges shall be reinforced to prevent the hinges from spreading or tweaking. 5. Tailgate liquid seal, 1-piece rubber seal with tensile strength of 1,500-psi. The seal shall extend across the bottom and up both sides of the tailgate to prevent leakage. 6. Tailgate trough/catch basin shall be provided to catch liquid leakage. <ol style="list-style-type: none"> a. The trough shall self empty when the tailgate is raised for load ejection. b. A 2" NPT dia bung shall be provided for draining liquids without raising the tailgate. 7. Tailgate props (one per side) to hold tailgate in open position. 8. Operation, raise and lowered using two hydraulic double-acting cylinders, minimum. 9. Hydraulic operated locks at two points minimum shall secure tailgate door in locked position. Locks shall automatically actuate when rear door lift cylinders are actuated. 	<p>Capacity: 3 _____ yds³</p> <p>Material Grade/Type: 1/8Strength: <u>Hardox AR450</u></p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No Size:1.5" Grade 8</p> <p><u>X</u> Yes No</p> <p>X Yes No</p> <p>X Yes No Quantity:2 _____</p> <p>X Yes No Lock Point Number: 7 _____</p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p>

	<p>10. A tailgate cab light and audible alarm shall activate when the tailgate is not fully closed and latched.</p> <p>11. Underride protection, shall be bolt on type, DOT approved.</p> <p>12. Rear lights shall be recessed into a boxed light structure suitable for flush rubber mount LED lights. A center high mounted LED brake light shall also be provided.</p> <p>13. Whelen Model L360 Super LED 360° beacon with branch guard L360BGB, (1) required shall be mounted on top of tailgate.</p> <p>14. Tailgate mounted safety lights sides shall be</p> <p>a. Whelen IONSMC -Wide Angle LED color (Amber) safety lights (4 required).</p> <p>b. The lights shall be located 1/3rd and 2/3rd up the tailgate just inside the outer edge of the tailgate on each side</p>	<p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>Make: Whelen _____ Model: IONSMC LED _____</p> <p>Location: <u>As requested on Tailgate</u></p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>
<p>H.</p>	<p>Packing Mechanism:</p> <p>1. Packer plate shall be actuated by horizontally opposed and crossed telescopic hydraulic cylinders.</p> <p>2. Cylinders shall have multiple stages, provide packing force as follows:</p> <p>1st stage: Compaction and Ejection Provide packing force lbs.</p> <p>2nd stage: Ejection Only Provide ejection force lbs.</p> <p>3rd stage: Ejection Only Provide ejection force lbs.</p> <p>3. Packing mechanism shall be designed so that no contact to the tailgate can occur during loading or ejecting of refuse.</p> <p>4. The compaction panel:</p> <p>a. Face plate 1/4" abrasion resistant steel 150,000 psi yield with reinforced boxed cross members fully across the compaction plate to minimize panel distortion.</p> <p>b. All welds shall be continuous.</p> <p>c. The panel shall be reinforced with formed boxed cross members so no distortion occurs during operation.</p> <p>5. Packer plate to be equipped with wear resistant pads full length of slide shoes. Shoes to ride in formed 4" heavy-duty structural channels located raised in the lower corner of the wall and body floor with corresponding replaceable wear pads traversing entire length of body</p> <p>6. Dumpster Lift Interlock: to prevent materials being dumped behind packer plate when packer plate is not in the home position.</p>	<p>X Yes No</p> <p>X Yes No</p> <p>Force: 95,000 ___psi-lb force @2000psi</p> <p>Force: 78,500 ___psi-lb force @2000 ___psi</p> <p>Force: 38,465 ___psi-lb force @2000 ___psi</p> <p>X Yes No</p> <p>Panel: 1/4" _____ thickness: Type: <u>Hardox AR450</u></p> <p>Tensile _____ yield: 150,000 ___psi</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p>

	<p>7. Lower C-channel shall be raised above the floor to prevent dirt/debris easily getting into the channel.</p> <p>8. Lower C-channel lip (1 piece not welded to extend width) shall extend to same width as the shoe width to prevent a wear lip from forming on the lower side of the shoe and wearing a grove into body floor.</p> <p>9. Shoe assemblies shall have debris deflector installed on front and rear sides to direct debris out from the C-channel/shoe interface.</p> <p>10. The pack panel between the shoes shall have staggered shark's teeth to help keep dirt/clay from packing in the C-channel and jamming the pack panel. The location and size of the shark's teeth shall be mutual agreed upon.</p>	<p>Yes X No</p> <p>Yes **No Amrep design will not allow Wear strips to wear a grove in body floor</p> <p>X Yes No</p> <p>X Yes No</p>	<p>Exception</p> <p>\$ Inc. _____</p> <p>\$ Incl. _____</p>
I.	<p>Wind Screen and Hopper Cover:</p> <p>1. Hopper opening shall be protected by a three sided windscreen and shall also have a retractable air operated hopper cover.</p> <p>2. The cover control shall be controlled by a 2-position rocker switch (lighted "open") located in an easy to access and convenient location.</p> <p>3. The cover and lift arms shall be interlocked to prevent dumping into a covered hopper or operating cover with truck in motion.</p> <p>4. The cover circuit shall allow the cover to be opened when the engine is "off" and PTO is "off" for winter operation to prevent snow/ice build up on the cover.</p>	<p>Wind Screen Design: <u>Sheet Metal Wind Wings</u></p> <hr/> <p>X Yes No</p> <p>X Yes No</p> <p>Yes X No</p>	<p>\$ incl. _____</p> <p>\$Exception__</p>
J.	<p>Cab Protector and Access Ladder:</p> <p>1. Cab protector 1/8" steel full length and full width load bearing.</p> <p>2. Cab protector shall be trash shedding design (smooth no lips etc) to prevent trash build up and to fully protect the cab body.</p> <p>3. The cab protector shall not obstruct the opening/tilting of the body cab. The cab protector shall be easy and fast to move out-of-the-way if required.</p> <p>4. Cab protector shall be notched (if required) to provide 6" minimum clearance to the exhaust pipe.</p> <p>5. A cab protector access, ladder with open non-slip step treads extending up from the front bumper to the cab protector shall be provided.</p> <p>6. The ladder shall minimally obstruct driver's vision thru the windshield.</p>	<p>Material Type/Thickness: <u>12 Gauge Mild Steel</u> Y</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$ Incl. _____</p>

<p>K.</p>	<p>Container Loading System:</p> <ol style="list-style-type: none"> 1. Orientation, front side of body. 2. Performance: <ol style="list-style-type: none"> a. Cycle time 13 - 20 seconds, from pick-up through raise, dump, lower, and release. b. Maximum height of dumpster/arm at highest point of tip cycle shall not exceed 19'-4" for an 8 yd³ container. 3. Capacity, 8,000-lbs constant lift. 4. Loader shall pick up, dump, and return to ground 2 yds³ to 10 yds³ side pocket front load dumpster containers. Operation shall be performed with out modification to equipment or without operator leaving the cab. 5. Dumpster lift arms: <ol style="list-style-type: none"> a. The dumpster lift arms shall be actuated by two hydraulic cylinders and shall raise the arms/dumpsters to dump position and return to disengage position. b. The lift arms shall be boxed rigid construction horseshoe shaped (open bottom) design. c. All welds shall be continuous. 6. The dumpster lift arms shall not ever obstruct/interfere with the truck cab doors, rear view mirrors or other truck equipment. 7. Container fork arms: <ol style="list-style-type: none"> a. Fork arms 1 ½" x 51" high tensile strength steel 50,000 psi yield minimum. b. The fork arms shall store vertically and be actuated by two hydraulic cylinders and shall lower for dumpster loading and retract vertically for transportation c. The fork arm design shall positively hold the dumpster container through all phases of the loading, raise-to-dump, dump and return-to-ground cycle. 	<p>Location: <u>Fixed Front Side Pocket Forks</u></p> <p>Cycle time: 18-20 _____ seconds</p> <p><u>19</u> ft <u>4</u> in _____ Maximum Height</p> <p>Lift Capacity: 8000 _____ lbs. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Construction Type: <u>Reinforced Rectangular Tube</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Fork Size: <u>1.5" x 59"</u> Steel Type: <u>50,000 psi Tensile Yield</u> How Stowed: <u>Arms Down-Vertical</u> <u>Arms Stowed Up Horizontal</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No How: <u>When forks tilt back container will rest on rubber stops</u></p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>
<p>L.</p>	<p>Service Hoist System:</p> <ol style="list-style-type: none"> 1. The service hoist lift system shall provide excellent access to truck components located under the trash body 2. The service hoist system shall lift the front of the body up above the truck frame rail approximately 36" minimum for access 3. The hoist system shall be powered by a 12vDC hydraulic pump with sufficient power to raise a fully loaded trash body. 4. The system shall use hydraulic oil from the main hydraulic oil tank. 	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Lift Height @ front: 36 _____ inches</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p>

	<p>5. A trash body anti-lowering safety pins or legs shall be provided:</p> <ol style="list-style-type: none"> The pin/legs shall lock the trash body preventing lowering of the body. The pin/legs shall be sufficient to support 3X's the fully loaded weight of the body incase truck maintenance is required and the trash load cannot be ejected Pin storage in a sleeve, that the pin cannot fall/vibrate etc. out of shall be provided. The pin shall be attached to the hoist/trash body/chassis with chain/cable to prevent loss. Safety legs shall rest in a saddle to prevent bouncing around. 	<p>X Yes No</p> <p>X Yes No Safety Factor: <u>Easily supports fully loaded truck</u></p>	
<p>M.</p>	<p>Hydraulic system: Operate at Standard Low Idle.</p> <ol style="list-style-type: none"> Hydraulic pump "hot shift" driven thru a Chelsea 890 series direct drive off the transmission. The pumps shall have an automatic pump oil bypass system in normal bypass mode when the hydraulic system is not energized. Hydraulic system shall be Parker Hannifin Corporation designed and certified and use as many as possible Parker components to assure compatibility of the system and 3 year Parker warranty for using a complete Parker system. Hydraulic system shall operate all hydraulic functions at engine low idle speed (750 rpm) and shall not require shifting transmission out of "Drive" gear or applying "Parking" brake. System hydraulic pressure and flow shall not increase above low idle speed, which could encourage an operator to increase engine rpm to try to increase hydraulic performance. Operating pressure, 2,500 psig maximum. Hydraulic valves shall have LED lights on valve coils to aid in troubleshooting the system. The hydraulic valve bank and manual system over-ride controls shall be located in a safe area for mechanics lowering dumpsters that are stuck in the air. Location shall be mutual agreed upon. The hydraulic pump suction line shall be steel tubing with hydraulic hose sections at both the pump and tank end for vibration isolation. <ol style="list-style-type: none"> The suction line shall be routed for maximum ground clearance and damage protection. Hose swivel ends shall be used on all connections. 	<p>PTO Make: Chelsea _____ Model: 890 Transmission Direct Drive: X Yes No Oil Bypass: X Yes No</p> <p>X Yes No Parker/Oasis/Dennison Pump with local warranty Through Local Amrep dealer</p> <p>Pump Operating Speed: 850 _____ rpm Pump Output: 60 _____ gpm @ 850 _____ rpm</p> <p>Operating Pressure: 1800-2100 _____ psi Yes X No</p> <p>X Yes No</p> <p>Suction line Material: <u>2" Parker Hydraulic Hose</u></p> <p><u>X</u> Yes No X Yes No</p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Exception _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>

<p>8. Hydraulic cylinders shall:</p> <ol style="list-style-type: none"> Properly sized to efficiently and continuously perform their function without any cylinder degradation. Cylinders shall have industrial Nitrated piston rods for maximum durability. Main ram cylinder at the rod end shall have a 4" wide mounting. Fork container arm cylinders shall have guards/shields installed over the hoses to prevent damage from trash sticking out of the dumpsters and catching the hoses. The hoses shall also use 90° steel elbow type fittings to reduce damage from trash. Cylinders shall be fast and easy to remove and replace. <p>9. Hydraulic pump performance, sufficient pressure and volume at low idle rpm to produce one cycle of the compactor blade at 75% load in less than 12-seconds.</p> <p>10. Hydraulic Reservoir:</p> <ol style="list-style-type: none"> The hydraulic reservoir shall be: <ol style="list-style-type: none"> Located on the outside of the frame rails in front of the front dual tires in best location and be pressurized to 5 psig to prevent pump cavitation. Located with the bottom of the hydraulic tank no lower than the top of the truck frame rails to provide an adequate head pressure to the pump inlet to prevent pump cavitation. Capacity 50-gallons minimum Oil level and temperature gauge, Shut-off valves Magnetic drain plug. Bung for Future Hydraulic Oil Pre-heater System <ol style="list-style-type: none"> Possible future installation bung for an Arctic Fox Hydra Liner H-4000 hydraulic fluid warmer. Tank bung shall be schedule 80 2" NPT female thread coupling. Bung shall be welded to 0.250" thick 8" dia steel tank reinforcing ring. The bottom edge of the tread section of the bung and hydraulic oil pre-heater shall be 1 1/2" off the bottom of the tank. 	<p>X Yes No</p> <p>Nitrated Piston Rod: Yes X No</p> <p>Yes X No Yes X No</p> <p>X Yes No Time: 12-25 _____ seconds</p> <p>Reservoir Location: <u>Best Available</u></p> <p>X Yes No Pressurize to: <u>0</u> psig</p> <p>Yes X No Height above the frame rail: <u>0</u> inches</p> <p>Hydraulic Reservoir Size: <u>60</u> gallons</p> <p>X Yes No X Yes No X Yes No X Yes No</p> <p>X Yes No</p>	<p>\$Exception _____</p> <p>\$ _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Exception _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p>
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<p>5) The baffles shall be suitable to accept a 24" long heater element and provide a 1" clearance all the way around the element.</p> <p>11. Hydraulic oil shall be ISO Grade 32 multi-viscosity with a -40°F pour point.</p> <p>12. Hydraulic Filtration,</p> <p>a. Pressure line Parker model: WPF 7,000 psig rated with 7-micron absolute tandem type (2 required, 1 per pump)</p> <p>b. Return line replaceable Parker 7-micron absolute with bypass mode indicator light, easy to access for replacement.</p> <p>c. Suction strainer 100-micron.</p> <p>13. Hydraulic system shall maintain oil temperature at no more than 90°F above ambient temperature.</p> <p>14. Hydraulic system test ports shall be provided for each circuit. Test port connections shall be compatible with the Parker Hannifin PD type connector.</p> <p>15. All hydraulic hoses and tubing shall be neatly routed, shielded and secured/supported to prevent chaffing under truck.</p> <p>16. All hydraulic hoses shall be Parker series ST 451 extra-high-abrasion resistant hoses to reduce hose failure from hose cover damage. Hydraulic hoses shall have swivel ends on each end.</p> <p>17. A hydraulic oil recirculation filter system connection system shall be provided with the following:</p> <p>a. The suction and return tubes shall be 1" ID and be installed on the tank top side on each tank end (cross flow) approximately 4" inside the end caps and extending to within 1/4" off the tank bottom at the lowest point.</p> <p>b. The hydraulic connections shall be 1" Parker FF male (flat face) fittings and orientated so they face to the inside (each other).</p> <p>c. The suction and return lines shall be 1" ID with a 60° cut on the bottom to assure adequate hydraulic oil flow.</p> <p>d. The suction and return lines shall be interchangeable in use so it does not matter which hydraulic tank fitting the filter system suction and return lines are connected to.</p>	<p>Oil Type:ISO Grade 32___Brand:Chevron_____</p> <p>Filter Size: 5_____microns Make:Parker_____Model:WPF4_____</p> <p>Filter Size:5_____microns Make:Parker_____Model: KLS/KLT_____</p> <p>X Yes No</p> <p>Make:Parker_____Model:6602-4-4_____</p> <p>X Yes No</p> <p>Make :Parker_____Type: 451 "TC"_____</p> <p>Tubing Size: 1"_____inches Distance of Tank Bottom: 1/4"_____inches</p> <p>Make :Parker_____Type: Flat Face_____</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$Incl_____</p> <p>\$Incl_____</p> <p>\$Incl_____</p> <p>\$Incl._____</p> <p>\$Incl._____</p> <p>\$incl._____</p>
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N.	<p>Electrical:</p> <ol style="list-style-type: none"> All remote electrical inter face connections shall be terminated on stud-type terminal strips or with plug type connectors in a waterproof junction box. Connectors/wires shall be permanently and individually labeled. Electrical schematics shall be affixed inside the cover of the junction box. Dielectric grease shall be applied to all terminals and connectors to prevent corrosion if connector is not waterproof. 	<p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p>
O.	<p>Control System:</p> <ol style="list-style-type: none"> Control system shall be the manufacturer's standard controls. Preferred control system; air over hydraulic. Console control shall be mounted into an easy to see and access location with out turning the head more than 30° to side. Console controls to include: <ol style="list-style-type: none"> Transmission shifter control easy to access due to required number of forward/reverse operations required for efficiently loading front load type dumpsters. Tailgate open/close. Ejector blade extend/retract. Master power. Work lights. Strobe lights. Indicator lights: Retract "amber", Compact "green", Tailgate Open "orange", Overspeed "blue" and Work Brake Hold "red". Cab Mounted Controls: <ol style="list-style-type: none"> Cab mounted controls on left side shall all be in ergonomic and natural, easy to reach locations. Controls shall be designed to comfortably and efficiently accommodate an operator making 600 dumping operations per day, 6 days per week. Controls shall have a life cycle of 5,000,000 cycles minimum. Controls shall utilize light touch and short throw devices. Controls shall utilize a "Deadman" feature that stops all body operations if the "Deadman" is released. Control placement shall accommodate operators from 5'-2" to 6'-4" tall and from slender to large physics. Rocker switches shall be back lighted type for easy identification at night. 	<p>Control System Type: <u>Air over Hydraulic Arm and Fork</u></p> <p>X Yes No</p> <p>X Yes No</p> <p>Location: <u>RH Side of Driver on Doghouse</u></p> <p>Obstructed: Yes X No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>Yes X No</p> <p>X Yes No</p> <p>X Yes No</p> <p>Yes X No</p> <p>X Yes No</p> <p>Yes X No</p>	<p>\$Incl. _____</p> <p>Exception</p> <p>Exception</p> <p>Exception</p>

	<p>5. Controls shall be permanently labeled and lighted for easy night viewing.</p> <p>6. Vendor shall provide:</p> <p>a. The vendor shall provide within 30 days of the Contract award preliminary drawings of the control layout and how the controls are positioned inside the truck cab.</p>	<p>X Yes No</p> <p>X Yes No</p>	
P.	<p>Branch Protection:</p> <p>1. The body shall have tree branch deflector plates to provide protection for:</p> <p>a. Grabber arm hoses.</p> <p>b. Rear tailgate hydraulic hoses/lines, wiring and for the grease lines.</p> <p>c. Lights and switches.</p> <p>d. Side sign boards both front and back sides.</p> <p>e. All other components that is vulnerable to damage from tree branches.</p>	<p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p>
Q.	<p>Vehicle Rear Lights: (No Approved Equals)</p> <p>1. All lights shall be Truck-Lite "Lifetime Warranty" 12vDC, LED type, flush mount, sealed lexan body, grommet insulated with Fit' N Forget multi-pin plugs where possible.</p> <p>2. Integral Stop/Turn/Tail/ lights mounted in the rear corner post of the body model Super 44 P/N 44302R or model 60 P/N 60250R.</p> <p>3. Third Brake Light use the same used light used for Stop/Turn/Tail light and disable the Turn and Tail light sections.</p> <p>4. Back up lights Truck-Lite LED, flush mount, sealed lexan body, grommet insulated, multi-pin units model 44 P/N 44206C.</p> <p>5. Marker lights Truck-Lite LED 3 per side model 10 P/N 10250R or 10250Y or model 30 P/N 30250R or 30250Y.</p> <p>6. Rear ID bar Truck-Lite LED model 35 P/N 35741R or 35740R.</p> <p>7. License plate light, Truck-Lite model 15 P/N 15040</p> <p>8. Wiring shall be sealed Fit' N Forget modular plug-in type where possible.</p> <p>9. Dielectric grease shall be applied to all plug connections and terminals to prevent corrosion.</p>	<p>Make: Truck Lite _____</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Incl. _____</p>

R.	<p>Grease and Lubrication of Body and Components:</p> <ol style="list-style-type: none"> 1. The trash body and all components requiring regular lubrication (1 time per 2 week period) shall use a central easy to access grease manifold for lubricating all the required lubrication points to include: <ol style="list-style-type: none"> a. Arm pivot points b. Tailgate hinge points c. Compaction/push-out system d. Cylinder pins e. Rotational bushings, bearings, shafts etc. f. Other areas that require lubrication 2. The grease system shall use steel braided hoses with heavy-duty swivel ends or approved equal lines between the manifold and grease fitting. The system shall assure that all fittings receive the proper amount of lubrication for maximum longevity. 3. The damage susceptible grease zerk fittings shall be protected from damage with a guard. 	<p>X Yes No</p> <p>X Yes No X Yes No X Yes No X Yes No X Yes No X Yes No X Yes No</p> <p>Yes X No</p>	<p>\$Incl. _____</p> <p>\$Incl. _____</p> <p>\$Exception__</p>
S.	<p>Paint Main Body:</p> <ol style="list-style-type: none"> 1. Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufactures procedures to include: 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted. 	<p>Make: Sikens _____ Type: Polyurethane _____ Color: <u>Bright White to Match Cab</u></p> <p>X Yes No X Yes No X Yes No X Yes No X Yes No</p>	<p>\$ incl. _____</p>
T.	<p>Special Tailgate Paint:</p> <ol style="list-style-type: none"> 1. Polyurethane paint equal to DuPont Imron 5000, Color: <ol style="list-style-type: none"> a. Top 1/2 of tailgate "Bright White", b. Lower 1/2 of tailgate "Safety Yellow" with: <ol style="list-style-type: none"> 1) Alternating "Safety Yellow" paint 8" wide and 2" wide "White" tape. 2) Tape 2" wide 3M Scotchlite "White" DOT reflective conspicuity tape applied from center out in a "Chevron Pattern" with a top horizontal tape strip separating the tailgate's White and Safety Yellow paint. 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 	<p>Color: <u>Bright White</u> _____ Color: <u>Safety Yellow</u> _____</p> <p>X Yes No X Yes No</p>	<p>\$Incl. _____</p> <p>\$Incl. _____</p>

5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal.	X Yes No	
6. Paint to be applied with all body members painted.	X Yes No	

Refuse Body Equipment SUB TOTAL COST	\$96,658.00
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\$98,107

4.8 Sundries Equipment

	Description of Equipment	Offered Equipment	Cost
A.	Driver Height Warning Sign 1. Installed on truck dash providing the: a. Travel height of the vehicle. b. Maximum height of a dumpster during loading cycle 2. Sign shall be in 1" "white" block letters.	X Yes No X Yes No X Yes No	\$150.00
B.	Work Lights: 1. Two (2) front facing loading area, 2. Ecco E92006, 9 LED work lights with lighted on dash mounted control switch. 3. The lights shall provide dumpster/arm lighting for night loading.	Make: Ecco _____ Model: E92006 _____	\$420.00
C.	Tool Holders: 1. Three shovel/broom holders mounted on curb side of body. 2. Location to be mutually agreed upon at installation.	X Yes No X Yes No	\$320.00

Sundries Equipment SUB TOTAL COST	\$ 890.00
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4.9 Complete Vehicle Sub Total Cost:

COMPLETE VEHICLE SUB TOTAL COST Vehicle+ Refuse Body+ Sundries	271581
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4.10 Optional Equipment

Do not include Optional Equipment in the total price of the vehicle; however an equipment price must be provided. The City will determine if the equipment is to be purchased.

	Description of Equipment	Offered Equipment	Cost
A.	Remote High-Quality Color Safety 5 Camera System: 1. The front loader trash truck will be used in and around schools so excellent visibility in all directions is extremely important, front, rear and sides 2. Cameras (5 required) color, ECCO Gemineye K7000Q system with camera view selection on the TV monitor face (No Approved Equal: a. Rear of vehicle mounted camera wired into vehicle reverse circuit to automatically turn ON when vehicle is shifted into reverse or ON when vehicle ignition is on or in a forward gear: b. Left and right rear sides of vehicle (2 required). The cameras shall be mounted to provide a periphery side view of the area and be wired into the vehicle's reverse circuit to provide additional side and rear area views. The cameras shall automatically turn ON when vehicle is shifted into reverse or ON when vehicle ignition is on or in a forward gear: c. Right side camera (cab mounted) to serve as an auxiliary right rear view mirror function (blind spot view) to augment the right rear view mirrors. 1) The camera shall be normally ON viewing the right side of the vehicle and blind spot. 2) It shall automatically switch to rear of vehicle view when the transmission reverse gear function is activated. 3) An over-ride to keep the right side camera on shall be provided for special situation use. 4) Camera shall be as small as possible and have a guard that will protect the camera and wiring from tree branch damage and road spray/splash. 5) The exact location of the camera and approval of the camera protection shall be mutually agreed upon at installation	<p style="text-align: right;">Total Cost of Camera System: \$2,150.00</p> Make: Ecco Gemineye___ Model:K7000Q_____ \$Incl._____	\$2,150.00 \$Incl._____ \$325.00 Included in \$2,150 <p style="text-align: center;">COMPLETE FOUR CAMERA SYSTEM: \$2,150</p> \$Exception_____
		Yes X No Camera Price Required Make: Ecco _____ Model:K7000B _____ Quantity: <u>1</u>	
		X Yes No	
		Yes X No	
		X Yes No	
		X Yes No	
		X Yes No	
		X Yes No	

<p>d. Hopper camera to provide viewing of thrash in the hopper and packing operation. Hopper camera shall be fully protected from physical damage and dirt build up on the lens. The camera shall be positioned for easy lens cleaning. The hopper camera shall automatically switch ON when the barrel pick up arm is activated for pick up operations</p>	<p>X Yes No</p>	<p>\$Incl. _____</p>
<p>3. Camera color ECCO model C2001 with automatic shutter (5) required: a. Camera shall be in water proof cast aluminum housing. Housing shall be able to be pressure washed when washing vehicle. b. Camera shall have built in safety audio system that will pick up and broad cast normal conversation to monitor. c. Camera shall be automatically heated for cold weather operation. d. Resolution 380 TV lines horizontal. e. Signal to noise ratio 44dB minimum.</p>	<p>Make: Ecco _____ Model: C2001 _____ X Yes No X Yes No X Yes No Resolution: 380 TV _____ lines</p>	<p>\$Incl. _____</p>
<p>4. Monitor LCD, 7" flat screen ECCO model M7000Q with: a. Monitor shall be in a very easy to see location on the dash next to the "A" pillar that requires as little as possible head movement and also with a little as possible front windshield obstruction. The monitor location shall be mutually agreed upon. b. Camera view selection switches on the TV monitor and trigger wires via power cable. c. Automatic day/night dimmer sensor d. Resolution 291,000 pixels or better. e. Picture control to include brightness, contrast and image. f. Speaker system to broadcast sound from camera. g. Picture shall be crisp and clear at all times. h. Anti-glare sun shield and hood model A7000SS. i. Swivel mounting bracket. j. Automatic dimmer sensor to adjust for day and night viewing. k. Monitor capable of accommodating 2 cameras.</p>	<p>Make: Ecco _____ Model: M7000Q _____ X Yes No X Yes No Pixels: 291,000 X Yes No X Yes No X Yes No</p>	<p>\$Incl. _____</p>
<p>5. All wiring shall be totally sealed with sealed locking connections to prevent corrosion.</p>	<p>Make: Ecco _____ Model: A7000SS _____ X Yes No X Yes No X Yes No X Yes No</p>	<p>\$Incl. _____</p>
<p>6. All wiring shall be routed to prevent damage to the wiring.</p>	<p>X Yes No</p>	<p>\$Incl. _____</p>
<p>7. Warranty 2 years with replacement of failed components with new</p>	<p>Warranty: 2 _____ years</p>	<p>\$Incl. _____</p>

	components shipped UPS "Next Day" upon notification of problem.	Yes	No	
B.	Sign Boards, Two body mounted Roadway Displays Inc. (909.587.0207) mobile display systems shall be provided to include: 1. Frame model SS315955 95-1/2" long x 31-1/2" high x 2-1/4" frame width with .025" aluminum backing. 2. Frame material, 6463-T6 aluminum extrusions with satin anodize. 3. Sign panel size 93-3/16" x 29-3/16" x .060" high impact styrene. View size 91" x 27". 4. Sign frame shall be securely mounted to body yet be easy to remove and replace. The flat sign face shall have a steel sub frame to attach it to the body and branch deflectors shall fill the void between the sub frame and the body.	Make: Roadway <input checked="" type="checkbox"/> Yes	Model: SS315955 <input type="checkbox"/> No	\$600.00 SIGN BOARDS: \$600
C.	Spare Tire and Wheel: 1. Tire and wheel assembly: 1 per vehicle. 2. Tire: Michelin XZU-S, Steer Tire 10,000-lb rated @ 130 psi 3. Wheel: Size 22.5" x 9", disc, 10-hole, hub piloted type, single nut, meeting ISO Standard 4107. "White" powder epoxy coated finish.	Make: _____ Make: _____	Model: _____ Model: _____	\$ _____
D.	Control System Up-Grade: 1. Control system shall be electric over hydraulic. 2. Console control shall be mounted into an easy to see and access location with out turning the head more than 30° to side. Console controls to include: a. Transmission shifter control. b. Tailgate open/close. c. Pack panel extend/retract. d. Master power. e. Work lights. f. Strobe lights. g. Indicator lights: Retract "amber", Compact "green", Tailgate Open "orange", Overspeed "blue" and Work Brake Hold "red". 3. Cab Mounted Controls: a. Cab mounted controls on left side shall all be in ergonomic and natural, easy to reach locations. b. Controls shall be designed to comfortably and efficiently accommodate an operator making 600 dumping operations per day, 6 days per week. c. Controls shall have a life cycle of 5,000,000 cycles minimum.	Provide Info: _____		\$Exception _____

<ul style="list-style-type: none">d. Controls shall utilize light touch and short throw devices with "Deadman" switch to stop all loading movement if the "Deadman" is released..e. Controls shall be multi-positional to accommodate a variety of operators. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. Control placement shall accommodate operators from 5'-2" to 6'-4" tall and from slender to large physics.f. The controls shall be easy and quick for the operator to position without the use of tools for comfort and efficiency.g. Studies suggest that long periods of repetitive motion coupled with an improper work environment and incorrect operator position may be linked to certain types of physical discomfort or injury. These include Carpal Tunnel Syndrome (CTS), Cumulative Stress Disorder (CSD), Tendonitis and Tenosynovitis.h. To help avoid the conditions listed in Section 3.9.E.3.g the City is providing information sites where ergonomic information is available to help in the proper layout of operator controls.<ul style="list-style-type: none">1) Ergonomist Certifying Organizations include:<ul style="list-style-type: none">a) Oxford Research Institute: 301-865-4506b) Board of Certified Professional Ergonomists: 360-671-7601 <p>4. Main control panel shall be solid state design with LED function indicators. Rocker switches shall be back lighted type for easy identification at night.</p> <p>5. Controls shall be permanently labeled and lighted for easy night viewing.</p> <p>6. Vendor shall provide:<ul style="list-style-type: none">a. The vendor shall provide within 14 days of the Contract award the name and credentials of the ergonomic consultant.b. The City preliminary drawings of the control layout and how the controls are positioned inside the truck cab within 45 days of the contract award.c. Within 120 days of the Contract award the vendor shall provide a preliminary mock up set of controls for review by the City.</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	
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E.	<p>Inspection Trip:</p> <ol style="list-style-type: none"> 1. The City and County of Denver reserves the right to inspect at the body fabricating plant the first (1st) article prior to paint and delivery. 2. Where the fabricating plant is located further than 200 road-miles from the City and County of Denver, the bidder shall include in the bid price all travel expenses to the fabrication plant for the inspection. 3. The City may select to send from 2 representatives to inspect the 1st article. The provided costs shall be based on one (1) person per day and the City will determine how many representatives the inspection will require and how many days the inspection will require. 4. Inspection Trip Costs to include: <ol style="list-style-type: none"> a. Air fare per person: b. Surface transportation costs: c. Lodging per person per day: d. Meals per person per day: 5. Total cost per person for 1st article inspection trip: 	<p>Provide information:</p> <p>Distance to fabrication plant: 1000 _____ miles Plant Location: <u>Ontario, California</u></p> <p>Air Fare: \$ <u>350.00</u> _____, Airline: <u>United</u> _____ \$350.00 _____</p> <p>Surface Transportation: \$ <u>100</u> _____, Mode: <u>Rental</u> _____ \$125.00 _____</p> <p>Lodging / day: \$ <u>150.00</u> _____, _____ \$150.00 _____</p> <p>Hotel: _____</p> <p>Meals / day: \$ <u>75.00</u> _____ \$75.00 _____</p> <p style="text-align: center;">INSPECTION TRIP: \$700 per Person</p> <p style="text-align: right;">\$925.00 _____</p>
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5.1 Manuals/Equipment

Item	Description of Equipment	Offered Equipment	Cost
Training Video	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment. 1. Cab and chassis. 2. Equipment and Body.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	\$ _____ \$Exception _____
Operators Manual Paper	One book per vehicle/equipment with "safe equipment operation" section for each component. 1. Cab and Chassis. 2. Equipment and Body.		\$ <u>Incl.</u> _____ \$incl. _____

<p>Service/Repair/ Maintenance Manual Paper</p>	<p>Two complete sets per Contract (not per vehicle); binder required, A. Manuals shall be provided for: A. Cab and chassis B. Equipment and body B. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. C. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.</p>	<p><input checked="" type="radio"/> Yes No Yes No Yes No Yes No</p> <p style="text-align: center;">PROVIDE</p>	<p>\$ <u>300</u> \$Incl. _____</p>
<p>Service/Repair/ Maintenance Manual on CD rom or DVD</p>	<p>One complete set, per Contract (not per vehicle) 1. Manuals shall be provided for: A. Cab and chassis B. Equipment and body 2. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. 3. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil. 4. New CD roms or DVDs shall be provided when information is updated, superseded or changed.</p>	<p><input checked="" type="radio"/> Yes No Yes No Yes No Yes No Yes No</p> <p style="text-align: center;">PROVIDE</p>	<p>\$ <u>300</u> \$Incl. _____ \$Incl. _____</p>

<p>Service/ Repair/ Maintenance Manual On Internet Access, or Other Electronic Media</p>	<p>One complete set; per Contract (not per vehicle)</p> <ol style="list-style-type: none"> 1. Vendor shall provide access to the site for the length of time that the City owns the vehicle/equipment at a one time up front cost to the City. 2. Internet information shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. 3. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil. 	<p>Yes No</p> <p>Yes No</p> <p>If other Specify: _____</p> <p>_____</p> <p>X Yes No</p>	<p>\$Exception_____</p>
<p>Parts Manual Paper</p>	<p>Two complete sets, per Contract (not per vehicle) binders required,</p> <ol style="list-style-type: none"> 1. Manuals shall be provided for: <ol style="list-style-type: none"> A. Cab and chassis B. Equipment and body 2. Illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system. 	<p><input checked="" type="checkbox"/> Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p style="text-align: center;">PROVIDE</p>	<p>\$ <u>300</u></p> <p>\$Incl. _____</p>
<p>Parts Manual on CD rom or DVD</p>	<p>One complete set, per Contract (not per vehicle) illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.</p> <ol style="list-style-type: none"> 1. Information shall be provided for: <ol style="list-style-type: none"> A. Cab and chassis B. Equipment and body 2. Parts manuals shall include complete and detailed information for replacement parts for the equipment, including general information, specifications ordering guide lines and superseded parts information. 	<p><input checked="" type="checkbox"/> Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p style="text-align: center;">PROVIDE</p>	<p>\$ <u>300</u></p> <p>\$Incl. _____</p>

	<p>3. New CD roms or DVDs shall be provided when information is updated, superseded or changed.</p>	<p>X Yes No</p>	
<p>Parts Manual on Internet Access, or Other Electronic Media</p>	<p>One complete subscription; per Contract (not per vehicle)</p> <ol style="list-style-type: none"> 1. Internet information shall allow the City 24 hour 7 days/week including holidays access from its main maintenance facility and all its satellite maintenance facilities. 2. Internet information shall include complete and detailed information for parts for the: <ol style="list-style-type: none"> A. Cab and Chassis B. Equipment and Body 3. Internet information shall cover vehicle/equipment, shall include general parts information, parts specifications, ordering guide lines and superseded parts information. 4. Vendor shall provide access to the site for the length of time that the City owns the vehicle/equipment at a one time up front cost to the City. 5. Parts manuals shall include complete and detailed information for replacement parts for the equipment, including general information, specifications ordering guide lines and superseded parts information. 	<p>Access Information: 7 days/week including holidays Yes X No</p> <p><u>Yes</u> No X Yes No X Yes No</p> <p>Yes No If other Specify: _____</p> <p>Yes No</p>	<p><u>INC</u></p>
<p>New Equipment Check-In Form:</p>	<p>The successful vendor shall complete the City's "New Equipment Check-in Form" completely and accurately with all requested information.</p>	<p><u>Amrep and Hardline will check it in</u></p>	<p>\$Incl _____</p>

5.2 Operator and Mechanics Training

Item	Description of Equipment	Offered Equipment	Cost
On Site Equipment Manufacturers Training	On site the vendor shall insure that the equipment manufacturers training representative, after delivery of the equipment Contacts Fleet Management training manager to coordinate equipment training.	Amrep Factory personel will be present to work with City on start up	\$ _____
Fleet Management Training Manager	Charlie Pletcher, Telephone: 720.365.4151 Contact time: 8:00 am to 3:00 pm M-F		
Training Requirements	Training shall consist of factory training materials, classroom and actual field training on the equipment for the equipment operators and supervisors.	Amrep will provide training on body	\$ _____
On Site Mechanics Training	On site mechanics training shall be 1 class, approximately 8 hours, 1 shift total provided at City facilities. The training shall cover maintenance and service procedures, trouble shooting and use of manuals.		\$ _____

6.0 Repair Parts Delivery

Repair Parts delivery	
A.	<p>Prime Vendor is to indicate current Master Purchase Order agreement(s) in place with the City. (Example 0667A0108):</p> <p>If no agreement(s) exists, is your company willing to enter into long-term Master Purchase Order Agreement(s) in order to supply parts and components for the equipment and manufacturers proposed herein? YES OR NO</p>
B.	<p>Sub-Vendor is to indicate current Master Purchase Order agreement(s) in place with the City. (Example 0298A0609):</p> <p>If no agreement(s) exists, is your company willing to enter into long-term Master Purchase Order Agreement(s) in order to supply parts and components for the equipment and manufacturers proposed herein? YES OR NO</p>

7.1
 7.2

Warranty
 General Warranty Provisions

	WARRANTY (Table 1) Class 7 & 8 Vehicles	Complies (Y or N/A)
C.	Express warranty is to be a minimum of 12 months on the Class 8 vehicle chassis. The warranty on the refuse body of the vehicle is to be a minimum of 2 years. The standard factory warranty plan for both the chassis and refuse body, to include the hydraulic components, shall be provided as an attachment to your bid proposal.	Yes
D.	The Warranty is to include at no cost to the City of Denver, all parts and labor, and no charge for work performed at the vendors facility	Yes
E.	Warranty shall start when the City places the vehicle into service NOT on the delivery date. Taking an exception may make bid non compliant.	Yes
F.	Warranty plans shall consist of the total unit and be broken out to a separate plan for each warranty item if applicable, such as engine warranty plan, transmission warranty plan, electrical, etc.	Y
G.	Options listed shall be bid and provided as factory installed under the terms of the full factory-backed warranty. This includes, but is not limited to: air conditioning, radios, cruise control, bumpers, towing packages etc. Dealer-installed options will not be permitted unless pre-approved by the City in writing and, where applicable, indicated on bid sheet as a "dealer installed" non-factory item.	Y
H.	Bidder will be responsible for warranty repair of all installed options/auxiliary equipment included in the bid that has a standard warranty that is less than the standard warranty for the base vehicle/equipment	Yes
I.	Bidder shall use a single, local factory authorized dealership that will accomplish or coordinate required warranty work. The dealership must have a minimum of 1-year experience as a factory authorized vendor for like equipment being bid. Warranty parts shall be available and supplied within 24 hours	Yes
J.	If applicable, bidder shall provide a plan for the City to be reimbursed if the work can be done by the City on site. The current shop rate is \$71.00/hour, not to exceed \$85.00/hour. (Enter a response of N/A if not available)	Yes
K.	The bidder shall respond to request for warranty assistance within twenty-four (24) hours.	Yes
L.	Warranty work shall be accomplished within an appropriate length of time (generally less than 3 working days for everything other than major component repair such as a transmission rebuild) and shall be coordinated with an authorized City representative	yes
M.	During the entire warranty period, if the unit requires transportation to a repair facility, the vendor/sub-vendors shall be responsible for all transportation at "NO COST" to the City and County of Denver. This includes transporting the unit back to the City's domicile location after repairs are complete. If an alternate is bid, charges to the City of Denver shall be listed (e.g. mileage, travel, labor, etc.). Even if an alternate is bid, in NO CIRCUMSTANCES will the City and County of Denver be responsible for transporting a unit greater than 25 miles from the center of Denver. For purposes of these warranty provisions, the center of Denver is defined as the City and County Building located on the corner of Colfax and Bannock Street.	n/a

N.	The item(s) procured by the City pursuant to this Bid Proposal shall, in addition to being subject to the express warranties referenced above, be subject to all implied warranties arising by operation of law under State of Colorado and Federal law, including but not limited to the implied warranty of merchantability and, to the extent applicable, the implied warranty of fitness for a particular purpose arising under the Colorado Uniform Commercial Code, Title 4, Colorado Revised Statutes. The bidder shall in no event attempt to limit or disclaim any of such implied warranties under this Bid Proposal, and any attempt to do so will render the bidder's bid non-responsive under this Bid Proposal.	Yes
O.	This warranty in Table 1 and Table 2, is IN ADDITION to factory warranties on the vehicle and components	

7.3 Fleet Defects and Lemon Clause

WARRANTY - (Table 2) Fleet Defect Clause, Class 7 & 8 Vehicles	
A.	<p>Definition; If during the warranty period, a vehicle/unit(s) covered by this specification is out of service for 10% or 208 hours during the first 2,080 service hours of the 1st year warranty period caused by defects in Design, Testing, Material, and/or Workmanship, then this "Product Defect Clause" or "Lemon Clause" goes into effect. The Product Defect Clause/Lemon Clause shall be determined solely by the City.</p> <p>5. This clause will not apply to delays in completion of warranty repairs due to acts of God, acts of the Public Enemy, acts of the Government (in either its sovereign or contractual capacity), fires, floods, or strikes, and unusually severe weather, PROVIDED that the Vehicle/Unit Vendor shall within three (3) calendar days of any such delay notify the City of Denver's Fleet Management in writing of the causes of delay and the facts relating to the problem</p> <p>6. After 24 hours/3 days of consecutive "lost service" of the vehicle/unit due to warranty problems the warranty period shall be extended by the length of lost service time due to warranty problems.</p> <p>7. The City of Denver shall consider the information submitted and may extend the time (208 hours) for completing, if in the City's, judgment, the facts justify such a warranty extension. The judgment of the City shall be final.</p>
B.	<p>Definition: thirty percent (30%) of the total number of units delivered have the same part(s) and/or components failure requiring replacement and/or modifications, caused by defects in Design, Testing, Material, and/or Workmanship</p>

C.	Remedy: Following notification of a Fleet Defect, the vendor shall develop and implement a plan that either reengineers, modifies, or replaces the defective parts/ systems, such that the identified problem is cured and the operation of the vehicle/equipment is not altered. When alterations are required to cure the defect, those alterations that change or modify the original bid specifications must be approved by the City and County of Denver prior to execution. The vendor will pay for all necessary labor and materials to repair, modify, and/or "update" all vehicles/units in this group. The vendor shall also propose a work schedule that is mutually agreed upon by the City of Denver that corrects the fleet deficiency within 30 days or a mutual agreed upon schedule.
D.	Exceptions: Fleet defects will not apply to minor aftermarket accessories specified by the City of Denver and installed per instructions/specifications. Examples include: toolboxes, spotlights, bed-liners, etc.
E.	Mitigation: Should the vendor become non responsive to the City's notification of a Fleet Defect, the City may employ several options. (1) After notifying the vendor in writing of The City's intent to mitigate its circumstances, the City may chose to perform its own warranty work and seek reimbursement for both parts and labor. (2) On major components, such as engine, transmission, air conditioning, etc., the City may chose to have the repairs performed by an authorized dealer and vendor shall reimburse the City for any parts or labor not covered by other warranty.
F.	Outside Metro-Denver: Vendor will pay for all transportation costs if unit(s) must be sent out of the Denver area for repairs. The City and County of Denver reserves the right to inspect unit(s) before returning back to Denver. The City and County of Denver also reserves the right to send at least one employee, without cost to the City, to inspect the repair(s) before unit is released back to the City.
G.	Expired Warranties: Units that have mutually agreed upon warranty defects during the warranty period will continue to be repaired until completed. If an on-going remedy continues past the warranty date the repairs will continue under warranty until completed or cease at a time agreed upon by the vendor and City and County of Denver.

7.4 Warranty Options

		WARRANTY Options (Table 3) Class 7 & 8 Vehicles		
Cost of Factory Extended Warranties		Please indicate in the columns below the additional cost of an extended warranty for all applicable components listed in the left hand column.		
		Inc = Included		N/A = Not available
		Two Years	Three Years	Five Years
A.	Cab and Chassis	1265	2915	N/A
B.	Engine	INC	1650	2750
C.	Transmission	INC	INC	950
D.	Drive Train	N/A	N/A	N/A
E.	Suspension	N/A	N/A	N/A
F.	Air Conditioning	530	665	N/A
G.	Hydraulics			N/A
H.	a. Pumps	Included	N/A	N/A
	b. Cylinders	Included	N/A	N/A
	c. Tanks	Included	N/A	N/A

	d. Valves	Included	N/A	N/A
	e. Controls	Included	N/A	N/A
I.	Attached Body	Included	N/A	N/A
J.	Joystick	Included	N/A	N/A
K.	Electrical Components	Included	N/A	N/A
L.	Camera System	Included	N/A	N/A
M.	Other			
N.	Notes:			

7.5 **Warranty Service Locations:** Warranty repair parts and service shall be available locally at an established factory authorized dealership meeting requirements of Table 1 Section 7.

A. Cab & Chassis: Dealership Name: RUSH TRUCK CENTERS Telephone #: 303-675-0111
 Street Address: 5165 VASQUEL City: DENVER CO

B. Front Loader Trash Body: Dealership Name: HardLine Equipment Telephone #: 303-500-2176
 Street Address: 7500 Dahlia Street City: Commerce City

C. Sundries Dealership Name: _____ Telephone #: _____
 Street Address: _____ City: _____

8.0 Heavy Duty Vehicle Delivery Documentation:

Delivery Documentation (GVWR 26,001-Lbs and Above Heavy Duty)	
A.	Vehicles ordered under this specification shall be complete and delivered to CITY AND COUNTY OF DENVER, Fleet Management Division. All prices quoted must be quoted at a firm price F.O.B. Denver, Colorado, 5440 Roslyn St. Building C.
B.	<p>Vendor shall supply at acceptance and delivery of vehicle.</p> <ol style="list-style-type: none"> 1. Bill of Sale (aka invoice, buyers order) 2. Original MSO (Manufacturers Statement of Origin) 3. Application for Title and/or Registration, Colorado Dept of Revenue form DR2395 (02-22-11) 4. Odometer Disclosure Statement, Colorado Dept of Revenue form DR2407 (09-07-05) 5. Letter of Certification on Vendor Letterhead (Required for Incomplete Vehicles) with added bodies etc, describes the final configuration of the vehicle) 6. Air Brake inspection form required for any vehicle with air brakes or truck units capable of towing trailers greater than 10,000-Lbs 7. Standard Sales Tax Receipt. 8. DOT inspection form. 9. Temporary License Plate. 10. New Equipment Check-in Form/ Vendor Supplied Information on the Vehicle. Form provided by Fleet contact Dolores @ 720.865.3903 11. Copy of City Purchase Order. 12. All Keys ordered for the Vehicle and Sundries, i.e. toolboxes etc. 13. All Manuals repair, parts, owners and/or CD's/DVD's etc 14. Vehicle Warranty information and receipt for optional warranty. 15. Receipts and Warranty information for vendor Installed/supplied components (lift gates, snowplows, lighting equipment etc)
C.	<p>For an "Incomplete Vehicle" (cab & chassis) add the following:</p> <ol style="list-style-type: none"> 1. Verification of Vehicle Identification Number (VIN), Colorado Dept. of Revenue form DR2087. 2. Statement of Fact for incomplete vehicles with added bodies etc, describes the final configuration of the vehicle. 3. Original weight slip.
D.	<p>Delivery: Monday through Friday between 8:00am and 1:00pm. Location: CITY AND COUNTY OF DENVER Fleet Management 5440 Roslyn St. Building C Denver, CO 80216 Contact person to coordinate delivery: Dolores Gallegos at (720) 865-3900 ext. 03 or direct line (720) 865-3903.</p>

9.0 Vehicle Delivery
 9.1 Delivery of Cab and Chassis to Body Vendor

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF CAB AND CHASSIS AFTER PURCHASE ORDER IS ISSUED TO BODY VENDOR	<u>60</u> DAYS
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9.2 Delivery of Completed Truck with Body Installed to City and County of Denver

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF COMPLETE VEHICLE AFTER CAB AND CHASSIS IS DELIVERED	<u>120</u> DAYS
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10.0 Complete Vehicle Cost

Include: Cab & Chassis Total Cost Front Loader Body Total Cost Sundries Items Total Cost Do Not Include: Optional Equipment Warranty Cost (s) Manual Cost (s)	ONE COMPLETE VEHICLE TOTAL COST Authorized Signature: 	\$ 271,581
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UPDATED PER MARKET ADJUSTMENT (DRMC)20-64 (A1)

s:\bid information\bid_ one time\7063 front loader and small rear loader refuse trucks\7063_conf#1 12-083_.docx

CAB AND CHASSIS: \$136,228

CNG ENGINE: INC

AMREP FRONT LOADER BODY: \$98,107.87

SUNDRIES: \$890

CNG SYSTEM: \$37,805

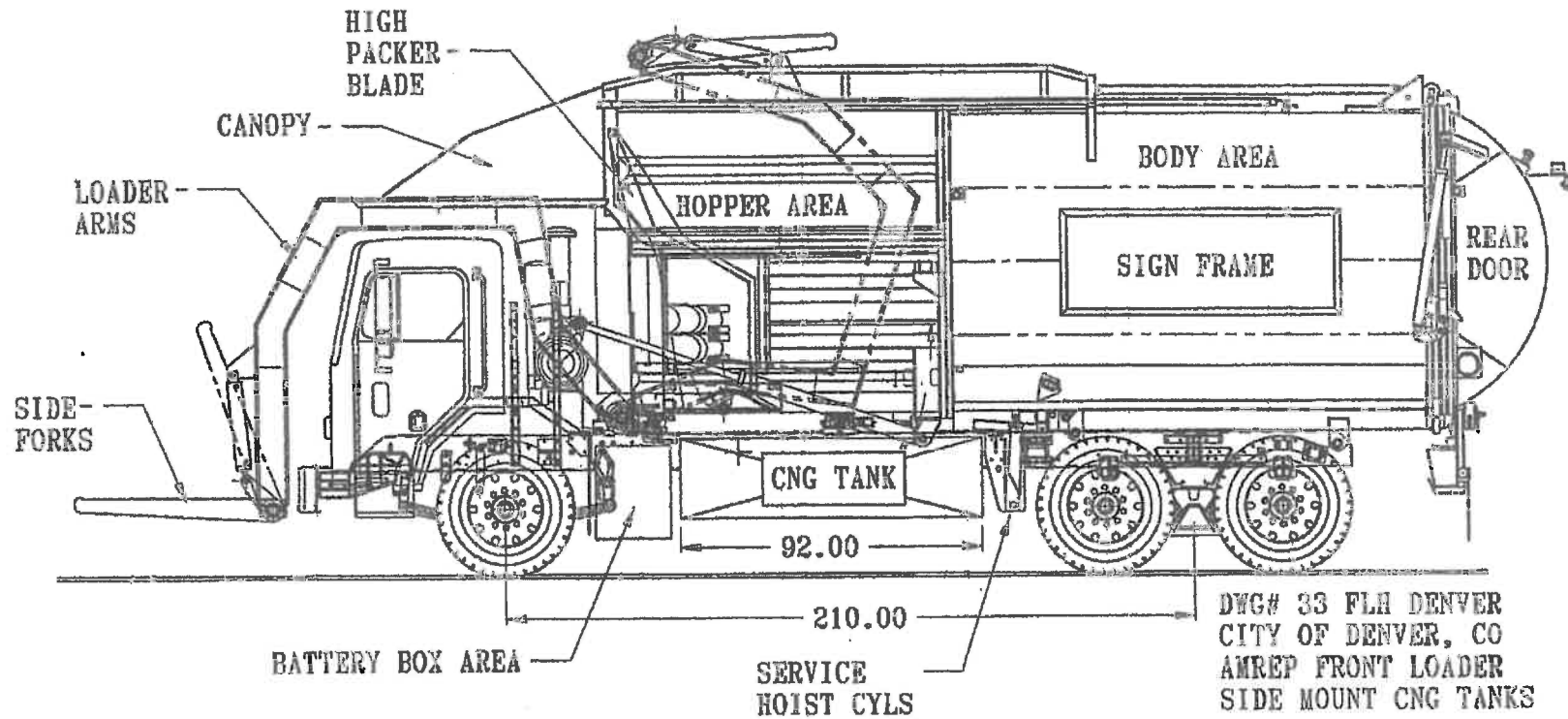
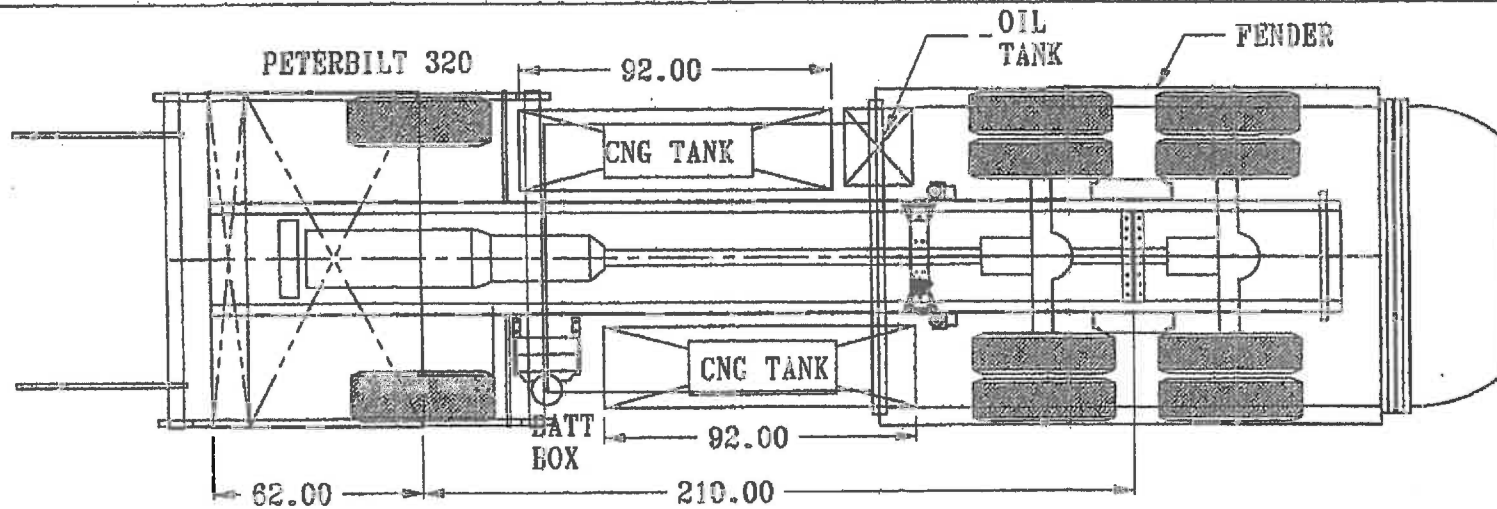
SIGN BOARDS: \$600

ECCO CAMERA SYSTEM: \$2,150

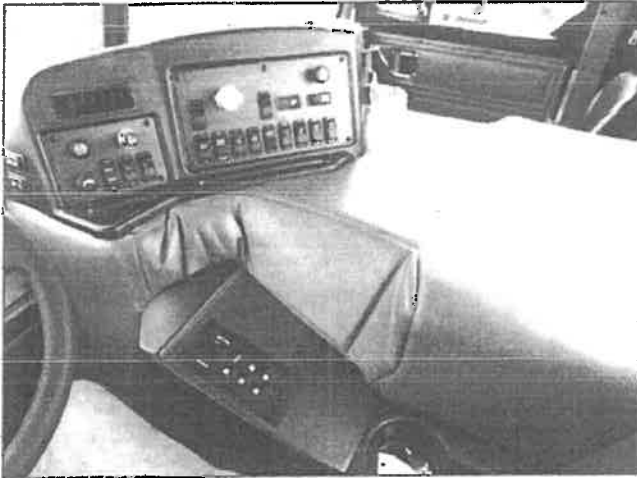
TOTAL EACH UNIT: \$275,780.87

Reference Nos. 12-083

Vendor/Sub Vendor: _____



2012 Pete 320 Cab Interior View




Picture Illustrates Area for In-Cab Controls
Caution used to prevent blocking existing
Transmission Selector as well as Dash Switches.



Interior Layout showing Seat Proximity
to Allison Controls and Angle Required to See
Controls on Dog House.



CCD_LOI_EXHIBIT_REAR LOADER

RETURN TO: Department of General Services PURCHASING DIVISION 201 West Colfax Avenue Department 304, 11 th Floor Denver, CO 80202 Phone: (720) 913-8100 FAX: (720) 913-8101	CITY AND COUNTY OF DENVER  DENVER THE MILE HIGH CITY	Department of General Services PURCHASING DIVISION www.denvergov.org/purchasing Buyer: Michael Romero 720-913-8122
ADRIENNE BENAVIDEZ MANAGER, GENERAL SERVICES	MICHAEL HANCOCK MAYOR	JAMES P. MCINTYRE DIRECTOR OF PURCHASING

FORMAL PROPOSAL

Formal Proposal No. 7032

**REFUSE TRUCKS (SIDE AND REAR LOADER)
66,000 GVWR**

SCHEDULE OF EVENTS

• Proposal Issued	November 19, 2012		
• Deadline to Submit Additional Questions	November 28, 2012	2:00 P.M.	Local Time
• Response to Written Questions	November 30, 2012		
• Proposal Due Date	December 7, 2012	3:00 P.M.	Local Time

Vendor offers to furnish to the City and County of Denver the materials, supplies, products or services requested in accordance with the specifications and subject to the Terms and Conditions described herein.

VENDOR SIGN HERE

Company Name: RUSH TRUCK CENTERS / COLORADO INC
441/2 Rush Truck Center Denver

By: Michael Russell Regional General Manager
 (Printed or Typed Name)

[Signature]
 (Signature)

Signature constitutes acceptance of all Terms and Conditions listed on this form and all documents attached.

THIS PROPOSAL MUST BE RETURNED IN A SEALED ENVELOPE WITH THE PROPOSAL NUMBER AND PROPOSAL TITLE ON THE ENVELOPE.

Reference Nos. 12-080, 12-081, 12-082 / 13-114, 13-122

CITY AND COUNTY OF DENVER
Technical Specifications and Bid Items
For a
Refuse Truck 25 Yd³ Rear Loader

1.0 General Description

A new current model year truck, cab over engine with low entry, cab forward design left hand drive. Powered by a turbo-charged diesel engine with charge air cooling, a 66,000 GVWR (plate certified) with 25-yard rear loader body. Collection operations shall be conducted in narrow City alleys with deep drainage transitions and steep angles at street intersections. The truck shall be suitable for a minimum of 8 years service by Solid Waste Management in loading of residential waste materials. The truck's rear loader body shall operate at maximum efficiency and speed when the truck engine is at "low idle" approximately 800-rpm or less, revving engine shall not increase speed /efficiency. The truck shall be fully equipped and road ready, easily capable of transporting over the road, into, trash transfer facilities or into landfills a fully packed minimum 25 yard load.

1.1 Standard Factory Equipment

All standard factory equipment shall be included with the vehicle/equipment; no deletions of standard factory equipment will be permitted unless specifically superseded in these specifications. Accessories not specifically mentioned herein but necessary to furnish a complete unit ready for use shall also be included.

1.2 Government Requirements (where applicable)

The vehicle/equipment shall be built to, and perform in accordance with, all the requirements of the latest edition of the following standards and specifications:

- FHWA, Federal Highway Administration
- SAE, Society of Automotive Engineers Specifications
- FMVSS, Federal Motor Vehicle Safety Standards
- DOT, Department of Transportation Regulations
- AWS, American Welding Society Standards
- PUC, Public Utilities Commission (Colorado)

1.3 Workmanship and Durability

Workmanship throughout the vehicle/equipment shall conform to the highest standards. Durability shall be sufficient to allow safe and efficient operation of the equipment/vehicle.

1.4 Completion of Bid Items and Alternates

Vendor shall complete each line item in "Offered Equipment" and "Cost" columns in the following manner:

- A. Provide vehicle/equipments technical information: in "Offered Equipment" provide technical information as requested and provide cost of item in "Cost" column.

Reference Nos: 12-080, 12-081, 12-082

Page 1 of 42

Vendor/Sub Vendor:

- B. Included Standard Equipment: in "Offered Equipment" column provide technical information as requested for standard equipment in, "Cost" column write NC for "No Charge".
- C. Differences: in "RED" ink in "Offered Equipment" column adjacent to Description of Equipment provide information on the item being offered, in "Cost" column provide cost if there is a bid item cost.
- D. Vendors shall break out and list costs for each specification section. Failure to break out proposed costs may cause proposal to be non-responsive. Breakout costs will be used for comparisons clarifying cost issues and if deletions to the specifications need to be made.

1.5 Major Areas of Concern

	Description of Concern
A.	Left Side Operator Cab Area to include: <ol style="list-style-type: none"> 1. Visibility from the driver's seats (Blind Spots). 2. Steering wheel belly room. 3. Shoulder leg and hip room. 4. Head room. 5. Operator's vision. 6. Floor height and step distances. 7. Ergonomic layout of vehicle and rear loader body controls. 8. Ease and speed of operation of collection and packing functions.
B.	Mirror width for use in obstructed areas to include: <ol style="list-style-type: none"> 1. Overall extended mirror width. 2. Minimum mirror width. 3. Ability for mirrors to be hit by obstructions (branches etc) and absorb the hit with out damage. 4. Ability for mirrors to be reset or adjusted into position without operator leaving operator's station.
C.	Warranty: <ol style="list-style-type: none"> 1. Ability and cost to obtain a 5-year warranty on cab and chassis. 2. Ability and cost to obtain a 5-year warranty on rear loader body, packer panel, hydraulic pump, motors cylinders and controls. 3. Location of warranty providers.
D.	Service Ability: <ol style="list-style-type: none"> 1. Ability to easily service cab and chassis items that require regular (yearly or less) servicing and maintenance 2. Ability to easily service rear loader body components/items that require regular (yearly or less) adjusting, servicing and maintenance.

2.0 Build Status of Vehicles:

2.1 Contractor and all sub vendors after receipt of the City's purchase order shall:

The primary Contractor (prime vendor) shall be responsible for providing within 15 business days to the City a "Preliminary Build Status Plan" to include but not limited to:

- A. The "Build Status Plan" shall include sufficient detail to assure that the ordered units **will** meet specifications and be built to the highest quality standards and be delivered on time.
- B. Placement date of initial order with the cab and chassis manufacture.

- C. Cab and chassis manufacturer's date of order acceptance. Written order confirmation is required.
- D. Placement date of initial order with the body manufacture.
- E. Body manufacturer's date of order acceptance. Written order confirmation is required.
- F. Build dates for all cab and chassis to include start date and completion date.
- G. Build dates for all bodies to include start date and completion date.
- H. Delivery date of the cab and chassis to the sub vendor's body manufacturer.
- I. Beginning and completion dates for installation of the body on each cab and chassis.
- J. Ship date for each completed vehicle (cab and chassis with body) from sub vendor's body manufacturer to Denver and which location shipped to.
- K. Contractor and sub vendors local vehicle preparation time.
- L. Delivery of a completed vehicle meeting specifications to the City.

2.2 The Contractor shall contact all sub vendors:

The Contractor shall contact all sub-contractors providing accessories and equipment for the vehicle (s) and provide the sub-contractors with the a list of all accessories and equipment, manufacturer's order confirmation, order number, vehicle specifications, build date and delivery date to dealer from the vehicle manufacturer on the ordered vehicle. It is the primary selling dealer's responsibility to assure that the sub-contractors orders the accessories and equipment and has the items in stock and is prepared to install the accessories and equipment items when the vehicle arrives at the dealership.

3.0 Basic Requirements, or approved equal.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

3.1 Basic Vehicle

	Description of Equipment	Offered Equipment	Cost
A.	Cab over engine, 2-man design, cab forward tandem axle 1. Sit-down left side operator controls, 2. Tandem axle 66,000 lb. GVWR (plate certified), 3. Wheelbase approximate 210 inch. 4. Effective clean cab to axle approximately 156-inch. 5. After frame 60". 6. Front tire cut angle 50°. 7. Wall-to-wall turning diameter 71 ft. 8. Vendor shall verify wheelbase is appropriate for specified body	Make: <u>PETZLUM</u> Model: <u>310</u> Left Side: <u>(Yes)</u> No Rating: <u>66000</u> lbs Wheelbase: <u>210</u> " C to A: <u>156</u> " A F: <u>60</u> " Cut Angle: Left _____ ° Right _____ ° Turn Dia. : _____	\$ <u>111,656</u>

B.	The left side operator configuration is very important for operator comfort and efficiency. The operator position shall accommodate operators of various physical sizes providing good visibility, steering wheel/belly clearance, and shoulder width room. Also all the controls for operating the attached equipment shall be in an ergonomic layout/configuration that promotes minimal operator movement, operator comfort and operation efficiency.	<u>LEFT SIDE</u>	\$ <u>N/C</u>
C.	Frame: 1. Rating 66,000-lbs. GVWR minimum, 2. Heavy-duty 120,000-psi full channel heat-treated steel, with main frame 2,086,000 in-lb. RBM and deep frame section 3,235,000 in-lb. minimum.	Frame Rating: <u>66,000</u> -lbs Yield Strength: <u>120,000</u> psi Section Modulus/rail: <u>17.8</u> in ³ Frame RBM/rail: <u>2136,000</u> lbf-in	\$ <u>479</u>
D.	All components that require regular servicing shall be easy to access and be located as much as possible to protect the components from road splash. Access to rear engine mounts or transmission removal should not require the removal of electrical wiring, hydraulic hoses, air tanks or air dryers. Air dryer shall be easy and quick to access for servicing.	<input checked="" type="radio"/> Yes No	\$ <u>N/C</u>
E.	Towing Provisions: 1. Tow hooks, two front and two rear, frame mounted. 2. Air brake 3/8" female quick-connect hook up system on vehicle for wrecker air brake connection. Quick-connectors shall be accessible and protected but shall not stick out where they could get damaged. 3. A check valve shall be provided at the vehicles air tank to prevent air loss.	<input checked="" type="radio"/> Yes No Make: _____ Model: _____ <input checked="" type="radio"/> Yes No	\$ <u>300</u>
F.	Keying: 1. Keys keyed alike Ignition, Door, (same) and Toolboxes (same), 2 standard sets per vehicle. 2. Additional 5 key sets 3. If the City has similar make and model trucks in fleet the trucks shall be keyed the same as existing trucks.	Cost for each additional key set: \$ <u>2</u> X 5= <input checked="" type="radio"/> Yes No	No Charge \$ <u>10⁰⁰</u> \$ <u>N/C</u>

3.2 Engine or "Approved Equal"

	Description of Equipment	Offered Equipment	Cost
A.	<p>Engine: Cummins ISX-11.9 liter, VGT turbocharged diesel engine, rated at 330 hp @ 2,100 rpm, torque 1,350 lb/ft @ 1,200 rpm, 2,100 rpm governed includes:</p> <ol style="list-style-type: none"> 1. Engine shall utilize DEF (diesel exhaust fluid) to meet current EPA regulations and reduce NOx 2. Engines shall be electronically controlled with following components: <ol style="list-style-type: none"> a. Engine protection system to monitor low oil pressure, high coolant temperature and low coolant level that will prevent component damage with manual over-ride on truck engine: b. Low oil pressure. c. High oil temperature. d. High coolant temperature. e. Low coolant level. f. High transmission oil temperature. g. Idle shutdown timer. h. Speed limiter top gear and cruise. 3. Computer controlled fast idle and PTO protection. 4. Thermos bottle stopper-type dipstick. 5. Magnetic drain plug. 6. Delco-Remy 22-SI, 145 amp alternator. 7. Delco-Remy 42 MT, 12v starter with over-crank protection. 	<p>Make: <u>Cummins</u> Model: <u>ISX-12</u> HP: <u>330</u> @ <u>2100</u> rpm Torque: <u>1350</u> @ <u>1100</u> rpm Emissions Rating: <u>2013</u></p> <p><input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No</p> <p>Make: <u>PACCAR</u> Model: <u>160 AMP</u> Make: <u>PACCAR</u> Model: <u>12VOLT</u></p>	<p>\$ <u>5964</u></p>
B.	<p>Power Take Off (PTO)</p> <ol style="list-style-type: none"> 1. Transmission direct mounted Chelsea 890 series with hydraulic pumps direct mounted to Chelsea 890 PTO at rear of the transmission. 2. PTO control electrically actuated from inside cab. 3. PTO speed limiter shall be connected to the engine computer not to an external overspeed box (EOS). 4. PTO shall efficiently operate all hydraulic systems at engine "low idle" 750 rpm or less. Increasing engine speed above 800 rpm shall not improve hydraulic operations except when ejecting the trash load. 	<p>Make: _____ Model: _____ Location: _____</p> <p style="text-align: center;">Front Mount PTO</p> <p>Yes No Yes No</p> <p style="text-align: center;">With Frame Extension</p> <p>Yes No PTO Idle rpm: _____</p>	<p>\$ _____ \$ _____ \$ _____ \$ _____</p>

C.	Filtration: 1. Oil: Fleetguard LF3000 full flow/bypass oil filter. 2. Fuel: Racor 690RP12 fuel/water separator with thermostatically controlled fuel line heater.	Make: <u>FLEETGUARD</u> Model: <u>LF3000</u> Make: <u>RACOR</u> Model: _____	\$ <u>172</u> \$ <u>172</u>
D.	Engine Air Intake: 1. The air intake shall be on the far left side of the vehicle at cab height. 2. The air intake shall be positioned so that it can not draw in exhaust gases. 3. Air filter dual element dry type with air inlet restriction indicator located in cab	Yes <input checked="" type="radio"/> <u>RIGHT SIDE</u> <input checked="" type="radio"/> Yes No Make: <u>DOUGLASS</u> Model: <u>FVE</u>	\$ <u>STD</u>
E.	Exhaust Meeting 2012 EPA Standards: 1. Exhaust discharge shall be on the right side of the vehicle 2. The exhaust after treatment device shall be horizontally mounted above the engine so as to not obstruct maintenance/repairs underneath the truck. 3. Maximum exhaust system height shall not be higher than the highest point on the body or truck. 4. Horizontal with a vertical chrome stack and stainless steel exhaust guard that will easily fit up to Denver's exhaust gas evacuation system. 5. Exhaust discharge shall be above roofline and exhaust gases shall not discolor the body or be drawn into the operator's cab.	Trap Make: <u>CUMMINS</u> Model: <u>DEF</u> Location: <u>BEHIND CAB</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>STD</u>
F.	Fuel Tank: 1. Fuel tank 80 gallons minimum, 2. The tank shall frame mounted on the right side of chassis to provide step and platform for accessing the body clean-out door. 3. Fuel tank may be combined with body supplier's hydraulic tank.	Size: <u>80</u> gallons Location: <u>RIGHT SIDE</u>	\$ <u>STD</u>
G.	Diesel Enhancement Fluid Tank: 1. Location behind fuel tank 2. Size 6-gallons minimum 3. Tank fill opening shall be easily identified as "DEF Fluid Only" and shall not accept the entrance of a standard diesel fuel nozzle.	Location: <u>LEFT SIDE</u> DEF Tank Volume: <u>8</u> gallons <input checked="" type="radio"/> Yes No	\$ <u>STD</u>
H.	Coolant Hoses: 1. Gates Blue Stripe hoses 2. With constant torque hose clamps.	<u>GATES - BLUE STRIPE</u>	\$ <u>STD</u>
I.	Fan: 1. Fan clutch heavy-service-duty with automatic fan control. 2. The fan shall operate off of engine coolant and transmission	Make: <u>HORNER</u> Model: <u>2 SPEED</u>	\$ <u>STD</u>

coolant temperature.			
J.	<p>Air System:</p> <ol style="list-style-type: none"> Air compressor Bendix 18.7-cfm Tu-Flo minimum Air tanks mounted horizontal inside frame. Air drain valves shall be ¼-turn brass with "Flag" style handle and air blast routed away from the person operating the valve. The drain valves shall be installed in an easy to access and operate position in a central location The valve bracket shall be permanently labeled (engraved): "Drain Air Tanks Daily" ½" font size "Air Valve 1" "Air Valve 2" "Air Valve 3" ¼" font size Air lines shall be color-coded nylon type. 	<p>Make: <u>Bendix</u> Model: <u>18.7</u></p> <p>Capacity: <u>18.7</u> cfm</p> <p>Location: <u>LEFT SIDE</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>570</u></p> <p>\$ <u>570</u></p>
K.	<p>Cold weather starting aids on truck engine.</p> <ol style="list-style-type: none"> Block heater, Phillips "Zero-Start" 120vAC, 1500 Watt, engine coolant temperature controlled to: <ol style="list-style-type: none"> Turn "on" at 40°F engine coolant temperature. Turn "off" at 55°F engine coolant temperature. The plug-in station shall have 2 LED indicator lights to: <ol style="list-style-type: none"> Light when plugged into "hot line" to show "hot line is energized. Light when engine coolant drops below 40°F. Plug-in shall be mounted below driver's door, protected from mechanical and weather damage. Heater plug shall be a male standard grounded 15 amp rated plug. A decal or information plate shall be provided describing how the system functions. The decal/plate shall be heavy-duty UV protected and capable of withstanding pressure washing and other normal vehicle functions. Cold weather starting assist (no either allowed). 	<p>Make: <u>Phillips</u> Model: <u>ZERO START</u></p> <p>On Temperature: <u>40</u></p> <p>Off Temperature: <u>55</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>Location: <u>DRIVER DOOR</u></p> <p><input checked="" type="radio"/> Yes No</p> <p>Type: _____</p>	<p>\$ <u>350</u></p> <p>\$ <u>INCL</u></p> <p>\$ <u>INCL</u></p> <p>\$ <u>INCL</u></p> <p>\$ <u>N/A</u></p>

3.3 Transmission and Drivetrain

	Description of Equipment	Offered Equipment	Cost
A.	Transmission shall be an Allison New World HD4560P, wide ratio, 6-speeds with the following components: <ol style="list-style-type: none"> 1. Transmission and rear differential gearing shall be optimized for "Best" fuel economy, speed shall not be less than 60 mph. 2. The shift point calibrations both primary and secondary shall be factory S-1 set for reducing the shift point below maximum governed speed but the engine shall not drop below the peak torque point. On engines with 2,100 rpm full-load governed speed the shift point is reduced 200 rpm. For engines with higher or lower full-load governed speeds the shift point will need to be determined on a case-by-case basis. 3. Transmission interface wiring for Allison MD/HD transmission. 4. Electric push-button transmission controls shall be located on the "dog house" not under the joystick armrest. Location to be mutually agreed upon. 5. TranSynd TES 295 automatic transmission fluid. 6. Deep pan transmission sump with "Gold Series" filter kit rated for severe duty of 75,000 miles or 36 months. 7. Transmission water-to-oil cooler. 8. Remote mounted transmission filter. 9. Magnetic drain plug. 	Make: <u>Allison</u> Model: <u>4560 HDSP</u> Speeds: <u>6</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	\$ <u>9051</u> \$ <u>INL</u>
B.	Rear Axles: <ol style="list-style-type: none"> 1. Eaton single reduction, capacity 46,000-lbs. 2. Driver controlled main power divider locking differential. 3. Oil pump. 4. Axle temperature sensor. 5. Axle ratio for best fuel economy with an approximate 60-mph top speed. 6. Oil seals, Union 76 Triton EP 75W-90 synthetic gear lubricant. 7. Magnetic drain plug. 	Make: <u>DANA SPICER</u> Model: <u>D 46-170</u> Gear ratio: _____ Top Speed: <u>60</u> mph level	\$ <u>570</u>
C.	Front Axle: <ol style="list-style-type: none"> 1. Eaton, capacity 20,000-lbs. minimum with oil seals and Union 76 Triton EP 75W-90 synthetic gear lubricant. 	Make: <u>DANA SPICER</u> Model: <u>D 2000 F</u> Capacity: <u>20000</u>	\$ <u>570</u>

D.	<p>Springs:</p> <ol style="list-style-type: none"> 1. Front leaf with graphite impregnated spring pin bushings. Front: capacity 20,000-lbs. minimum. 2. Rear Hendrickson HMX-460 Haulmaxx varirate spring system. Rear: capacity 46,000-lbs. minimum. 	<p>Make: <u>PETERBILT</u> Model: <u>20,000</u> Capacity: <u>20,000</u> - lbs Make: <u>HENDRICKSON</u> Model: <u>HAULMAX HMX460</u> Capacity: <u>46,000</u> - lbs</p>	<p>\$ <u>570</u> \$ <u>443</u></p>
E.	<p>Brakes:</p> <ol style="list-style-type: none"> 1. Bendix, air 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads. 2. Bendix, air 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads. 3. Air brake chambers type 2824, size 24 chamber. 	<p>Front Make: <u>BENDIX</u> Model: <u>ADB 22x</u> Disc Size: <u>17</u> in Rear Make: <u>BENDIX</u> Model: <u>ADB 22x</u> Front Chamber: <u>24</u> Rear Chamber: <u>24</u></p>	<p>\$ <u>570</u></p>
F.	<p>Anti-Lock Brake System / Automatic Traction Control system:</p> <ol style="list-style-type: none"> 1. Anti-Lock Brake System (ABS): Eaton 6S/6M with ATC, 6-channel with (6 sensors & 6 modulators) and 5-9 psi crack pressure relay valve. 2. Automatic Traction Control (ATC) shall work in conjunction with the Eaton ABS brake system in low traction situations limiting torque to least loaded tire allowing most loaded tire to receive torque and pull the vehicle. The ATC system in conjunction with the Interaxle Driveline Lock shall provide traction control very similar to the Driver Controlled Differential Lock system. 3. Interaxle Driveline Lock (IADL) to lock front and rear drive axles together. The interaxle differential lock shall be automatically locked via the ATC or manually locked by the driver. The IADL switch shall activate a flashing LED warning light. 4. Air lines shall be color-coded nylon type. 	<p>Make: <u>EATON</u> Model: <u>6S/6M</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>241</u> \$ <u>132</u> \$ <u>570</u> \$ <u>570</u></p>
G.	<p>Air Dryer, (No Approved Equals)</p> <ol style="list-style-type: none"> 1. Bendix AD-IP with heated steel reservoir, automatic moisture ejector and cable operated air tank drain valves accessible from outside of vehicle. 2. Air dryer shall be installed on the outside of the frame rail in a location that is easy access and does not exceed 15-minutes to service unit. 	<p>Make: <u>BENDIX</u> Model: <u>A0-15-CP</u> _____ _____ _____</p>	<p>\$ <u>570</u> \$ _____</p>
H.	<p>Driveline:</p> <ol style="list-style-type: none"> 1. Eaton Permalube type U-joints. 	<p>Make: <u>SPICER</u> Model: <u>1870</u></p>	<p>\$ <u>712</u></p>
I.	<p>Power Steering:</p> <ol style="list-style-type: none"> 1. TRW with 2-qt. reservoir. 	<p>Make: <u>SHEPARD</u> Model: <u>50110SD</u> Reservoir Size: <u>2</u></p>	<p>\$ <u>457</u></p>

3.4 Electrical System

	Description of Equipment	Offered Equipment	Cost
A.	Alternator: 1. Alternator shall be a heavy duty, internally regulated, output 160-amp minimum.	Make: <u>PALCO</u> Model: <u>160</u> Rating: <u>160</u> amps	\$ <u>22</u>
B.	Batteries: A. Two or three Group 31 batteries with a total CCA of 1950 minimum. B. Battery location frame mounted left hand side. C. Battery shut-off switch easy to see and access. D. Jump start provision easy to access. E. Battery cables (00) stranded copper minimum.	Quantity: <u>3</u> CCA's: <u>2100</u> Battery Location: <u>LEFT SIDE</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	\$ <u>570</u>
C.	Circuit Protection: 1. Circuit breakers with manual reset, no fuses. 2. Circuit breaker panel shall be easy to access. 3. Circuit breaker panel shall be clearly labeled for easy identification.	Type Protection: <u>CIRCUIT BREAKERS</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	\$ <u>570</u>
D.	Wiring: 1. Wiring shall be color coded with hot stamped wire numbers. 2. All wiring shall be run in sealed wiring looms to reduce corrosion from magnesium chloride products	Yes <input checked="" type="checkbox"/> No Yes <input checked="" type="checkbox"/> No	\$ <u>570</u>
E.	Body Builders Junction Box: 1. Body builder's junction box shall be mounted behind the cab 2. Terminal shall be marked for easy identification.	Location: <u>BEHIND CAB</u> <input checked="" type="checkbox"/> Yes No	\$ <u>196</u>
F.	Back Up Alarm: 1. Back up alarm 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter. 2. The alarm shall be mounted out of the vehicle's rear wheel splash area.	dBa rating: <u>107</u> <input checked="" type="checkbox"/> Yes No	\$ <u>26</u>
G.	Cab and Chassis Lights: 1. Halogen sealed beam headlights, 12v. 2. Daytime running lights. 3. Wiring shall be sealed modular plug-in type. 4. Marker lights LED type.	<input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Make: <u>92076</u> Model: <u>LED</u>	\$ <u>43</u> \$ <u>746</u>

3.5 Cooling System

	Description of Equipment	Offered Equipment	Cost
A.	Cooling system with coolant recovery tank capable of maintaining engine manufacturer's recommended operating temperatures at an elevation of 6,800' in 120° F low humidity ambient conditions shall be provided.	<input checked="" type="radio"/> Yes No	\$ <u>510</u>
B.	Coolant protection shall be -34° F. Coolant Type: Nitrite or Poly Organic Acid or ...	Provide specs: _____ <u>NITRITE</u>	\$ <u>510</u>
C.	Fleetguard coolant filter WF2071.	Provide specs: <u>FLEETGUARD</u>	\$ <u>510</u>

3.6 Tires and Wheels

	Description of Equipment	Offered Equipment	Cost
A.	Tires: 1. Tires: 315/80R22.5, tubeless, 20-ply, load range L. 2. Front: Michelin XZUS, Steer Tires. 3. Rear dual: Michelin XZUS, Steer Tires	Make: <u>Michelin</u> Model: <u>XZUS</u> Make: <u>Michelin</u> Model: <u>XZUS</u>	\$ <u>1903</u>
B.	Wheels: 1. Disc, 10-hole, Hub piloted type, Single nut, Meets ISO Standard 4107. 2. White powder epoxy coated finish. 3. Front 22.5" x 9". 4. Rear 22.5" x 9"	Make: <u>ACQUAKE</u> Model: <u>9039</u> <u>20X ALUMINUM</u> Yes No Size: <u>22.5</u> x <u>9</u> Size: <u>22.5</u> x <u>9</u>	\$ <u>1276</u>

3.7 Interior

	Description of Equipment	Offered Equipment	Cost
A.	Left side operating controls: 1. Vehicle operation shall be only from left side of vehicle. 2. Driver's controls shall be ergonomically laid out for maximum driver efficiency in operating the rear loader collection body. 3. Since the vehicle will be used in rear loader trash collection with an "operate at idle" hydraulic system the transmission shifter location needs to be in a location the driver can easily access but not where it will be covered by the rear loader body's controls.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>510</u> \$ <u>510</u>

	Description of Equipment	Offered Equipment	Cost
	<p>With an "operate at idle" hydraulic system the driver will not be required to shift the vehicle into "neutral" at each collection and after collection back into "drive" to proceed to next stop.</p> <p>4. Doors:</p> <p>a. Left and right doors shall be front hinged.</p> <p>b. Left and right doors shall have electric full roll up/down windows.</p>	<p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>570</u></p>
B.	<p>Driver Viewing Environment/Area:</p> <p>1. Requested SAE J1750 and SAE J1050a "Target Evaluation" method operator view area information must be submitted with bid for evaluation.</p> <p>2. Failure to submit the requested information may make bid non-responsive.</p> <p>3. Vendor using the "Target Evaluation" method shall provide with bid, top view drawings with dimensions of the visibility values from the operator's seat at eye level for operators of the following percent quartile sizes:</p> <p>a. 5th % male height 1554 mm or 61.18"</p> <p>b. 50th % male height 1668 mm or 65.67"</p> <p>c. 95th % male height 1783 mm or 70.20"</p> <p>4. Drawings shall be on 11" x 17" paper ("B" size drawing paper) for easier reading.</p> <p>5. Good operator exterior visibility is a major safety concern and increasing operator viewing area and eliminating "blind spots" is beneficial to the City</p>	<p>Drawings Provided: <input checked="" type="radio"/> Yes No</p> <p>Paper Size: _____ " X _____ "</p>	<p>\$ <u>152</u></p>
C.	<p>Seats: Drivers seats shall be:</p> <p>1. Left seat shall be air suspension Bostrom, high back driver's seat, gray vinyl with cloth insert and armrests.</p> <p>2. Right side seat shall be spring suspension Bostrom, mid-back seat, gray vinyl with cloth insert and armrests</p>	<p>Make: <u>PETERBILT</u> Model: <u>H1 BACK</u></p> <p>Make: <u>PETERBILT</u> Model: <u>MID BACK</u></p>	<p>\$ <u>152</u></p>
D.	<p>Required Submittals with Bid:</p> <p>1. Requested information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive.</p> <p>2. Vendor shall provide with bid, drawings with dimensions and photographs of the proposed cab interior for review.</p> <p>3. Interior left side dimensions measured:</p>	<p>Provide Materials: _____</p>	

	Description of Equipment	Offered Equipment	Cost
	a. Belly Room: seat back to steering wheel. b. Leg Room: seat front edge to brake pedal. c. Head Room: seat cushion to ceiling. d. Torso Room: Width from door to doghouse or other obstruction. e. Seat fore/aft travel: f. Seat height travel: g. Steering Wheel Knuckle Clearance: distance to closest object h. Floor Height: measured ground to cab floor. i. Cab Step Heights: measured from ground. j. Steering Wheel Tilt and Telescoping: 4. Location of the transmission shifter: should not be obstructed by automated barrel loader's joystick.	Seat full forward: <u>11</u> " Seat full back: <u>15</u> " Seat full forward: <u>6</u> " Seat full back: <u>12</u> " Seat full lowered: <u>43</u> " Seat full raised: <u>35</u> " Smallest measurement: <u>23</u> " Travel: <u>3</u> " Travel: <u>2</u> " Clearance: <u>6</u> " Height: <u>35</u> " 1 st Step: <u>15</u> " 2 nd Step: <u>26 1/2</u> " Tilt: <u>5</u> ° Telescoping distance: <u>0</u> "	
E.	Engine Cover "Doghouse" 1. The engine cover "doghouse" shall be recessed to accommodate the ergonomic positioning of the automated barrel loader controls. 2. The vehicle manufacturer shall work with the body supplier to assure that the controls are the most ergonomic possible to assure operator comfort and reduce repetitive motion injuries. 3. The transmission shifter shall not be obstructed by the automated barrel loader joystick. The transmission shifter should be located in a location convenient to the operator but not directly adjacent to the driver's side. Since the vehicle has "operate at idle" hydraulic system the transmission does not require shifting into and out of "neutral" at each stop. 4. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. 5. The City, body vendor and the vehicle supplier shall mutually determine control locations after Contract award.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>570</u>
F.	Instrumentation: 1. Instrumentation shall include speedometer, engine hourmeter, tachometer, voltmeter, coolant temperature, oil temperature, oil pressure, fuel level and air pressure with low-pressure alarms (light, audible).	<input checked="" type="radio"/> Yes No	\$ <u>INC</u>
G.	Steering: 1. Steering controls shall comfortably accommodate operators of various sizes, from short and small to tall and larger. 2. Steering tilt easy to adjust 3. Telescoping easy to adjust,	<input checked="" type="radio"/> Yes No Tilt: <input checked="" type="radio"/> Yes No Telescoping: Yes <input checked="" type="radio"/> No Travel In-Out: _____ in	\$ <u>570</u> \$ <u>570</u>

	Description of Equipment	Offered Equipment	Cost
H.	Upfitter's Switch Panel: 1. The vehicle manufacturer shall provide for the rear loader body manufacture an upfitter's switch panel for automated body control switches. 2. The panel location shall be in an ergonomic location and shall not require more than 30° head movement and be within easy reach of driver's of various sizes and physiques. 3. The switch panel shall have permanently labeled and lighted rocker switches for all optional sundries equipment and lights etc.		\$ _____
I.	Windshield Wipers: 1. Wipers 2-speed self parking. 2. Intermittent wiper mode.	Speeds: <u>2</u> <input checked="" type="radio"/> Yes No	\$ <u>870</u>
J.	Floor Covering: 1. Floor covering shall be heavy-duty black rubber/vinyl flooring.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
K.	Air Conditioning: 1. Factory installed cab R134A air conditioning 2. Cab shall be insulated to include floor, firewall, roof and walls.	Refrigerant Type: <u>R134</u> <input checked="" type="radio"/> Yes No	\$ <u>709</u>
L.	Radio: 1. Radio AM/FM stereo with two speakers.	<input checked="" type="radio"/> Yes No	\$ <u>147</u>
M.	Fire extinguisher: 1. Extinguisher ABC, 5-lb. dry type rechargeable 2. Installed in cab. 3. Location labeled with 1" letters on outside of the cab.	Type: <u>ABC</u> Yes No	\$ <u>75</u>
N.	Grab handles: 1. One each on exterior of cab for operator and passenger assist and one interior for passenger. 2. Grab handles shall provide adequate clearance to other objects to provide easy access and clearance to prevent pinch or other hazards.	<input checked="" type="radio"/> Yes No Yes No	\$ <u>570</u>

3.8

Exterior:

	Description of Equipment	Offered Equipment	Cost
A.	Vendor shall provide with bid drawings with dimensions and photographs of the proposed cab exterior including mirrors for review. Failure to submit the requested information may make bid non-responsive.	Provide Materials: _____ _____ _____	\$ <u>22K</u>
B.	Cab Design: 1. Heavy-duty or severe-duty type with steel or aluminum body. 2. High visibility tilt forward design. 3. Front hinged doors. 4. Low floor cab over with steps mounted to body. 5. Maximum step height 15".	Body Rating: <u>2.5</u> Body Material: <u>ALUMINUM</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Step Height: <u>15</u> in	\$ <u>570</u>
C.	Front Bumper: 1. The front bumper shall be straight and fit as close to the front of the cab as possible with adequate reinforcing to not allow the bumper to be driven back into the cab with minor impacts. 2. The bumper shall be chrome	Bumper Type: <u>STEEL</u> Reinforced on outside corners: Yes <input checked="" type="checkbox"/> No Bumper Finish: <u>CHROME</u>	\$ <u>179</u>
D.	Paint: 1. Polyurethane paint equal to DuPont Imron 5000, "Bright White", applied following manufacture's procedures to include: 2. Color top coat, 2 coats, applied to all non-stainless steel components following manufactures procedures. 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal.	Make: <u>DUPONT</u> Type: <u>IMRON</u> Color: <u>WHITE</u>	\$ <u>570</u>
E.	Engine Accessibility: 1. Engine fully accessible and serviceable, 2. Cab shall tilt forward for access 3. Tilt shall be by easily operated momentary switch and 12v DC electric pump located on right side of vehicle.	<input checked="" type="checkbox"/> Yes No	\$ <u>570</u>
F.	Mirrors: "No Approved Equal" 1. Rear view mirrors Moto Mirror Model 7-5400 "Fiat Back Traditional" 7" x 16" motor head, remote, heated, stainless steel left and right mounted on the cab. 2. Convex 8" stainless steel mirrors mounted under primary mirrors. 3. A right hand down mirror shall also be provided to cover front and side blind spot for shorter drivers under 5'-6" tall.	Make: <u>MOTO MIRROR</u> Model: _____ Overall mirror full extended width: <u>110</u> inches Overall mirror width with left side mirror folded in: <u>162</u> inches Make: <u>42076</u> Model: _____	\$ <u>425</u> \$ <u>300</u>

Formal Proposal No. 7032: CONFIGURATION #2:
 REAR LOADER REFUSE TRUCKS
 Ref # 12-080, 12-081, 12-082
 QTY 3

	4. Overall cab width including mirrors 112" maximum.		
G.	Splash/Spray Suppression: 1. Spray suppression skirting, Fleet Engineering Inc. 4" brush filament P/N 997-70174, black polyethylene. (800.333.7890) 2. Local distributor: Fleetpride 7725 Dahlia St Commerce City CO (303.288.1166) 3. Skirting shall be installed on the front steer axle wheel housing to reduce road spray from being thrown up onto the truck's rearview mirrors.	Brand: <u>FLEET PRIDE</u> P/N: <u>997-70174</u> Yes No	\$ <u>175</u>

VEHICLE SUB TOTAL COST	\$ <u>135,966</u>
MANUFACTURER/ DEALER DISCOUNT (as applicable)	< \$ <u> </u> >
NET CAB AND CHASSIS PRICE	\$ 135,966

Corrected / Reduced Price: ~~\$135,545~~

\$136,545

4.0 Dealer Provided Optional Equipment

4.1 Electrical Systems:

- A. All non-factory wire connections (splices, connectors, etc.) shall be soldered and shrink tube insulated with adhesive/meltable sealant, thick wall polyolefin shrink tubing (3M EPS-300 or equal). No non-factory crimp connections allowed. No cutting or splicing into the factory wiring harnesses allowed.
- B. All accessories (strobe lights, operator controls, light bar, etc.) shall be wired through a 12-vDC constant-duty solenoid and controlled by bus bar mounted and permanently labeled auto-resetting circuit breakers. The solenoid shall be wired to the key switch.
- C. All dealer/vendor installed items, which require connecting into the vehicle's electrical system shall be done using an OEM factory modified wiring kit whenever possible.
- D. All non-factory wiring shall be encased in a totally sealed wiring harness (no plastic split loom) to prevent corrosion from magnesium chloride. The wiring harness shall be well secured to the truck with neoprene aircraft stainless steel tubing clamps. Rubber grommets shall be used at all areas where the wiring passes through areas that could damage the wiring. Unprotected wiring in any application is unacceptable.
- E. Electrical cables and wiring harnesses shall be neatly run and clamped with neoprene aircraft stainless steel tubing clamps. Clamp spacing shall not exceed 18-inches.
- F. Dielectric grease shall be applied to all electrical plug terminals and connections to reduce corrosion.

4.2 Fasteners:

- A. Grade 5 (SAE or USS) or 8.8 (metric) minimum, bolts, nuts, washers minimum. Vendor shall use Grade 8 or 10.9 for all critical areas or where good engineering practice suggests.
- B. All fasteners shall be zinc plated to prevent corrosion.
- C. Anti-Seize: all fasteners shall have Fel Pro C5A Anti-Seize compound applied before assembly to prevent corrosion, rusting, galling and aid in equipment servicing and repair.
- D. All fasteners shall be of appropriate length, diameter and strength (grade) for the application.
- E. Bolts and screws shall extend a minimum of 1-1/2 threads beyond the nut and maximum of 6 threads past the nut.
- F. Flat washers shall be used under bolt heads and nuts.
- G. Lock nuts (nylon insert, metal, slotted, castle nuts) shall be used lock-washers are not acceptable.

4.3 Hydraulic Systems:

- A. All hydraulic circuits shall be pressure relief protected.
- B. Hydraulic hoses shall be Parker ST 451 (tight bend radius) 2-wire braid hose meeting SAE-100R17 specifications where the hose meets operational criteria or approved equal.
- C. Hydraulic hoses shall have swivel fittings on both ends. Hose ends shall be located to facilitate easy component replacement.
- D. High-pressure hydraulic hose shall not be used for suction lines.
- E. Close/tight radius 90° elbow fittings shall not be used if short, medium or long drop steel stem 90° elbow fittings can be used. Over use of 90° elbows shall not be permitted.
- F. Hydraulic hoses and rigid lines shall be run parallel where possible; routing shall look neat and well planned.
- G. Rubber cushioned metal hydraulic clamps shall be used on all hydraulic ridged lines and hoses at proper intervals for supporting the line/hose 36" maximum distance. Clamps shall be securely mounted to the equipment.

- H. Hydraulic hoses and lines shall not be routed near exhaust, close to rotating components or over, around or through sharp edges. . Rubber grommets shall be used at all areas where the hydraulic lines through areas that could damage the lines.
- I. Galvanized fittings and thread tape shall not be used.
- J. Hydraulic hoses shall be covered with protective spiral nylon anti-chaffing wrap or sock type protective sleeves at all areas where chafing/rubbing could cause premature wear/failure.
- K. Hydraulic oil tanks shall magnetic drain plug, oil level and temperature gauge.
- L. Hydraulic hoses over 4' long shall be labeled on both ends for easy identification.
- M. Shut off valves ¼-turn on each side of filter.

4.4 All fabricated parts, brackets etc. shall have all sharp corners, edges etc. radiused or rounded for safety.

4.5 Welds:

- A. All welds shall meet AWS (American Welding Society) standards for the type weld, material joined and welding method.
- B. Weld joints shall have proper design and fit for the application.
- C. Welds joints shall have proper penetration and be smooth in appearance with no undercuts or overlaps at edge of weld.
- D. Weld joints shall be properly prepared with cut ends ground to remove all slag, create a smooth surface and beveled end.

4.6 Rear Loader Body or (Approved Equal)

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	Manufacturer Qualifications: 1. Units shall be completely assembled, mounted and ready for operation. Parts not detailed shall be constructed in accordance with the best standard practice of the industry at the time of construction. 2. Only new models in current production, which are catalogued by the manufacturer and for which printed literature and specifications are available, will be accepted. 3. The loader body shall be the product of a manufacturer actively engaged in the production of rear loading refuse collection vehicles of this size and capacity as specified. 4. The City will consider only those bidders who can demonstrate that a minimum of 100 units have been manufactured and have been in use for (1) year. 5. Name (s) of users and contact personnel shall be supplied with bid. 6. All accessories not specifically mentioned herein, but necessary to furnish a complete unit ready for use shall also be included.	Yes No Yes No Yes No Yes No Yes No Yes No	\$ _____

<p>B. A current year, new rear loader refuse truck of at least 25 cubic yard capacity, Heil Dura-Pack 5000-25 heavy-duty commercial package or approved equal, installed with the following equipment:</p>	<p>Make: <u>HEIL 5000</u> Model: <u>DURA PACK</u> Capacity: <u>25</u> yds³</p>	<p>\$ <u>56,975.</u></p>
<p>C. Vendor shall within 45 days of contract award submit drawings to the City showing the placement of all major components to include but not be limited to: front/rear bumpers, air filter, exhaust system with trap, air dryer, air tanks, fuel tank, battery box, daily fluid checks/fills, rear riding steps and hand holds, rear packer body controls, hydraulic tank, hydraulic valves, electrical junction box, access doors, tool holders etc.</p>	<p>Provide specs: <u>COMPLY</u></p>	
<p>D. The compactor body shall have: 1. Body capacity 25 cubic yards. 2. Capable of packing 1000-lbs. per cubic yard based on average household refuse. 3. Hopper cycle time 28-seconds. 4. Hopper capacity, 3 cubic yards. 5. Hopper loading height 5" below truck frame. 6. Ejector panel shall fully travel full length of the body to completely eject the compacted load of refuse.</p>	<p>Capacity: <u>25</u> yds³ Packed Capacity per Yard³: <u>1000</u> lbs Hopper Cycle Time: <u>17-19</u> Seconds Hopper Capacity: <u>3.94</u> yds³ Hopper Loading Height: <u>5</u> in <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ _____</p>
<p>E. The compactor body shall be: 1. Installed with 7" clearance from the exhaust or air intake system. 2. Body width shall not exceed 96-inches. 3. Body length, 22'-6". 4. Body height above frame rails, 96" maximum. 5. The body shall be mounted on steel runners (wood not permitted). 6. Body shall be designed/constructed to withstand repeated maximum packing pressures without distortion. The vertical channel bracing must interconnect with roof channels to form a wrap-around channel design. All welds shall be continuous. 7. Body sides, top, 8-gauge hi-tensile 80,000-psi steel. 8. Body floor, 3/16" hi-tensile 80,000-psi steel with 3/8" hi-tensile 80,000-psi steel rear ramp. 9. Floor smooth no trough, 5/16" 150,000-psi steel. 10. Hopper floor 5/8" 150,000-psi hi-tensile abrasion resistant steel. 11. Hopper sides lower 3/16" 150,000-psi steel. 12. Main floor 5/8" 150,000-psi steel. 13. Packer plate, heavy-duty 3/16" 150,000-psi steel. 14. Carrier plates, 3/16" 150,000-psi steel. 15. Carrier plate rotates on 2 heavy-duty forged arms, with tapered roller bearings with easy to access grease fittings. 16. Ejector panel, 3/16" 80,000-psi steel.</p>	<p>Clearance: <u>7</u> in Body Width: <u>96</u> in Body Length: <u>22</u> ft <u>6</u> in Body Height from Ground: <u>96</u> ft <u>0</u> in <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No Thickness: <u>8 GA</u> Steel Strength: <u>80K</u> psi Thickness: <u>3/16"</u> Steel Strength: <u>80K</u> psi Thickness: <u>5/16"</u> Steel Strength: <u>150K</u> psi Thickness: <u>5/8"</u> Steel Strength: <u>150K</u> psi Thickness: <u>3/16"</u> Steel Strength: <u>150K</u> psi Thickness: <u>5/8"</u> Steel Strength: <u>150K</u> psi Thickness: <u>3/16"</u> Steel Strength: <u>150K</u> psi Thickness: <u>3/16"</u> Steel Strength: <u>150K</u> psi <input checked="" type="radio"/> Yes <input type="radio"/> No Thickness: <u>3/16"</u> Steel Strength: <u>80K</u> psi</p>	<p>\$ _____</p> <p><u>#1295.</u></p>

<p>17. Ejector panel shoes shall ride on brass or ultra-high-molecular-weight (UHMW) polyethylene shoes. The shoes shall be replaceable without removing the ejector panel.</p> <p>18. Full exterior continuous body welds.</p> <p>19. Access door 30" x 30" located on street side front hinged with turn handle lock.</p> <p>20. Tailgate lock automatic locking.</p> <p>21. Tailgate seal 1-piece rubber seal with tensile strength of 1500-psi. The seal shall extend across the bottom and up the sides to prevent leakage.</p> <p>22. Tailgate props (one per side) to hold tailgate in open position.</p> <p>23. Tailgate top sheet if required shall be 2-piece polyethylene, color "white" secured with quick release (no tools required) fasteners.</p>	<p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No Size: <u>30" x 30"</u></p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>695.-</u></p> <p>\$ <u>3,183.-</u></p> <p>\$ _____</p> <p>\$ _____</p>
<p>F. Rear Riding Support Handles shall be:</p> <p>1. Located in positions that allow riders of various sizes and physical statures to comfortable and safely ride on the rear steps. The location and design shall be mutually agreed upon at installation</p> <p>2. Handle design shall not interfere with rear operator controls.</p> <p>3. Handle diameter shall be 1-1/4" diameter to allow for good grip.</p> <p>4. Handles shall have durable deep knurled non-slip grip surface and powder epoxy painted "Safety Yellow".</p> <p>5. Handles shall be easily replaceable bolt-on design with safety wired or tack welded to prevent loosening.</p>	<p><input checked="" type="radio"/> Yes No</p> <p>Size: <u>1.1/4"</u> in</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>505.-</u></p>
<p>G. Rear Riding Step:</p> <p>1. Rear riding step, meeting American National Standard Z245.1-1999 shall be provided.</p> <p>2. Width 8" x 36" long approximate extending to rear of hopper.</p> <p>3. Material steel, open grate grip-strut material.</p>	<p><input checked="" type="radio"/> Yes No</p> <p>Size: <u>9 x 36</u> in</p> <p>Make: <u>GRIP STRUT</u> Model: <u>GRIP GALVANIZED</u></p>	<p>\$ _____</p>
<p>H. Toolbox,</p> <p>1. Mounted underneath right side body,</p> <p>2. Size 36" long x 18" high x 18" deep.</p> <p>3. The door shall be side-mounted bottom hinged.</p> <p>4. The box shall have a flush mount latch/lock assemble.</p>	<p>Location: <u>BASED ON CNG TANKS</u></p> <p>Size: <u>36" x 18" x 18"</u></p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p>	<p>\$ <u>460.-</u></p>
<p>I. Hydraulic System: "Operate at Standard Low Idle".</p> <p>1. Hydraulic pump(s) PTO "hot shift" driven thru a Chelsea 890 series direct drive off the transmission. The gear pump(s) shall have an automatic pump oil bypass system in normal bypass mode when the hydraulic system is not energized.</p>	<p>Pump Make: <u>CHELSEA</u> Model: <u>890</u></p> <p>Mounting Location: <u>TRANSMISSION</u></p> <p><u>OPERATE @ IDLE ARE VANE PUMPS OR PISTON PUMPS</u></p>	<p>\$ <u>4240.-</u></p>

OPTIONAL \$ 5,925. ADD

~~DONT OPERATE AT IDLE~~

Front Mount Engine PTO

<p>2. Hydraulic system shall be Parker Hannifin Corporation designed and certified and use as many as possible Parker components to assure compatibility of the system and 3 year Parker warranty for using a complete Parker system.</p> <p>3. Hydraulic system shall operate all hydraulic functions at engine low idle speed (750 rpm) and shall not require shifting transmission out of "Drive" gear or applying "Parking" brake. System hydraulic pressure and flow shall not increase above low idle speed, which could encourage an operator to increase engine rpm to try to increase hydraulic performance.</p> <p>4. Hydraulic pump performance, sufficient pressure and volume at low idle rpm to produce one cycle of the compactor blade at 75% load in less than 12-seconds.</p> <p>5. Operating pressure, 2,500 psig maximum.</p> <p>6. Hydraulic valves shall have LED lights on valve coils to aid in troubleshooting the system.</p> <p>7. The hydraulic pump suction line shall be:</p> <ul style="list-style-type: none"> a Steel tubing with hydraulic hose sections at both the pump and tank end for vibration isolation. b The suction line shall be routed for maximum ground clearance and damage protection. c Hose swivel ends shall be used on all connections. <p>8. Hydraulic Cylinders shall:</p> <ul style="list-style-type: none"> a. Properly sized to efficiently and continuously perform their function without any cylinder degradation. b. Cylinders shall have industrial hard chrome piston rods. c. Main ram cylinder at the rod end shall have a 4" wide mounting. d. Cylinders shall be fast and easy to remove and replace. <p>9. Hydraulic Reservoir:</p> <ul style="list-style-type: none"> a. Capacity 45-gallons minimum b. Oil level and temperature gauge, c. Suction and pressure shut-off valves d. Magnetic drain plug. e. Bung for Future Hydraulic Oil Pre-heater System <ul style="list-style-type: none"> 1) Possible future installation bung for an Arctic Fox Hydra Liner H-4000 hydraulic fluid warmer. 2) Tank bung shall be schedule 80 2" NPT female thread coupling. 3) Bung shall be welded to 0.250" thick 8" dia steel tank reinforcing ring. 	<p>Make: <u>PARKER</u> Model: <u>HANNIFAN</u></p> <p>3 YR. NOT AVAILABLE</p> <p>Pump Operating Speed: <u>750</u> rpm Pump Output: <u>3</u> gpm @ <u>1000</u> rpm <u>2500 PSI</u></p> <p><input checked="" type="radio"/> Yes No</p> <p>Operating Pressure: <u>2500</u> psi LED Coil Lights: Yes <input checked="" type="radio"/> No</p> <p>Material: <u>RUBBER</u></p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p>Hydraulic Reservoir Size: <u>45</u> gallons</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ <u>250.</u></p>
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<p>4) The bottom edge of the tread section of the bung and hydraulic oil pre-heater shall be 1 1/2" off the bottom of the tank.</p> <p>5) The baffles shall be suitable to accept a 24" long heater element and provide a 1" clearance all the way around the element.</p> <p>10. Hydraulic oil shall be ISO Grade 32 multi-viscosity with a -40°F pour point.</p> <p>11. Hydraulic filtration, return line replaceable 10-micron with bypass mode indicator light, easy to access for replacement. Suction strainer 100-micron.</p> <p>12. Hydraulic system shall maintain oil temperature at no more than 90°F above ambient temperature.</p> <p>13. Hydraulic system test ports shall be provided for each circuit. Test port connections shall be compatible with the Parker Hannifin PD type connector.</p> <p>14. All hydraulic hoses and tubing shall be neatly routed, shielded and secured/supported to prevent chaffing under truck.</p> <p>15. All hydraulic hoses shall be Parker series ST 451 extra-high-abrasion resistant hoses to reduce hose failure from hose cover damage. Hydraulic hoses shall have swivel ends on each end.</p> <p>16. Pump protection, protected from 5-mph impact. Pump and protection shall not extend any more than 12" in front of the bumper. Bumpers shall be as close as practical at outer corners of the vehicle to reduce wall-to-wall turning diameter yet still offer good body protection.</p> <p>17. A hydraulic oil recirculation filter system connection system shall be provided with the following:</p> <p>a. The suction and return tubes shall be 1" ID and be installed on the tank top side on each tank end (cross flow) approximately 4" inside the end caps and extending to within 1/4" off the tank bottom at the lowest point.</p> <p>b. The hydraulic connections shall be 1" Parker FF male (flat face) fittings and orientated so they face to the inside (each other).</p> <p>c. The suction and return lines shall be 1" ID with a 60° cut on the bottom to assure adequate hydraulic oil flow.</p> <p>d. The suction and return lines shall be interchangeable in use so it does not matter which hydraulic tank fitting the filter system suction and return lines are connected to.</p>	<p>Return Line Filter Rating: <u>5 MICRON RETURN</u></p> <p>Suction Strainer Size: <u>100</u></p> <p><u>HIGH PRESSURE FILTER KIT (\$770. - OPTIONAL)</u></p> <p>Make: <u>PARKER</u> Model: <u>HANNIFIN PD</u></p> <p><u>REQUESTED ON OTHER TRUCKS IN SOLID WASTE BUT NOT THIS ONE.</u></p> <p>Make: <u>PARKER</u> Type: <u>ST451</u> \$ _____</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No \$ _____</p> <p>Tubing Size: <u>2"</u> inches <u>SUCTION</u></p> <p>Distance of Tank Bottom: <u>4</u> inches</p> <p>Make: <u>PARKER</u> Type: <u>FF</u></p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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J.	<p>Service Hoist System:</p> <ol style="list-style-type: none"> The service hoist lift system shall provide excellent access to truck components located under the trash body The service hoist system shall lift the front of the body up above the truck frame rail approximately 36" minimum for access The hoist system shall be powered by a 12vDC hydraulic pump with sufficient power to raise a fully loaded trash body. The system shall use hydraulic oil from the main hydraulic oil tank. A trash body anti-lowering safety pins or legs shall be provided: <ol style="list-style-type: none"> The pin/legs shall lock the trash body preventing lowering of the body. The pin/legs shall be sufficient to support 3X's the fully loaded weight of the body incase truck maintenance is required and the trash load cannot be ejected Pin storage in a sleeve, that the pin cannot fall/vibrate etc. out of shall be provided. The pin shall be attached to the hoist/trash body/chassis with chain/cable to prevent loss. Safety legs shall rest in a saddle to prevent bouncing around. 	<p>Yes <input checked="" type="radio"/> No</p> <p>Lift Height @ front: _____ inches</p> <p>Yes No NOT AVAILABLE</p> <p>Yes No ON A REAR</p> <p>Yes No LOADER</p> <p>Safety Factor: _____</p>	<p>\$ _____</p> <p>\$ _____</p>
K.	<p>Electrical:</p> <ol style="list-style-type: none"> All remote electrical inter face connections shall be terminated on stud-type terminal strips or with plug type connectors in a waterproof junction box. Connectors/wires shall be permanently and individually labeled. Electrical schematics shall be affixed inside the cover of the junction box. Dielectric grease shall be applied to all terminals and connectors to prevent corrosion if connector is not waterproof. 	<p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
L.	<p>Packer Controls:</p> <ol style="list-style-type: none"> Located on forward street side of the body: <ol style="list-style-type: none"> Engine speed control. Tailgate lock/unlock control. Tailgate raise control. Ejection control. Packer controls located on curbside of body tailgate: <ol style="list-style-type: none"> Packer controls shall not interfere with rider and shall not pose a catching or snagging of loose clothing possibility. Packing control shall not interfere with rider. Buzzer driver signal, push button on each side of tailgate. 	<p>Location: STREET SIDE</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ _____</p> <p>\$ _____</p>

M.	<p>Vehicle Rear Lights: (No Approved Equals)</p> <ol style="list-style-type: none"> All lights shall be Truck-Lite "Lifetime Warranty" 12vDC, LED type, flush mount, sealed lexan body, grommet insulated with Fit' N Forget multi-pin plugs where possible. Integral Stop/Turn/Tail/ lights mounted in the rear corner post of the dump body model Super 44 P/N 44302R or model 60 P/N 60250R. Third Brake Light use the same used light used for Stop/Turn/Tail light and disable the Turn and Tail light sections. Back up lights Truck-Lite LED, flush mount, sealed lexan body, grommet insulated, multi-pin units model 44 P/N 44206C. Marker lights Truck-Lite LED 3 per side model 10 P/N 10250R or 10250Y or model 30 P/N 30250R or 30250Y. Rear ID bar Truck-Lite LED model 35 P/N 35741R or 35740R. License plate light, Truck-Lite model 15 P/N 15040 Light bar mounted above the hopper for maximum visibility shall contain 2 stop/turn, 2 tail lights, 2 clear seal beam utility lights (separate cab switch) and one license plate light. Work lights Two (2) Hopper mount Signal-Stat 623W Halogen work lights with lighted on dash mounted control switch. Wiring shall be sealed Fit' N Forget modular plug-in type where possible. Lights shall not protrude into rear riders area or be below the hopper in an area 20" in from the outer hopper sides Dielectric grease shall be applied to all plug connections and terminals to prevent corrosion. 	<p>Make: <u>LED</u> Model: <u>TRUCKLITE</u></p> <p>Make: <u>LED</u> Model: _____</p> <p>Make: <u>LED</u> Model: _____</p> <p>Make: <u>LED</u> Model: _____</p> <p>Make: <u>LED</u> Model: _____</p> <p>Make: <u>LED</u> Model: _____</p> <p>Make: <u>LED</u> Model: _____</p> <p><u>SIGNAL STAT</u></p> <p>Make: <u>LED</u> Model: <u>BRIGHT</u></p> <p>Make: _____ Model: _____</p>	<p>\$ <u>1,015.00</u></p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
N.	<p>Warning Alarm:</p> <ol style="list-style-type: none"> Audible when transmission is in reverse or tailgate of body is not fully lowered and locked. 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter. The alarm shall be mounted out of the vehicle's rear wheel splash area. 	<p><input checked="" type="radio"/> Yes No</p> <p>dBa: <u>102</u></p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ _____</p>
O.	<p>Mud Flaps:</p> <ol style="list-style-type: none"> Mud flaps shall be heavy-duty anti-sail type Installed front and rear on rear wheels. 	<p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>450.-</u></p>
P.	<p>Conspicuity Tape:</p> <ol style="list-style-type: none"> DOT-C2 Standard No. 108 reflective conspicuity tape. Tape shall be on both lower sides and rear of the body. Tape shall be applied in symmetrical pattern from middle of panel outward. 	<p>Brand: <u>DOT C2</u> Type: <u>108</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><u>3M</u></p>	<p>\$ <u>65.-</u></p>

Q.	Paint Main Body: 1. Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufactures procedures to include: 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted.	Make: <u>DUPONT</u> Type: <u>IMRON</u> Color: <u>WHITE</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ _____
R.	Special Tailgate Paint: 1. Polyurethane paint equal to DuPont Imron 5000,; a. Top ½ of tailgate "Bright White", b. Lower ½ of tailgate and packer panel solid "Safety Yellow" 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted.	Color: <u>WHITE</u> Color: <u>YELLOW</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>1050.</u>

Refuse Body Equipment SUB TOTAL COST \$ 70,183.00

4.7 Sundries Equipment

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	Flashing Warning Light with brush guard: 1. Whelen IONSMC -Wide Angle LED color (Amber) safety lights (4 required). 2. The 4 strobe lights shall be vertically (2 per side) mounted in the rear body light bar panel. 3. The power switch (switch body behind dash) shall be-mounted in an easy to access location. The control switch shall be installed in an easy to see and access position, but not in a location that interferes or could interfere with the driver or passenger during operation or while entering and exiting the vehicle.	Make: <u>WHELEN</u> Model: <u>IONSMC</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>980.-</u>
B.	Driver Height Warning Sign 1. Installed on truck dash providing the travel height of the vehicle. 2. Sign shall be in 1" "white" block letters.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ _____
C.	Tool holders, 1. Three shovel/broom holders mounted on curb side of body. 2. Location to be mutually agreed upon at installation.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>210.-</u>
D.	Sign Boards, Two body mounted Roadway Displays Inc. (909.587.0207) mobile display systems shall be provided to include: 1. Frame model SS315955 95-1/2" long x 31-1/2" high x 2-1/4" frame width with .025" aluminum backing. 2. Frame material, 6463-T6 aluminum extrusions with satin anodize. 3. Sign panel size 93-3/16" x 29-3/16" x .060" high impact styrene. View size 91" x 27". 4. Sign frame shall be securely mounted to body yet be easy to remove and replace.	Brand: <u>ROADWAY</u> <input checked="" type="radio"/> Yes No	\$ <u>2475.-</u>
Sundries Equipment SUB TOTAL COST			\$ <u>3,665.-</u>

4.8 Complete Vehicle Sub Total Cost:

COMPLETE VEHICLE SUB TOTAL COST Refuse Body + Sundries	<u>\$ 73,848.⁰⁰</u>
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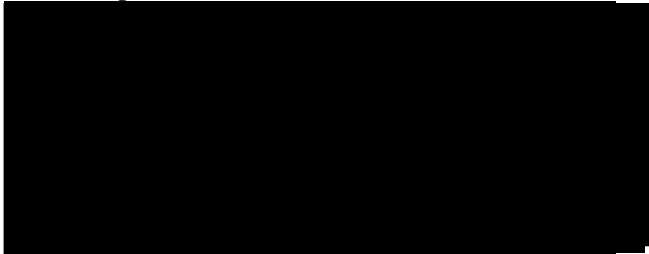
~~Voluntary Discount: < - \$750 > = \$73,098~~

4.9 Optional Equipment

Do not include Optional Equipment in the total price of the vehicle; however an equipment price must be provided. The City will determine if the equipment is to be purchased.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

A.	Description of Equipment	Offered Equipment	Cost
	CNG Fuel System: Engine Option: 1. Cummins ISL-G, 8.9 liter, VGT turbocharged natural gas engine, rated at 320 hp @ 2,000 rpm, torque 1,000 lb/ft @ 1,300 rpm, 2,200 rpm governed 2. The CNG engine shall meet all required EPA on-highway emissions standards 3. Fuel Tank: a Fuel tank shall meet or exceed 1) NFPA 52 standards 2) US-DOT/FMVSS304 3) ISO 11439 b Tank Manufacturer c Tank Information 1) Tank Construction Type: composite 2) Service Life Years: 20 years 3) Recertification Period: 8 years 4) Type of Recertification Inspection Required 5) Tank Service Pressure Full: 3,600 psig @ 70°F (21°C) 6) Each CNG fuel tank shall have a ¼-turn ball stainless steel shutoff valve mounted at the tank inlet.	Make: <u>Cummins</u> Model: <u>ISL-G</u> HP: <u>320</u> @ <u>2200</u> rpm Torque: <u>1100</u> @ <u>1300</u> rpm <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Make: _____ Model: _____ Material: _____ Service Life: _____ yrs Recertification: _____ yrs Inspection Type: _____ Service Pressure: _____ psig Yes No	\$ <u>2500</u> \$ _____ \$ _____ \$ _____ \$ _____ \$ _____

<p>4. Tank Installation Location:</p> <p>a The CNG tank mounting location shall be mutually agreed upon by the vendor and the City prior to the ordering of the cab and chassis. The vendor shall provide drawing of proposed CNG tank location(s). The locations shall not increase the truck wheelbase or the overall height of the truck and body 12" - 6" or body length over a regular non-CNG configuration.</p>	<p>CNG Tank (s) Location: <u>FRAME MOUNT</u> OR ON BULK AHEAD NAT EXTENDING WHEEL BASE</p>	<p>\$ <u>34750</u></p>
<p>1) Tank Size: provide diameter x length 2) Tank Weight each: Empty 3) Quantity of Tanks for 75 gallon DGE 4) Weight All Tanks: Empty 5) Weight All Tanks: Full CNG 6) Tank Enclosure Width, Length, Height 7) Tank Enclosure Material: Steel/Gauge</p>	<p>Size: _____ dia x _____ long DEG Net _____ gal Tank Weight: _____ lbs # of Tanks: <u>75</u> DEG Net _____ gal Weight all tanks and brackets etc: _____ lbs Weight All Tanks Full CNG: _____ lbs Enclosure Size: _____ x _____ x _____ Material: _____ Gauge: _____</p>	<p>\$ _____</p>
<p>b Tank Mounting:</p>	<p><u>AS PER AGILITY</u></p>	<p>\$ _____</p>
<p>1) </p> <p>2) </p>	<p>Frame Size: _____ x _____ x _____</p>	<p>\$ _____</p>
<p>c The primary tank relief valve (PRD) shall be vented up and away from the vehicle and any ignition sources. The vent shall be protected from rain or vehicle wash water from entering the vent line. The vent line shall be 1/2" diameter minimum.</p>	<p>PRD Pressure Release: _____ psig</p>	<p>\$ _____</p>
<p>5. CNG Pressure Reducing Regulator System:</p>	<p>Yes No</p>	<p>\$ _____</p>
<p>a The pressure reducing regulator system shall be mounted inside a protective steel enclosure no more than 6 ft from the CNG fuel tank.</p>	<p>Tubing Size: _____</p>	<p>\$ _____</p>
<p>b From the CNG fuel tank to the regulator the tubing shall be 1/2" od x 0.049" wall 300 series stainless steel minimum.</p>	<p>Yes No</p>	<p>\$ _____</p>
<p>c The pressure reducing regulator system shall have 2 pressure</p>	<p>Tubing Size: _____ x _____ Type: _____</p>	<p>\$ _____</p>

<p>gauges installed in the system.</p> <p>1) High Pressure gauge 0-to-5,000 psi installed on tank side to show tank system pressure.</p> <p>2) Low pressure gauge 0-to-250 psi to show engine downstream fuel delivery pressure to the engine.</p> <p>3) Gauges shall be stainless steel glycerin filled.</p> <p>d The engine coolant flow to the pressure reducing regulator shall be minimum of 1 gallon/minute of 180°F coolant per 50 hp of engine output. For coolant flow the heat exchanger for the engine shall be rated at 450 hp to cover engine rating increases after the truck is delivered.</p> <p>e Engine coolant flow and CNG fuel supply shall enter the regulator on the same side of the regulator.</p> <p>f Coolant ports shall be oriented vertical (up) in horizontal regulators to prevent air from becoming trapped in the regulator.</p> <p>g The pressure reducing regulator shall not under any circumstance be installed in series with the truck cab heater system.</p> <p>6. Automatic Fuel Shut Off:</p> <p>a The automatic fuel shut off valve shall be plumbed directly to the exit/warm side of the engine coolant heated pressure reducing regulator.</p> <p>b The automatic fuel shut off valve shall have its weight supported by a mounting bracket.</p> <p>c The automatic fuel valve shall have a Cv of 2.0 minimum to assure adequate fuel flow.</p> <p>d The automatic fuel shut off shall be a NC (normally closed) valve when the ignition is in "Off" position.</p> <p>7. Fuel Lines:</p> <p>a All high pressure shall be 1/2" od x 0.049" wall stainless steel 316L tubing appropriate for the application.</p> <p>b Stainless steel lines shall have thermal expansion/contraction loops for smaller diameter lines and S-bend expansion joints for larger diameter lines.</p> <p>c All CNG lines shall be supported with stainless steel rubber bushed aircraft P-type clamps. The maximum distance between clamps shall no more than 24".</p> <p>d Fitting for the CNG fuel system shall be:</p> <p>1) Stainless steel tube fittings shall be Swagelok or Parker A-</p>	<p>Pressure Range: <u>0</u> to <u>5000</u> psi</p> <p>Pressure Range: <u>0</u> to <u>250</u> psi</p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p>Valve Cv: _____</p> <p><input checked="" type="radio"/> Yes No</p> <p>Make: <u>1/2"</u> Type: <u>316L</u></p> <p><input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No</p> <p>Make: <u>Swagelok</u> Type: _____</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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<p>lok with thread sealant.</p> <p>2) Special NPTF pipe fittings shall be stainless steel with thread sealant.</p> <p>e All NPT fitting shall be installed on male pipe threads using proper thread sealants.</p> <p>1) Thread sealant and anti-seize shall be a nickel impregnated or nickel coated Teflon tape.</p> <p>2) Teflon tape shall start at 2nd thread.</p> <p>3) On 1/2" and under use 2 wraps of tape</p> <p>4) On 5/8" to 1" use 3 wraps of tape.</p> <p>5) Assure last section of tape is pulled down tight against the threads.</p> <p>6) Do not use sealant on compression threads</p> <p>f Post heat exchanger hoses and lines may be Parker 929 heavy-wall PTFE hose exceeding SAE100R14A or stainless steel tubing.</p> <p>8. Fuel Fill System:</p> <p>a The fuel receptacle and fuel fill system shall be rated for both "fast fill" and "slow fill" with a minimum 1/2" od x 0.049" wall 300 series stainless steel.</p> <p>b The fuel fill nozzle:</p> <p>1) Shall be a male NGV1 OPW with rubber protective cover boot</p> <p>2) Fill location on the driver's side of the vehicle</p> <p>3) The fuel filler line shall be plumbed to the CNG tank bank.</p> <p>c The tank fill enclosure shall have:</p> <p>1) A high pressure line/tank pressure gauge 0-to-5,000 psi</p> <p>2) A low pressure fuel to engine pressure gauge 0-to-250 psi</p> <p>3) An OPW male NGV1 fuel fill receptacle with easy access and excellent clearance for both "fast fill" and "slow fill" receptacles.</p> <p>4) An emergency 1/4-turn shut off valve for shutting down the system in case of a fueling emergency.</p> <p>d The fuel fill access shall be easy to access and easy for the operator to see for fueling and to prevent drive-off with fuel hose attached.</p> <p>e The fill receptacle shall have an easy to remove/reinstall fuel fill cover to protect the fill port from contamination during truck operation.</p>	<p>Yes No</p> <p>Yes No</p> <p>Sealant Type: _____</p> <p>Make: _____ Type: _____</p> <p>Yes No</p> <p>Tubing Size: _____</p> <p>Make: _____ Model: _____</p> <p>Fill Location: _____</p> <p>Yes No</p> <p>Pressure Range: _____ to _____ psi</p> <p>Pressure Range: _____ to _____ psi</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
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	<p>9. CNG Filtration:</p> <p>a High pressure, on the fuel tank(s) fill line to clean the CNG before it enters the fuel tank storage system.</p> <p>b Low Pressure, on the downstream "low pressure" post regulator engine delivery side. The "low pressure" filter shall be a Fleetguard spin-on NG5900 with liquid drain or approved equal.</p> <p>10. Fuel Gauge:</p> <p>a An electric fuel gauge shall be provided with easy to see vehicle dash gauge to show fuel tank volume.</p> <p>b The fuel sender shall be a sealed unit mounted to the high-pressure tank system</p> <p>c A sealed 3-pin Weatherpak connector with a 1-amp fast blow automotive fuse shall connect the sender to the gauge.</p> <p>d Pins are:</p> <p>1) Red = power</p> <p>2) Green = signal</p> <p>3) Black = ground</p>	<p>Make: _____ Model: _____</p> <p>Make: _____ Model: _____</p> <p>Fuel Gauge Type: _____</p> <p>Make: _____ Model: _____</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
B.	<p>Cab Heater:</p> <p>1. The cabin heater shall be a Webasto Air Top 2000ST.</p> <p>2. Heat Value 3,100 to 7,000 Btu/hour</p> <p>3. Air Flow 37 cfm</p> <p>4. Size: 12 ¼' x 4 ¾" x 5" approximate</p> <p>5. Electrical 12vDC @1.2 amps</p> <p>6. Diesel Fuel Usage 0.03 to 0.06 gallons/hour</p>	<p>Make: <u>WEBASTO</u> Model: <u>AIRTOP 2000</u></p> <p>Btu's: <u>7000</u> /hr</p> <p>Air Flow: <u>37</u> cfm</p> <p>Size: <u>12 1/4</u> x <u>4 3/4</u> x <u>5</u></p> <p>Fuel Usage: <u>.03</u> gal/hr</p>	<p>\$ <u>991</u></p>
C.	<p>Hydraulic Oil and Engine Coolant Heater:</p> <p>1. Heater for hydraulic oil and engine coolant shall be a Wabasto Thermo 90ST</p> <p>2. Heat Value 6,100 to 26,000 Btu/hour</p> <p>3. Water Flow 7.3 gallons/minute @ 2.2 psi</p> <p>4. Size: 15 ¾" x 7 ½" x 14" approximate</p> <p>5. Electrical 12vDC @ 3 amps</p> <p>6. Diesel Fuel Usage 0.06 to 0.24gallons/hour</p> <p>7. Hydraulic oil heater Arctic Fox H-4000 series maximum length for hydraulic tank. Baffle may need to have pass-thru opening</p>	<p>Make: <u>WEBASTO</u> Model: <u>Thermo 90</u></p> <p>Btu's: <u>7000</u> /hr</p> <p>Water Flow: <u>7.3</u> gpm</p> <p>Size: <u>15 3/4</u> x <u>7 1/2</u> x <u>14</u></p> <p>Fuel Usage: <u>.06</u> gal/hr</p> <p>Make: <u>Arctic Fox</u> Model: <u>H 4000</u></p> <p>Length: _____</p>	<p>\$ <u>2950</u></p>
D.	<p>Spare Tire and Wheel:</p> <p>1. Tire and wheel assembly: 1 per vehicle.</p> <p>2. Tire: Michelin XZY-3, Steer Tire.</p> <p>3. Wheel: Size 22.5" x 9", disc, 10-hole, hub piloted type, single nut, meeting ISO Standard 4107. "White" powder epoxy coated finish.</p>	<p>Make: <u>Michelin</u> Model: <u>XZY3</u></p> <p>Make: <u>Accuride</u> Model: <u>22.5x9</u></p>	<p>\$ <u>1250</u></p>

<p>E. Remote High-Quality Color Safety 2 Camera System:</p> <p>1. Cameras (2 required) color, ECCO Gemineye K7000Q system with camera view selection on the TV monitor face (No Approved Equal:</p> <p>a. Rear of vehicle mounted camera wired into vehicle reverse circuit to automatically turn on when vehicle is shifted into reverse:</p> <p>b. Right side camera (cab mounted) to serve as an auxiliary right rear view mirror function (blind spot view) to augment the right rear view mirrors.</p> <p>1) The camera shall be normally ON viewing the right side of the vehicle and blind spot.</p> <p>2) It shall automatically switch to rear of vehicle view when the transmission reverse gear function is activated.</p> <p>3) An over-ride to keep the right side camera on shall be provided for special situation use.</p> <p>4) Camera shall be as small as possible and have a guard that will protect the camera and wiring from tree branch damage and road spray/splash.</p> <p>5) The exact location of the camera and approval of the camera protection shall be mutually agreed upon at installation</p> <p>2. Camera color ECCO model C2001 with automatic shutter (2) required:</p> <p>a. Camera shall be in water proof cast aluminum housing. Housing shall be able to be pressure washed when washing vehicle.</p> <p>b. Camera shall have built in safety audio system that will pick up and broad cast normal conversation to monitor.</p> <p>c. Camera shall be automatically heated for cold weather operation.</p> <p>d. Resolution 380 TV lines horizontal.</p> <p>e. Signal to noise ratio 44dB minimum.</p> <p>3. Monitor LCD, 7" flat screen, ECCO model M7000Q with:</p> <p>a. Monitor shall be in a very easy to see location that requires as little as possible head movement and also with a little as possible front windshield obstruction. The monitor location shall be mutually agreed upon.</p> <p>b. Camera view selection switches on the TV monitor.</p> <p>c. Day night sensor</p> <p>d. Resolution 270,000 pixels or better.</p>	<p>Make: <u>ECCO</u> Model: <u>K7000Q</u></p> <p><input checked="" type="radio"/> Yes No Camera Price Required</p> <p><input checked="" type="radio"/> Yes No Camera Price Required</p> <p>Make: <u>ECCO</u> Model: <u>C2001</u></p> <p>Quantity: _____</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>Resolution: <u>380</u> lines</p> <p>Make: <u>ECCO</u> Model: <u>M7000Q</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>3250</u></p> <p>_____</p> <p>\$ _____</p> <p>\$ _____</p>
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<p>e. Picture control to include brightness, contrast and image. f. Speaker system to broadcast sound from camera. g. Picture shall be crisp and clear at all times. h. Anti-glare sun shield and hood. i. Swivel mounting bracket. j. Dimmer switch to adjust for day and night viewing. k. Monitor capable of accommodating 3 cameras.</p> <p>4. All wiring shall be totally sealed with sealed locking connections to prevent corrosion. 5. All wiring shall be routed to prevent damage to the wiring. 6. Warranty 3 years with repairs done by replacement of failed components notification shipped UPS "Next Day" upon notification of problem.</p>	<p>Yes No Pixels: _____ Yes No Yes No Yes No Make: _____ Model: _____ Yes No Yes No Yes No Yes No Yes No Warranty: _____ years Yes No</p>	<p>\$ _____ \$ _____</p>
<p>F. Spare Tire and Wheel: 1. Tire and wheel assembly: 1 per vehicle. 2. Tire: Michelin XZUS, Steer Tire. 3. Wheel: Size 22.5" x 9", disc, 10-hole, hub piloted type, single nut, meeting ISO Standard 4107. "White" powder epoxy coated finish.</p>	<p>Make: <u>Michelin</u> Model: <u>XZUS</u> Make: <u>Accuride</u> Model: <u>22.5x9</u></p>	<p>\$ <u>1280</u></p>
<p>G. Inspection Trip: 1. The City and County of Denver reserves the right to inspect at the body fabricating plant the first (1st) article prior to paint and delivery. 2. Where the fabricating plant is located further than 200 road-miles from the City and County of Denver, the bidder shall include in the bid price all travel expenses to the fabrication plant for the inspection. 3. The City may select to send from 2 representatives to inspect the 1st article. The provided costs shall be based on one (1) person per day and the City will determine how many representatives the inspection will require and how many days the inspection will require. 4. Inspection Trip Costs to include: a. Air fare per person: b. Surface transportation costs: <u>DAYS</u> c. Lodging per person per day: d. Meals per person per day:</p>	<p>Provide information: Distance to fabrication plant: <u>1325</u> miles Plant Location: <u>FT. PAYNE, AL</u></p> <p>Air Fare: \$ <u>650</u>, Airline: <u>FRONTIER</u> Surface Transportation: \$ <u>250</u>, Mode: <u>2</u> Lodging / day: \$ <u>130</u>, <u>INW</u> x 2 Hotel: <u>HOLIDAY</u> Meals / day: \$ <u>35</u></p>	<p>\$ <u>650.</u> \$ <u>500.</u> \$ <u>260.</u> \$ <u>35</u></p>

5. Total cost per person for 1st article inspection trip:		\$ <u>1,445.</u>
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Revised Price \$1000 Per Person

5.0 Manuals/Equipment

Item	Description of Equipment	Offered Equipment	Cost				
Training Video	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment. 1. Cab and chassis. 2. Equipment and Body.	<table border="0"> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	\$ _____
Yes	No						
<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Operators Manual	One per vehicle/equipment with "safe equipment operation" section for each component. 1. Cab and chassis. 2. Equipment and Body.	<table border="0"> <tr> <td>Yes</td> <td>No</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	Yes	No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	\$ <u>65.</u>
Yes	No						
<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Service/Maintenance Manual	Two complete sets per Contract (not per vehicle); binder required, Shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments.	<u>YES</u>	\$ _____				
Service/Maintenance Manual on CD rom or DVD	One complete set; per Contract (not per vehicle) 1. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. 2. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.	<u>YES</u>	\$ _____				
Parts Manual	Two complete sets, per Contract (not per vehicle) binders required, illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.	<u>YES</u>	\$ _____				

Parts Manual on CD rom or DVD	One complete set, per Contract (not per vehicle) illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.	CD	\$ _____
New Equipment Check-in Form:	The successful vendor shall complete the City's "New Equipment Check-in Form" completely and accurately with all requested information.		\$ _____

5.1 Operator and Mechanics Training

Item	Description of Equipment	Offered Equipment	Cost
On Site Equipment Manufacturers Training	On site the vendor shall insure that the equipment manufacturers training representative, after delivery of the equipment Contacts Fleet Maintenances training manager to coordinate equipment training.	FACTORY	\$ <u>2150.</u>
Fleet Maintenance Training Manager	Charlie Pletcher, Telephone: 720.865.3951 Contact time: 8:00 am to 3:00 pm M-F		
Training Requirements	Training shall consist of factory training materials, classroom and actual field training on the equipment for the equipment operators and supervisors.	YES	\$ _____
On Site Mechanics Training	On site mechanics training shall be 2 classes, approximately 8 hours, 2 shifts total provided at City facilities. The training shall cover maintenance and service procedures, trouble shooting and use of manuals.	YES	\$ _____

5.2 Repair Parts Delivery

Repair Parts delivery	
A.	Indicate any and all current Master Purchase Order Agreement(s) (MPO) between the City and the Proposing vendor and sub-vendor(s): Each City MPO contains 9 characters: For Example: 0120A0110, 0667A0108, and etcetera. • • • •
B.	If no agreement(s) exist- is vendor willing to propose on future City bids in relation to parts/ components for the manufacture equipment proposed herein. Yes No- If no explain:

6.0 Warranty

6.1 Warranty Requirement

TABLE 1

WARRANTY (CLASS 7 THROUGH CLASS 8 VEHICLES)		Complies (Y or N/A)
A.	Express warranty is to be a minimum of twelve (12) months on the vehicle/equipment. The standard factory warranty plan shall be provided as an attachment to your bid proposal	Y
B.	The Warranty is to include, at no cost to the City of Denver, all parts and labor, and no charge for work performed at the vendors facility	Y
C.	Warranty shall start when the City places the vehicle into service NOT on the delivery date. Taking an exception may make bid non compliant.	Y
D.	Warranty plans shall consist of the total unit and be broken out to a separate plan for each warranty item if applicable, such as engine warranty plan, transmission warranty plan, electrical, etc	Y
E.	Options listed shall be bid and provided as factory installed under the terms of the full factory-backed warranty. This includes, but is not limited to: air conditioning, radios, cruise control, bumpers, towing packages etc. Dealer-installed options will not be permitted unless pre-approved by the City in writing and, where applicable, indicated on bid sheet as a "dealer installed" non-factory item.	Y
F.	Bidder will be responsible for warranty repair of all installed options/auxiliary equipment included in the bid that has a standard warranty that is less than the standard warranty for the base vehicle/equipment	Y

Reference Nos: 12-080, 12-081, 12-082

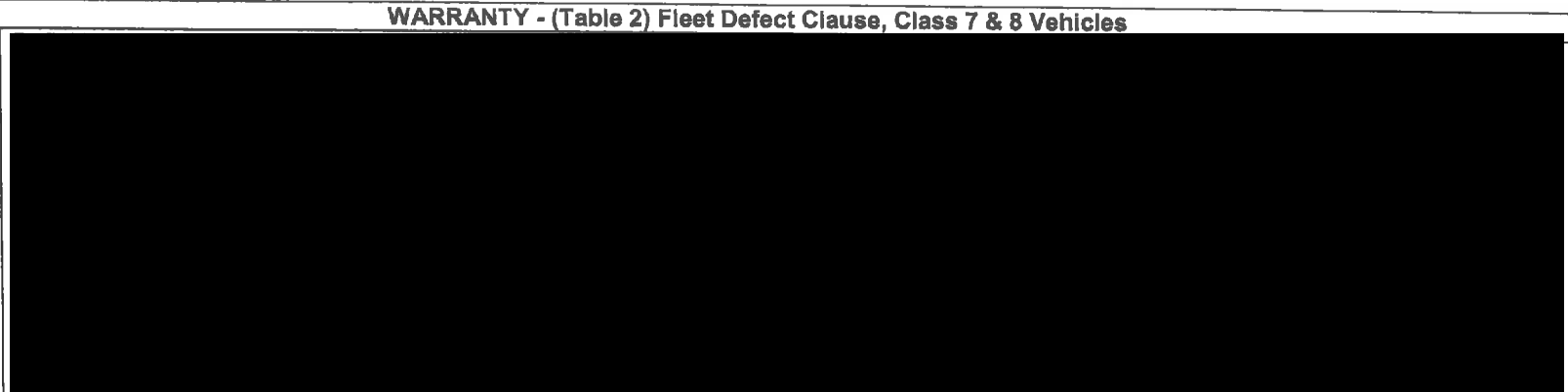

KOIS CO 1-800-344-0638
 BROTHERS MT (S) 1-800-652-4164
 EQUIPMENT CO. MT (N) 1-800-823-5647
 U.S. 1-800-672-6010
 COLORADO, WYOMING, MONTANA
 CCB_Q01_RUSH TRUCK_EXHIBIT_REAR LOADER

G.	Bidder shall use a single, local factory authorized dealership that will accomplish or coordinate required warranty work. The dealership must have a minimum of 1-year experience as a factory authorized vendor for like equipment being bid. Warranty parts shall be available and supplied within 24 hours	Y
H.	If applicable, bidder shall provide a plan for the City to be reimbursed if the work can be done by the City on site. The current shop rate is \$71.00/hour, not to exceed \$85.00/hour. (Enter a response of N/A if not available)	Y
I.	The bidder shall respond to request for warranty assistance within twenty-four (24) hours.	Y
J.	Warranty work shall be accomplished within an appropriate length of time (generally less than 3 working days for everything other than major component repair such as a transmission rebuild) and shall be coordinated with an authorized City representative	Y
K.	During the entire warranty period, if the unit requires transportation to a repair facility, the vendor/sub-vendors shall be responsible for all transportation at "NO COST" to the City and County of Denver. This includes transporting the unit back to the City's domicile location after repairs are complete. If an alternate is bid, charges to the City of Denver shall be listed (e.g. mileage, travel, labor, etc.). Even if an alternate is bid, in NO CIRCUMSTANCES will the City and County of Denver be responsible for transporting a unit greater than 25 miles from the center of Denver. For purposes of these warranty provisions, the center of Denver is defined as the City and County Building located on the corner of Colfax and Bannock Street.	Y
L.	The item(s) procured by the City pursuant to this Bid Proposal shall, in addition to being subject to the express warranties referenced above, be subject to all implied warranties arising by operation of law under State of Colorado and federal law, including but not limited to the implied warranty of merchantability and, to the extent applicable, the implied warranty of fitness for a particular purpose arising under the Colorado Uniform Commercial Code, Title 4, Colorado Revised Statutes. The bidder shall in no event attempt to limit or disclaim any of such implied warranties under this Bid Proposal, and any attempt to do so will render the bidder's bid non-responsive under this Bid Proposal.	Y
M.	This warranty in Table 1 and Table 2, is IN ADDITION to factory warranties on the vehicle and components	Y

6.2 Fleet Defects and Lemon Clause:

TABLE 2

WARRANTY - (Table 2) Fleet Defect Clause, Class 7 & 8 Vehicles

A.	
	<p>6. After 24 hours/3 days of consecutive "lost service" of the vehicle/unit due to warranty problems the warranty period shall be extended by the length of lost service time due to warranty problems</p> 
B.	<p>Definition: If during the warranty period, thirty percent (30%) of the total number of units delivered have the same part(s) and/or components failure requiring replacement and/or modifications, caused by defects in Design, Testing, Material, and/or Workmanship, then this "Fleet Defect Clause" goes into effect.</p>
C.	<p>Remedy: Following notification of a Fleet Defect, the vendor shall develop and implement a plan that either reengineers, modifies, or replaces the defective parts/ systems, such that the identified problem is cured and the operation of the vehicle/equipment is not altered. When alterations are required to cure the defect, those alterations that change or modify the original bid specifications must be approved by the City and County of Denver prior to execution. The vendor will pay for all necessary labor and materials to repair, modify, and/or "update" all vehicles/units in this group. The vendor shall also propose a work schedule that is mutually agreed upon by the City of Denver that corrects the fleet deficiency within 30 days or a mutual agreed upon schedule.</p>
D.	<p>Exceptions: Fleet defects will not apply to minor aftermarket accessories specified by the City of Denver and installed per instructions/specifications. Examples include: toolboxes, spotlights, bed-liners, etc.</p>
E.	<p>Mitigation: Should the vendor become non responsive to the City's notification of a Fleet Defect, the City may employ several options. (1) After notifying the vendor in writing of The City's intent to mitigate its circumstances, the City may chose to perform its own warranty work and seek reimbursement for both parts and labor. (2) On major components, such as engine, transmission, air conditioning, etc., the City may chose to have the repairs performed by an authorized dealer and vendor shall reimburse the City for any parts or labor not covered by other warranty.</p>
F.	<p>Outside Metro-Denver: Vendor will pay for all transportation costs if unit(s) must be sent out of the Denver area for repairs. The City and County of Denver reserves the right to inspect unit(s) before returning back to Denver. The City and County of Denver also reserves the right to send at least one employee, without cost to the City, to inspect the repair(s) before unit is released back to the City.</p>

Line 6 now
 applies in
 Section 'C'
 Remedy

G.	Expired Warranties: Units that have mutually agreed upon warranty defects during the warranty period will continue to be repaired until completed. If an on-going remedy continues past the warranty date the repairs will continue under warranty until completed or cease at a time agreed upon by the vendor and City and County of Denver.
----	---

6.3 Warranty Options

TABLE 3

WARRANTY Options		(CLASS 7 THROUGH CLASS 8 VEHICLES)		
Cost of Factory Extended Warranties		Please indicate in the columns below the additional cost of an extended warranty for all applicable components listed in the left hand column.		
		Inc = Included	N/A = Not available	
		Two Years	Three Years	Five Years
A.	Cab and Chassis	1265	2915	N/A
B.	Engine	INC	1150	1350
C.	Transmission	INC	INC	950
D.	Drive Train	N/A	N/A	N/A
E.	Left Side Operator Controls	N/A	N/A	N/A
F.	Suspension	471	N/A	N/A
G.	Air Conditioning	495	655	N/A
H.	Hydraulics a. Pumps b. Cylinders c. Tanks d. Valves e. Controls			
I.	Attached Body			
J.	Electrical Components			
K.	Operator Controls			
L.	Other			
Notes:				

G. **Expired Warranties:** Units that have mutually agreed upon warranty defects during the warranty period will continue to be repaired until completed. If an on-going remedy continues past the warranty date the repairs will continue under warranty until completed or cease at a time agreed upon by the vendor and City and County of Denver.

6.3 Warranty Options

TABLE 3

WARRANTY Options		(CLASS 7 THROUGH CLASS 8 VEHICLES)		
		Please indicate in the columns below the additional cost of an extended warranty for all applicable components listed in the left hand column.		
Cost of Factory Extended Warranties		Inc = Included	N/A = Not available	
		Two Years	Three Years	Five Years
A.	Cab and Chassis	NA	NA	
B.	Engine			
C.	Transmission			
D.	Drive Train			
E.	Left Side Operator Controls			
F.	Suspension			
G.	Air Conditioning			
H.	Hydraulics			
	a. Pumps			
	b. Cylinders			\$3,945.00
	c. Tanks			
	d. Valves			
	e. Controls			
I.	Attached Body	NA	NA	
J.	Electrical Components			NA
K.	Operator Controls			
L.	Other			
Notes:				

6.4 **Warranty Service Locations:** Warranty repair parts and service shall be available locally at an established factory authorized dealership meeting requirements of Table 1 Section 7.

Vehicle:	Dealership Name: <u>RUSH TRUCK CENTER</u>	Telephone #: <u>303-675-014</u>
	Street Address: <u>5165 VASQUEZ BLVD</u>	City: <u>DENVER CO</u>
Trash Body:	Dealership Name: <u>KOIS</u> CO 1-800-344-0638	_____
	Street Address: <u>BROTHERS</u> MT (S) 1-800-652-4164	_____
	<u>EQUIPMENT CO.</u> MT (N) 1-800-823-5647	_____
Sundries:	Dealership Name: <u>EQUIPMENT CO.</u> U.S. 1-800-672-6010	_____
	Street Address: <u>COLORADO, WYOMING, MONTANA</u>	_____

KOIS CO 1-800-344-0638
BROTHERS MT (S) 1-800-652-4164
EQUIPMENT CO. MT (N) 1-800-823-5647
U.S. 1-800-672-6010
COLORADO, WYOMING, MONTANA

7.0 Heavy Duty Vehicle Delivery Documentation:

Delivery Documentation (GVWR 26,001-Lbs and Above Heavy Duty)	
A.	Vehicles ordered under this specification shall be complete and delivered to CITY AND COUNTY OF DENVER, Fleet Management Division. All prices quoted must be quoted at a firm price F.O.B. Denver, Colorado, 5440 Roslyn St. Building C.
B.	<p>Vendor shall supply at acceptance and delivery of vehicle.</p> <ol style="list-style-type: none"> 1. Bill of Sale (aka invoice, buyers order) 2. Original MSO (Manufacturers Statement of Origin) 3. Application for Title and/or Registration, Colorado Dept of Revenue form DR2395 (02-22-11) 4. Odometer Disclosure Statement, Colorado Dept of Revenue form DR2407 (09-07-05) 5. Letter of Certification on Vendor Letterhead (Required for Incomplete Vehicles) with added bodies etc, describes the final configuration of the vehicle) 6. Air Brake inspection form required for any vehicle with air brakes or truck units capable of towing trailers greater than 10,000-Lbs 7. Standard Sales Tax Receipt. 8. DOT inspection form. 9. Temporary License Plate. 10. New Equipment Check-in Form/ Vendor Supplied Information on the Vehicle. Form provided by Fleet contact Dolores @ 720.865.3903 11. Copy of City Purchase Order. 12. All Keys ordered for the Vehicle and Sundries, i.e. toolboxes etc. 13. All Manuals repair, parts, owners and/or CD's/DVD's etc 14. Vehicle Warranty information and receipt for optional warranty. 15. Receipts and Warranty information for vendor Installed/supplied components (lift gates, snowplows, lighting equipment etc)
C.	<p>For an "Incomplete Vehicle" (cab & chassis) add the following:</p> <ol style="list-style-type: none"> 16. Verification of Vehicle Identification Number (VIN), Colorado Dept. of Revenue form DR2087. 17. Statement of Fact for Incomplete vehicles with added bodies etc, describes the final configuration of the vehicle. 18. Original weight slip.
D.	<p>Delivery: Monday through Friday between 8:00 am and 1:00 pm. Location: CITY AND COUNTY OF DENVER Fleet Management 5440 Roslyn St. Building C Denver, CO 80216 Contact person to coordinate delivery: Dolores Gallegos at (720) 865-3900 ext. 03 or direct line (720) 865-3903.</p>

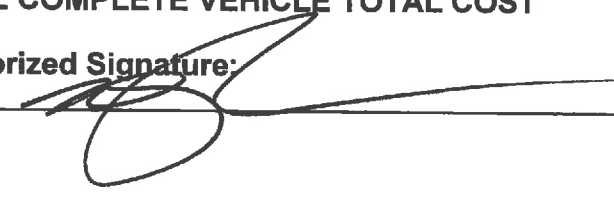
8.0 Vehicle Delivery
8.1 Delivery of Cab and Chassis to Body Vendor

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF CAB AND CHASSIS AFTER PURCHASE ORDER IS ISSUED TO BODY VENDOR	<u>160</u> DAYS
--	-----------------

8.2 Delivery of Completed Truck with Body Installed to City and County of Denver

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF COMPLETE VEHICLE AFTER CAB AND CHASSIS IS DELIVERED	<u>120</u> DAYS
--	-----------------

9.0 Complete Vehicle Cost

Include: <input type="checkbox"/> Cab & Chassis Total Cost <input type="checkbox"/> Rear Loader Body Total Cost <input type="checkbox"/> Sundries Items Total Cost Do Not Include: <input type="checkbox"/> Optional Equipment <input type="checkbox"/> Warranty Cost (s) <input type="checkbox"/> Manual Cost (s)	ONE COMPLETE VEHICLE TOTAL COST Authorized Signature: 	\$ 209,914.00
---	---	--------------------------


s:\bid information\bids one time\7032e refuse trucks- side and rear loader\12-080 to 082 rear loader sw.docx

UPDATED PER MARKET ADJUSTMENT (DRMC)20-64 (A1)
 CAB AND CHASSIS: \$136,545
 HEIL REAR LOADER BODY: \$70,183
 SUNDRIES: \$3,665
 SPARE WHEEL AND TIRE: \$1,250
 ECCO CAMERA SYSTEM: \$3,250
 TOTAL EACH **DIESEL** UNIT: \$214,893

CNG
 +CNG ENGINE: \$2,500
 +CNG SYSTEM: \$34,750
 TOTAL EACH **CNG** UNIT: \$252,143

Reference Nos: **12-080, 12-081, 12-082**

CCD_LOI_RUSH TRUCK_EXHIBIT_SIDE LOADER

RETURN TO: Department of General Services PURCHASING DIVISION 201 West Colfax Avenue Department 304, 11 th Floor Denver, CO 80202 Phone: (720) 913-8100 FAX: (720) 913-8101	CITY AND COUNTY OF DENVER  DENVER THE MILE HIGH CITY	Department of General Services PURCHASING DIVISION www.denver.gov.org/purchasing Buyer: Michael Romero 720-913-8122
ADRIENNE BEVAVIDEZ MANAGER, GENERAL SERVICES	MICHAEL HANCOCK MAYOR	JAMES P. MCINTYRE DIRECTOR OF PURCHASING

FORMAL PROPOSAL

Formal Proposal No. 7032

REFUSE TRUCKS (SIDE AND REAR LOADER) 66,000 GVWR

SCHEDULE OF EVENTS

• Proposal Issued	November 19, 2012		
• Deadline to Submit Additional Questions	November 28, 2012	2:00 P.M.	Local Time
• Response to Written Questions	November 30, 2012		
• Proposal Due Date	December 7, 2012	3:00 P.M.	Local Time

Vendor offers to furnish to the City and County of Denver the materials, supplies, products or services requested in accordance with the specifications and subject to the Terms and Conditions described herein.

VENDOR SIGN HERE

Company Name: RUSH TRUCK CENTERS / COLORADO INC
11616 Rush Truck Center Denver

By: Michael Russell Regional General Manager
 (Printed or Typed Name)

[Signature]
 (Signature)

Signature constitutes acceptance of all Terms and Conditions listed on this form and all documents attached.

THIS PROPOSAL MUST BE RETURNED IN A SEALED ENVELOPE WITH THE PROPOSAL NUMBER AND PROPOSAL TITLE ON THE ENVELOPE.

KANN

MANUFACTURING CORPORATION

P.O. BOX 400
210 REGENT STREET
GUTTENBERG, IOWA
52052

June 21, 2013

TEL: 563-252-2035
FAX: 563-252-3069
WWW.KANNMFG.COM
kgoedken@kannmfg.com

Walter Tokunaga
Principal Owner
Hardline Equipment
7500 Dahlia St.
Commerce City, CO 80022

Dear Walt,

During our meeting with the City of Denver, the City requested that the Kann Commercial Side Loader carriage be a minimum of 12 inches off the ground whenever the truck is in motion. So in an attempt to satisfy the cities request, Kann has developed an electronic carriage lift option that automatically raises the carriage off the ground by at least 12 inches whenever the carriage mast is sensed in the tucked against the truck home position and the truck is put into gear. Both the home position and in gear conditions must be met in order for this option to work properly. This electronic carriage lift option should be completely transparent to the operator as it will act independently whenever the two required conditions are met.

Since the first four (4) Kann Commercial Side Loader units were quoted to the City of Denver before the option was made available, Kann will provide this option to the first four units at no cost. However, going forward, any additional Kann Commercial Side Loaders ordered by the City of Denver after the initial four units, must have the option added to the order (reference Kann Quote #3288) at a cost of \$670 per unit.

If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

Ken

Kenneth Goedken
General Manager
Kann Manufacturing Corporation
210 Regent Street
PO Box 400
Guttenberg, IA 52052-0400
Office: 563-252-2035
Mobile: 563-880-3005
Email: kgoedken@kannmfg.com
Website: www.kannmfg.com
YouTube: www.youtube.com/user/kdghetts

Working Agreement Addendum
Kann Manufacturing Corporation
Five (5) Year Limited Warranty
City of Denver, Colorado

June 5, 2013

This letter outlines the intent of the working agreement between Kann Manufacturing Corporation and Hardline Equipment to support the City of Denver Colorado and their purchase of Kann Commercial Side Loader bodies:

1. Kann service department will provide Hardline with a recommended list of Kann commercial side load service and repair parts with the expectation that these parts be kept in inventory at the Hardline facility in Fort Lupton, Colorado for the service and repair of the City of Denver commercial side load units.
2. Service and repair parts that are not on the recommended service and repair parts list and inventoried at Hardline will be ordered through the normal Kann service and repair parts ordering system with the shipping priority being assigned as to the urgency of the truck disposition requirement:
 - Priority #1 – Truck Down Repair
 - * Kann will normally ship parts next day within 24 hours depending on availability.
 - Priority #2 – Scheduled Service
 - * Kann will work with Hardline based on the service schedule of the unit.
3. If the City of Denver has a warranted body failure that places the Kann body out of service for an extended period of time (i.e. 10 business days or more from the time Kann Service Department is notified with pictures and documentation of what happened from Hardline), Kann and Hardline will work together to either provide a Kann demonstrator replacement unit or an equivalent unit, at no cost to the City, until the City's unit is placed back into service.
4. The City of Denver and Hardline Equipment agree to use Kann OEM parts and components in the service and repair of the Kann Commercial Side Loader bodies and the failure to do so without receiving explicit consent from Kann before the repair is made could null and void the Kann Warranty Agreement.
5. Kann will provide a serialized truck/build file with the delivery of each Kann unit purchased by the City of Denver.

With the exception of the Kann Extended Limited Warranty and the Working Agreement Addendum, the Kann Standard Warranty Policy applies.

Ken Goedken
General Manager
Kann Manufacturing Corporation

Walt Tokunaga
Principal Owner
Hardline Equipment

Mike Lutz
Manager
Department of Public Works
City of Denver, Colorado

KANN

MANUFACTURING CORPORATION

P.O. BOX 400
210 REGENT STREET
GUTTENBERG, IOWA
52052

TEL: 563-252-2035
FAX: 563-252-3069
WWW.KANNMFG.COM
kgoedken@kannmfg.com

June 5, 2013

Mr. Mike Lutz
City of Denver, Colorado

Kann Manufacturing Corporation Extended Limited Warranty

Subject: Kann Manufacturing Corporation Limited Warranty on Kann Commercial Side Load Body, Model SLEC

Kann Manufacturing Corporation will extend a five (5) year limited warranty on Kann commercial side loader bodies sold to the City of Denver, Colorado, covering labor and materials at no charge for any issues related to Kann design or workmanship of the unit. This limited warranty does not cover any paint, mechanical, electrical or hydraulic damage or malfunction caused by corrosion, wear, neglect or any improper operation or use of the unit. Also, this limited warranty does not in anyway extend or supersede any supplier related warranty or service contract on any purchased or made in hydraulic component, electrical component or assembly used in the manufacture of this unit. Further, this exclusive limited warranty does not cover the chassis, chassis components or in any way extend or supersede the warranty or service contract of the chassis manufacturer.

Ken Goedken
General Manager
Kann Manufacturing Corporation
210 Regent Street
PO Box 400
Guttenberg, IA 52052-0400
Office: 563-252-2035
Mobile: 563-880-3005
Fax: 563-252-3069
Email: kgoedken@kannmfg.com
Website: www.kannmfg.com

Walter Tokunaga
Principal Owner
Hardline Equipment
7500 Dahlia St.
Commerce City, CO 80022
Office: 303-655-0710
Mobile: 303-880-9319
Fax: 303-287-0764
E-Mail: Waltt@HardLineequipment.com
Website: www.HardLineequipment.com

Mike Lutz
Manager
Department of Public Works
City of Denver
2000 W 3rd Ave
Denver, Colorado 80223
Office: 303-446-3402
Fax: 303-446-3547
Email: Mike.Lutz@denvergov.org
Website: www.denvergov.org

Reference Nos. 12-084, 12-086
11-018, 11-019

CITY AND COUNTY OF DENVER
Technical Specifications and Bid Items
For a
Right-Hand Drive Side Loader 32-Yard Refuse Truck

1.0 General Description

A new current model year right-hand drive truck, cab over engine with low entry, cab forward design. Powered by a turbo-charged diesel engine with charge air cooling, a 66,000 GVWR (plate certified) with 32-yard Low Profile side loader body. The side loader shall be capable of efficiently loading from 1 ½ yd³ to 4 yd³ City dumpsters in areas with overhead wires, side obstructions and in inverted alleys which drain to the middle or on level surfaces. Collection operations shall be conducted only from the right side operator's position in narrow City alleys with deep drainage transitions, steep angles at street intersections and overhead obstructions. The truck shall be suitable for a minimum of 6 years service (400 pick ups/day, 5 days/week) by Solid Waste Management in two different trash pick up modes: 1) automated dumpster loading of residential waste materials, 2) automated barrel loading. The truck's dumpster body shall operate at maximum efficiency and speed when the truck engine is at "low idle" approximately 800-rpm or less, revving engine shall not increase speed /efficiency. The truck shall be fully equipped and road ready, easily capable of transporting over the road, into, trash transfer facilities or into landfills a fully packed minimum 32 yard load.

1.1 Standard Factory Equipment

All standard factory equipment shall be included with the vehicle/equipment; no deletions of standard factory equipment will be permitted unless specifically superseded in these specifications. Accessories not specifically mentioned herein but necessary to furnish a complete unit ready for use shall also be included.

1.2 Government Requirements (where applicable)

The vehicle/equipment shall be built to, and perform in accordance with, all the requirements of the latest edition of the following standards and specifications:

- FHWA, Federal Highway Administration
- SAE, Society of Automotive Engineers Specifications
- FMVSS, Federal Motor Vehicle Safety Standards
- DOT, Department of Transportation Regulations
- AWS, American Welding Society Standards
- PUC, Public Utilities Commission (Colorado)
- NFPA National Fire Prevention Association

1.3 Workmanship and Durability

Workmanship throughout the vehicle/equipment shall conform to the highest standards. Durability shall be sufficient to allow safe and efficient operation of the equipment/vehicle.

1.4 Completion of Bid Items and Alternates

Vendor shall complete each line item in "Offered Equipment" and "Cost" columns in the following manner:

- A. Provide vehicle/equipments technical information: in "Offered Equipment" provide technical information as requested and provide cost of item in "Cost" column.
- B. Included Standard Equipment: in "Offered Equipment" column provide technical information as requested for standard equipment in, "Cost" column write NC for "No Charge".
- C. Differences: in "RED" ink in "Offered Equipment" column adjacent to Description of Equipment provide information on the item being offered, in "Cost" column provide cost if there is a bid item cost.
- D. Vendors shall break out and list costs for each specification section. Failure to break out proposed costs may cause proposal to be non-responsive. Breakout costs will be used for comparisons clarifying cost issues and if deletions to the specifications need to be made.

1.5 Major Areas of Concern

	Description of Concern
A.	Right Side Operator Cab Area to include: <ol style="list-style-type: none"> 1. Visibility from the driver's seats (Blind Spots) 2. Steering wheel belly room. 3. Shoulder leg and hip room. 4. Head room. 5. Operator's vision. 6. Floor height and step distances. 7. Ergonomic layout of vehicle and dumpster body controls. 8. Ease and speed of operation of collection and packing functions.
B.	Maneuverability: The ability of the truck to effectively, safely and efficiently maneuver in Denver's tight alleys, transverse alley-to-street drainage depressions and make tight turns either into or out of alleys from narrow high crowned streets with vehicles parked in the streets
C.	Ability to efficiently load: <ol style="list-style-type: none"> 1. Steel standard City 3 yd³ trash dumpsters 2. Plastic barrels 3. Loading width for tight alleys
D.	Mirror width for use in obstructed areas to include: <ol style="list-style-type: none"> 1. Overall extended mirror width. 2. Minimum mirror width. 3. Ability for mirrors to be hit by obstructions (branches etc) and absorb the hit with out damage. 4. Ability for mirrors to be reset or adjusted into position without operator leaving operator's station.

E.	Warranty: 1. Ability and cost to obtain a 5-year warranty on cab and chassis. 2. Ability and cost to obtain a 5-year warranty on side loader body, dumpster pick up elevator, hydraulic pump, motors cylinders and controls. 3. Location of warranty providers.
F.	Service Ability: 1. Ability to easily service cab and chassis items that require regular (yearly or less) servicing and maintenance 2. Ability to easily service dumpster loader body components/items that require regular (yearly or less) adjusting, servicing and maintenance.

2.0 Build Status of Vehicles:

2.1 Contractor and all sub vendors after receipt of the City's purchase order shall:

The primary Contractor (prime vendor) shall be responsible for providing within 15 business days to the City a "Preliminary Build Status Plan" to include but not limited to:

- A. The "Build Status Plan" shall include sufficient detail to assure that the ordered units will meet specifications and be built to the highest quality standards and be delivered on time.
- B. Placement date of initial order with the cab and chassis manufacture.
- C. Cab and chassis manufacturer's date of order acceptance. Written order confirmation is required.
- D. Placement date of initial order with the body manufacture.
- E. Body manufacturer's date of order acceptance. Written order confirmation is required.
- F. Build dates for all cab and chassis to include start date and completion date.
- G. Build dates for all bodies to include start date and completion date.
- H. Delivery date of the cab and chassis to the sub vendor's body manufacturer.
- I. Beginning and completion dates for installation of the body on each cab and chassis.
- J. Ship date for each completed vehicle (cab and chassis with body) from sub vendor's body manufacturer to Denver and which location shipped to.
- K. Contractor and sub vendors local vehicle preparation time.
- L. Delivery of a completed vehicle meeting specifications to the City.

2.2 The Contractor shall contact all sub vendors:

The Contractor shall contact all sub-contractors providing accessories and equipment for the vehicle (s) and provide the sub-contractors with the a list of all accessories and equipment, manufacturer's order confirmation, order number, vehicle specifications, build date and delivery date to dealer from the vehicle manufacturer on the ordered vehicle. It is the primary selling dealer's responsibility to assure that the sub-contractors orders the accessories and equipment and has the items in stock and is prepared to install the accessories and equipment items when the vehicle arrives at the dealership.

3.0 Basic Requirements, or approved equal.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

3.1 Basic Vehicle

	Description of Equipment	Offered Equipment	Cost
A.	Cab over engine, cab forward design with front hinged doors, electric roll up/down windows in tandem axle configuration. 1. Sit-down right side operator controls, 2. Tandem axle 66,000 lb. GVWR (plate certified), 3. Wheelbase approximate 215 inch, 4. Effective (clean) cab to axle approximate 173-inch, 5. After frame 60" 6. Front tire cut angle 50° 7. Wall-to-wall turning diameter 80 ft. 8. Both the cab and chassis and body vendors shall verify wheelbase is appropriate for truck and specified body.	Make: <u>PETERBILT</u> Model: <u>320</u> <u>RIGHT SIDE DRIVE</u> Left Side: Yes No Rating: <u>66,000</u> lbs Wheelbase: <u>215</u> " C to A: <u>173</u> " A F: <u>60</u> " Cut Angle: Left _____ ° Right _____ ° Turn Dia. : Left <u>73.8</u> ft Right <u>79.4</u> ft	\$ <u>112,232</u>
B.	The right side operator configuration is very important for operator comfort and efficiency. The operator position shall accommodate operators of various physical sizes providing good visibility, steering wheel/belly clearance, and shoulder width room. Also all the controls for operating the attached equipment shall be in an ergonomic layout/configuration that promotes minimal operator movement, operator comfort and operation efficiency.	<u>RIGHT SIDE OPERATIONS</u>	\$ <u>699</u>
C.	Frame: 1. Rating 66,000-lbs. GVWR minimum, 2. Heavy-duty 120,000-psi full channel heat-treated steel, with main frame 2,086,000 in-lb. RBM and deep frame section 3,235,000 in-lb. minimum.	Frame Rating: <u>66,000</u> -lbs Yield Strength: <u>120,000</u> psi Section Modulus/rail: <u>17.8</u> in ³ Frame RBM/rail: <u>2136,000</u> lbf-in ²	\$ <u>479</u>
D.	All components that require regular servicing shall be easy to access and be located as much as possible to protect the components from road splash. Access to rear engine mounts or transmission removal should not require the removal of electrical wiring, hydraulic hoses, air tanks or air dryers. Air dryer shall be easy and quick to access for servicing.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
E.	Towing Provisions: 1. Tow hooks, two front and two rear, frame mounted. 2. Air brake 3/8" female quick-connect hook up system on vehicle for wrecker air brake connection. Quick-connectors shall be accessible and protected but shall not stick out where they could get damaged. 3. A check valve shall be provided at the vehicles air tank to prevent air loss.	<input checked="" type="radio"/> Yes No Make: _____ Model: _____ <input checked="" type="radio"/> Yes No	\$ <u>350</u>

	Description of Equipment	Offered Equipment	Cost
F.	Keying: 1. Keys keyed alike Ignition, Door, (same) and Toolboxes (same), 2 standard sets per vehicle. 2. Additional 5 key sets 3. If the City has similar make and model trucks in fleet the trucks shall be keyed the same as existing trucks.	Offered Equipment Cost for each additional key set: \$ _____ X 5= \$ _____ <input checked="" type="radio"/> Yes No	No Charge \$ <u>10⁰⁰</u> \$ <u>N/C</u>

3.2 Engine or "Approved Equal"

	Description of Equipment	Offered Equipment	Cost
A.	Engine: Cummins ISX-11.9 liter, VGT turbocharged diesel engine, rated at 330 hp @ 2,100 rpm, torque 1,350 lb/ft @ 1,200 rpm, 2,100 rpm governed includes: 1. Engine shall utilize DEF (diesel exhaust fluid) to meet current EPA regulations and reduce NOx 2. Engines shall be electronically controlled with following components: a. Engine protection system to monitor low oil pressure, high coolant temperature and low coolant level that will prevent component damage with manual over-ride on truck engine: b. Low oil pressure. c. High oil temperature. d. High coolant temperature. e. Low coolant level. f. High transmission oil temperature. g. Idle shutdown timer. h. Speed limiter top gear and cruse. 3. Computer controlled fast idle and PTO protection. 4. Thermos bottle stopper-type dipstick. 5. Magnetic drain plug. 6. Delco-Remy 22-SI, 145 amp alternator. 7. Delco-Remy 42 MT, 12v starter with over-crank protection.	Offered Equipment Make: <u>Cummins</u> Model: <u>ISX-12</u> HP: <u>350</u> @ <u>1800</u> rpm Torque: <u>1350</u> @ <u>1100</u> rpm Emissions Rating: <u>2013</u> <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Make: <u>DACCA</u> Model: <u>160 AMD</u> Make: <u>DACCA</u> Model: <u>12V</u>	Cost \$ <u>5964</u>

B.	<p>Power Take Off (PTO)</p> <ol style="list-style-type: none"> 1. Front mounted off engine crankshaft. 2. Pump control electrically actuated from inside cab. 3. The front bumper shall be: <ol style="list-style-type: none"> a. Stepped/tapered out from the truck body to provide protection to the PTO pump b. Fit close to the truck body outside the frame rails to provide turning clearance in tight locations and body protection. c. The bumper on its outer ends shall be properly reinforced to provide good protection to the truck body 4. PTO speed limiter shall be connected to the engine computer not to an external overspeed box (EOS). 5. PTO shall efficiently operate all hydraulic systems at engine "low idle" 750 rpm or less. Increasing engine speed above 800 rpm shall not improve hydraulic operations. 6. Zerk fitting lubrication on PTO driveshaft shall be orientated so that the U-joints can be easily lubricated from the front of the vehicle with out lifting cab or any other special operations/equipment. 	<p>Make: <u>COMERICAL INTL</u> Model: <u>P76</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p> <p>PTO Idle rpm: _____</p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p> <p>\$ <u>INC</u></p>
C.	<p>Filtration:</p> <ol style="list-style-type: none"> 1. Oil: Fleetguard LF3000 full flow/bypass oil filter. 2. Fuel: Racor 690RP12 fuel/water separator with thermostatically controlled fuel line heater. 	<p>Make: <u>FLEETGUARD</u> Model: <u>LF3000</u></p> <p>Make: <u>DAVCO</u> Model: _____</p>	<p>\$ <u>STD</u></p> <p>\$ <u>172</u></p>
D.	<p>Engine Air Intake:</p> <ol style="list-style-type: none"> 1. The air intake shall be on the far left side of the vehicle at cab height. 2. The air intake shall be positioned so that it can not draw in exhaust gases. 3. Air filter dual element dry type with air inlet restriction indicator located in cab 	<p><input checked="" type="radio"/> Yes No <u>OR RIGHT SIDE</u></p> <p><input checked="" type="radio"/> Yes No</p> <p>Make: <u>FVG</u> Model: <u>16-0619</u></p>	<p>\$ <u>STD</u></p>
E.	<p>Exhaust Meeting 2012 EPA Standards:</p> <ol style="list-style-type: none"> 1. Exhaust discharge shall be on the right side of the vehicle 2. The exhaust after treatment device shall be horizontally mounted above the engine so as to not obstruct maintenance/repairs underneath the truck. 3. Maximum exhaust system height shall not be higher than the highest point on the body or truck. 	<p>Trap Make: <u>CUMMINS</u> Model: <u>D60</u></p> <p>Location: <u>BACK OF CAB</u></p> <p><input checked="" type="radio"/> Yes No</p>	<p>\$ <u>STD</u></p>

	<p>4. Horizontal with a vertical chrome stack and stainless steel exhaust guard that will easily fit up to Denver's exhaust gas evacuation system.</p> <p>5. Exhaust discharge shall be above roofline and exhaust gases shall not discolor the body or be drawn into the operator's cab.</p>	<p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	
F.	<p>Fuel Tank:</p> <p>1. Fuel tank 80 gallons minimum</p> <p>2. The fuel tank shall have a non-slip step in tank</p> <p>3. The tank shall be mounted on left side of chassis to provide step and platform for accessing the body clean-out door.</p>	<p>Size: <u>80</u> gallons</p> <p>Location: <u>LEFT SIDE</u></p>	
G.	<p>Diesel Enhancement Fluid Tank:</p> <p>1. Location behind fuel tank</p> <p>2. Size 6-gallons minimum</p> <p>3. Tank fill opening shall be easily identified as "DEF Fluid Only" and shall not accept the entrance of a standard diesel fuel nozzle.</p>	<p>Location: <u>LEFT SIDE</u></p> <p>DEF Tank Volume: <u>7</u> gallons</p> <p><input checked="" type="radio"/> Yes No</p>	\$ <u>570</u>
H.	<p>Coolant Hoses:</p> <p>1. Gates Blue Stripe hoses</p> <p>2. With constant torque hose clamps.</p>	<p>Make: <u>GATES</u> Model: <u>BLUE STRIPE</u></p> <p><input checked="" type="radio"/> Yes No</p>	\$ <u>570</u>
I.	<p>Fan:</p> <p>1. Horton Drive Master fan clutch with automatic fan control.</p> <p>2. The fan shall operate off of engine coolant and transmission coolant temperature.</p>	<p>Make: <u>HORTON</u> Model: <u>DRIVE MASTER</u></p> <p><input checked="" type="radio"/> Yes No</p>	\$ <u>570</u>
J.	<p>Air System:</p> <p>1. Air compressor Bendix 18.7-cfm Tu-Flo minimum</p> <p>2. Air tanks mounted horizontal inside frame.</p> <p>3. Air drain valves/cables shall be easy to reach and operate</p> <p>4. Air lines shall be color-coded nylon type.</p>	<p>Make: <u>BENDIX</u> Model: <u>18-7</u></p> <p>Capacity: <u>18-7</u> cfm</p> <p>Location: <u>LEFT SIDE</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	\$ <u>570</u>
K.	<p>Cold weather starting aids on truck engine.</p> <p>1. Block heater, Phillips "Zero-Start" 120vAC, 1500 Watt, engine coolant temperature controlled to:</p> <p>a. Turn "on" at 40°F engine coolant temperature.</p> <p>b. Turn "off" at 55°F engine coolant temperature.</p> <p>2. The plug-in station shall have 2 LED indicator lights to:</p> <p>a. Light when plugged into "hot line" to show "hot line is energized.</p> <p>b. Light when engine coolant drops below 40°F.</p>	<p>Make: <u>Phillips</u> Model: <u>ZERO START</u></p> <p>On Temperature: <u>40</u></p> <p>Off Temperature: <u>55</u></p> <p><input checked="" type="radio"/> Yes No</p> <p><input checked="" type="radio"/> Yes No</p>	\$ <u>350</u> \$ <u>100</u>

3. Plug-in shall be mounted next to the driver's door, protected from mechanical and weather damage. Heater plug shall be a male standard grounded 15 amp rated plug. 4. A decal or information plate shall be provided describing how the system functions. The decal/plate shall be heavy-duty UV protected and capable of withstanding pressure washing and other normal vehicle functions. 5. Cold weather starting assist (no either allowed).	Location: <u>DRIVERS DOOR</u>	\$ <u>INCL</u>
	<input checked="" type="radio"/> No	\$ <u>INCL</u>
	Type: _____	\$ <u>N/A</u>

3.3 Transmission and Drivetrain

Description of Equipment	Offered Equipment	Cost
A. Transmission: Transmission shall be an Allison New World HD4560-RDS-P, wide ratio, set up for 5-speeds with the following components: 1. Transmission and rear differential gearing shall be optimized for "Best" fuel economy. 2. The shift point calibrations both primary and secondary shall be factory S-1 set for reducing the shift point below maximum governed speed but the engine shall not drop below the peak torque point. On engines with 2,100 rpm full-load governed speed the shift point is reduced 200 rpm. For engines with higher or lower full-load governed speeds the shift point will need to be determined on a case-by-case basis. 3. Transmission interface wiring for Allison MD/HD transmission. 4. Electric push-button transmission controls shall be located on the "dog house" not under the joystick armrest. Location to be mutually agreed upon. 5. TranSynd TES 295 automatic transmission fluid. 6. Allison High-Capacity filters for extended drain interval 7. Transmission water-to-oil cooler. 8. Remote mounted transmission filter. 9. Magnetic drain plug.	Make: <u>ALLISON</u> Model: <u>4500 RDS P</u> Speeds: <u>5</u> <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No <input checked="" type="radio"/> No	\$ <u>9051</u> \$ <u>INCL</u>
B. Automatic Work Brake Hold Activated with: 1. Service brake automatically applies when the lift arm is activated. 2. Manually very easy to access button or switch.	<input checked="" type="radio"/> No <input checked="" type="radio"/> No	\$ <u>443</u>

C.	<p>Rear Axles:</p> <ol style="list-style-type: none"> Eaton single reduction, capacity 46,000-lbs. Driver controlled main power divider locking differential. Oil pump. Axle temperature sensor. Axle ratio for best fuel economy with an approximate 60-mph top speed. Oil seals, Union 76 Triton EP 75W-90 synthetic gear lubricant. Magnetic drain plug. 	<p>Make: <u>DANA SPICER</u> Model: <u>D96-170</u> Gear ratio: <u>4.36</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Top Speed: <u>60</u> mph level <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>570</u></p>
D.	<p>Front Axle:</p> <ol style="list-style-type: none"> Eaton, capacity 20,000-lbs. minimum with oil seals and Union 76 Triton EP 75W-90 synthetic gear lubricant. 	<p>Make: <u>DANA SPICER</u> Model: <u>D2000F</u> Capacity: <u>20,000 #</u></p>	<p>\$ <u>570</u></p>
E.	<p>Springs:</p> <ol style="list-style-type: none"> Front leaf with graphite impregnated spring pin bushings. Front: capacity 20,000-lbs. minimum. Rear Hendrickson HMX-460 Haulmaxx varirate spring system. Rear: capacity 46,000-lbs. minimum. 	<p>Make: <u>PACCAR</u> Model: <u>20,000</u> Capacity: <u>20,000</u> - lbs Make: <u>HENDRICKSON</u> Model: <u>HAULMAXX HMX 460</u> Capacity: <u>46,000</u> - lbs</p>	<p>\$ <u>570</u> \$ <u>962</u></p>
F.	<p>Brakes:</p> <ol style="list-style-type: none"> Bendix, 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads. Bendix, 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads. Brake chambers type 2824, size 24 chamber. 	<p>Front Make: <u>BENDIX</u> Model: <u>ADB22X</u> Disc Size: <u>17</u> in Rear Make: <u>BENDIX</u> Model: <u>ADB22X</u> Front Chamber: <u>24</u> Rear Chamber: <u>24</u></p>	<p>\$ <u>570</u> \$ <u>570</u> \$ <u>570</u></p>
G.	<p>Anti-Lock Brake System / Automatic Traction Control system:</p> <ol style="list-style-type: none"> Anti-Lock Brake System (ABS): Eaton 6S/6M with ATC, 6-channel with (6 sensors & 6 modulators) and 5-9 psi crack pressure relay valve. Automatic Traction Control (ATC) shall work in conjunction with the Eaton ABS brake system in low traction situations limiting torque to least loaded tire allowing most loaded tire to receive torque and pull the vehicle. The ATC system in conjunction with the Interaxle Driveline Lock shall provide traction control very similar to the Driver Controlled Differential Lock system. Interaxle Driveline Lock (IADL) to lock front and rear drive axles together. The interaxle differential lock shall be automatically locked via the ATC or manually locked by the driver. The IADL switch shall activate a flashing LED warning light. Air lines shall be color-coded nylon type. 	<p>Make: <u>BENDIX</u> Model: <u>6S/6M</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>291</u> \$ <u>132</u> \$ <u>570</u> \$ <u>570</u></p>

H.	Air Dryer, (No Approved Equals) 1. Bendix AD-IP with heated steel reservoir, automatic moisture ejector and cable operated air tank drain valves accessible from outside of vehicle. . 2. Air dryer shall be installed on the outside of the frame rail in a location that is easy access and does not exceed 15-minutes to service unit.	Make: <u>BENDIX</u> Model: <u>AD-15-EP</u> Location: <u>LEFT SIDE</u>	\$ <u>570</u> \$ <u>570</u>
I.	Driveline: 1. Driveshaft 2-piece, Eaton Permalube type U-joints. 2. Driveline shall clear side loader elevator	Make: <u>SPICEL</u> Model: <u>187D</u>	\$ <u>712</u>
J.	Power Steering: 1. TRW with 2-qt. reservoir.	Make: <u>SPICEL</u> Model: <u>50110 DUAL</u> Reservoir Size: <u>2</u>	\$ <u>459</u>

3.4 Electrical System

	Description of Equipment	Offered Equipment	Cost
A.	Alternator: 1. Alternator shall be a heavy duty, internally regulated, output 160-amp minimum.	Make: <u>PACAL</u> Model: <u>160</u> Rating: <u>160</u> amps	\$ <u>22</u>
B.	Batteries: 1. Three Group 31 "maintenance free" batteries with a total CCA of 1950 minimum. 2. Battery location frame mounted left hand side. 3. Battery shut-off switch easy to see and access. 4. Jump start provision easy to access. 5. Battery cables (00) stranded copper minimum.	Make: <u>PACAL</u> Model: <u>12V DUAL</u> Quantity: <u>3</u> CCA's: <u>2100</u> Location: <u>LEFT SIDE</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Cable Size: <u>00</u>	\$ <u>570</u>
C.	Circuit Protection: 1. Circuit breakers with manual reset, no fuses. 2. Circuit breaker panel shall be easy to access. 3. Circuit breaker panel shall be clearly labeled for easy identification.	Type Protection: <u>CIRCUIT BREAKERS</u> <input checked="" type="checkbox"/> Yes No	\$ <u>570</u>
D.	Wiring: 1. Wiring shall be color coded with hot stamped wire numbers. 2. All wiring shall be run in sealed wiring looms to reduce corrosion from magnesium chloride products	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Yes No	\$ <u>570</u>
E.	Body Builders Junction Box: 1. Body builder's junction box shall be mounted behind the cab 2. Terminal shall be marked for easy identification.	Location: <u>BEHIND CAB</u> <input checked="" type="checkbox"/> Yes No	\$ <u>109</u>

	Description of Equipment	Offered Equipment	Cost
F.	Back Up Alarm: 1. Back up alarm 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter. 2. The alarm shall be mounted out of the vehicle's rear wheel splash area.	dBa rating: <u>107</u> <input checked="" type="radio"/> Yes No	\$ <u>26</u>
G.	Cab and Chassis Lights: 1. Halogen sealed beam headlights, 12v. 2. Daytime running lights. 3. Wiring shall be sealed modular plug-in type. 4. Marker lights LED type.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No Type: <u>LED</u>	\$ <u>43</u> \$ <u>570</u>

3.5 **Cooling System**

	Description of Equipment	Offered Equipment	Cost
A.	Cooling system with coolant recovery tank capable of maintaining engine manufacturer's recommended operating temperatures at an elevation of 6,800' in 120° F low humidity ambient conditions shall be provided.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
B.	Coolant protection shall be -34° F. Coolant Type: Nitrite or Poly Organic Acid or ...	Protection Level: <u>34</u> ° _____	\$ <u>570</u>
C.	Fleetguard coolant filter WF2071.	Make: <u>FLEETGUARD</u> Model: <u>WF 2071</u>	\$ <u>570</u>

3.6 Tires and Wheels

	Description of Equipment	Offered Equipment	Cost
A.	Tires: 1. Tires 315/80R22.5, tubeless, 20-ply, load range L. 2. Front: Michelin XZUS, Steer Tires. 3. Rear dual: Michelin XZUS, Steer Tires	Make: <u>Michelin</u> Model: <u>XZUS-2</u> Make: <u>Michelin</u> Model: <u>XZUS-2</u>	\$ <u>1903</u>
B.	Wheels: 1. Disc, 10-hole, Hub piloted type, Single nut, Meets ISO Standard 4107. 2. White powder epoxy coated finish. 3. Front 22.5" x 9". 4. Rear 22.5" x 9"	Make: _____ Model: _____ <input checked="" type="radio"/> Yes <input type="radio"/> No <u>FRONT STEEL</u> <u>REAR ALUMINUM</u> Size: <u>22.5</u> x <u>9</u> Size: <u>22.5</u> x <u>9</u>	\$ <u>1267</u>

3.7 Interior

	Description of Equipment	Offered Equipment	Cost
A.	Right Side Operating Controls: 1. Vehicle operation shall be only from right side of vehicle. 2. Driver's controls shall be ergonomically laid out for maximum driver efficiency in operating the automated collection body. 3. Since the vehicle will be used in automated trash collection (steel dumpster & plastic barrel) with a "operate at idle" hydraulic system and a ergonomic multi-position joystick the transmission shifter location needs to be in a location the driver can easily access but not in the conventional location directly adjacent to the driver where it will be covered by the automated body's joystick control. With an "operate at idle" hydraulic system the driver will not be required to shift the vehicle into "neutral" at each collection and after collection back into "drive" to proceed to next stop. 4. Doors: a. Left and right doors shall be front hinged. b. Left and right doors shall have electric full roll up/down windows.	Location: <u>Right Side</u> Yes _____ No _____ <input checked="" type="radio"/> Yes <input type="radio"/> No Window Type: <u>ELECTRIC</u>	\$ <u>INC</u> \$ <u>INC</u> \$ <u>500</u>

<p>B.</p>	<p>Driver Viewing Environment/Area:</p> <ol style="list-style-type: none"> 1. Requested SAE J1750 and SAE J1050a "Target Evaluation" method operator view area information must be submitted with bid for evaluation. 2. Failure to submit the requested information may make bid non-responsive. 3. Vendor using the "Target Evaluation" method shall provide with bid, top view drawings with dimensions of the visibility values from the operator's seat at eye level for operators of the following percent quartile sizes: <ol style="list-style-type: none"> a. 5th % male height 1554 mm or 61.18" b. 50th % male height 1668 mm or 65.67" c. 95th % male height 1783 mm or 70.20" 4. Drawings shall be on 11" x 17" paper ("B" size drawing paper) for easier reading. 5. Good operator exterior visibility is a major safety concern and increasing operator viewing area and eliminating "blind spots" is beneficial to the City 	<p>Drawings Provided: <input checked="" type="radio"/> Yes No</p> <p>Paper Size: _____ " X _____ "</p>	<p>\$ <u>IMC</u></p>
<p>C.</p>	<p>Required Submittals with Bid:</p> <ol style="list-style-type: none"> 1. Requested information must be submitted with bid for evaluation. Failure to submit the requested information may make bid non-responsive. 2. Vendor shall provide with bid, drawings with dimensions and photographs of the proposed cab interior for review. 3. Interior dimensions measured: <ol style="list-style-type: none"> a. Belly Room: seat back to steering wheel. b. Leg Room: seat front edge to brake pedal. c. Head Room: seat cushion to ceiling. d. Torso Room: Width from door to doghouse or other obstruction. e. Seat fore/aft travel: f. Seat height travel: g. Steering Wheel Knuckle Clearance: distance to closest object h. Floor Height: measured ground to cab floor. i. Cab Step Heights: measured from ground. j. Steering Wheel Tilt and Telescoping: 4. Location of transmission shifter: should not be obstructed by automated barrel loader's joystick. 	<p>Provide Materials: _____</p> <p>Seat full forward: <u>11</u>" Seat full back: <u>18</u>" Seat full forward: <u>6</u>" Seat full back: <u>12</u>" Seat full lowered: <u>43</u>" Seat full raised: <u>38</u>" Smallest measurement: <u>23</u>" Travel: <u>3</u>" Travel: <u>2</u>" Clearance: <u>6</u>" Height: <u>35</u>" 1st Step: <u>15</u>" 2nd Step: <u>26 1/2</u>" Tilt: <u>5</u>^o Telescoping distance: <u>0</u>" <input checked="" type="radio"/> Yes No</p>	

D.	Seats: Drivers seats shall be: 1. Right/driver's seat shall be air suspension Bostrom, high back driver's seat, gray vinyl with cloth insert and armrests. 2. Left/passenger side seat shall be spring suspension Bostrom, mid-back seat, gray vinyl with cloth insert and armrests	Make: <u>PETROBR</u> Model: <u>HI BACK</u> Make: <u>PETROBR</u> Model: <u>MID BACK</u>	\$ <u>152</u>
E.	Engine Cover "Doghouse" 1. The engine cover "doghouse" shall be recessed to accommodate the ergonomic positioning of the automated side loader controls. 2. The vehicle manufacturer shall work with the body supplier to assure that the controls are the most ergonomic possible to assure operator comfort and reduce repetitive motion injuries. 3. The transmission shifter shall not be obstructed by the automated side loader joystick. The transmission shifter should be located in a location convenient to the operator but not directly adjacent to the driver's side. Since the vehicle has "operate at idle" hydraulic system the transmission does not require shifting into and out of "neutral" at each stop. 4. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. 5. The City, body vendor and the vehicle supplier shall mutually determine control locations after Contract award.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>570</u>
F.	Instrumentation: 1. Instrumentation shall include speedometer, engine hourmeter, tachometer, voltmeter, coolant temperature, oil temperature, oil pressure, fuel level and air pressure with low-pressure alarms (light, audible).	<input checked="" type="radio"/> Yes No	\$ <u>INC</u>
G.	Steering: 1. Steering tilt and telescoping easy to adjust, to accommodate operators with large variations in sizes.	Tilt <input checked="" type="radio"/> Yes No Telescoping Yes <input checked="" type="radio"/> No	\$ <u>570</u> \$ <u>N/A</u>
H.	Upfitter's Switch Panel: 1. The vehicle manufacturer shall provide for the automated dumpster and barrel body manufacture an upfitter's switch panel for automated body control switches. 2. The panel location shall be in an ergonomic location and shall not require more than 30° head movement and be within easy reach of driver's of various sizes and physiques. 3. The switch panel shall have permanently labeled and lighted rocker switches for all optional sundries equipment and lights etc.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>INC</u>

I.	Floor Covering: 1. Floor covering shall be heavy-duty black rubber/vinyl flooring.	<input checked="" type="radio"/> Yes No	\$ <u>570</u>
J.	Air Conditioning: 1. Factory installed cab R134A air conditioning 2. Cab shall be insulated to include floor, firewall, roof and walls.	Refrigerant Type: <u>R134</u>	\$ <u>709</u>
K.	Radio: 1. AM/FM stereo with two speakers.	Make: <u>CONCEPT CLASS</u> Model: <u>AM/FM</u>	\$ <u>122</u>
L.	Fire extinguisher: 1. Extinguisher ABC, 5-lb. dry type rechargeable 2. Installed in cab. 3. Location labeled with 1" letters on outside of the cab.	Type: <u>ABC</u>	\$ <u>75</u>
M.	Grab Handles: 1. One each side on exterior of cab for operator and passenger assist and one interior for passenger. 2. Grab handles shall provide adequate clearance to other objects to provide easy access and clearance to prevent pinch or other hazards.	<input checked="" type="radio"/> Yes No <input checked="" type="radio"/> Yes No	\$ <u>570</u>

3.8

Exterior:

	Description of Equipment	Offered Equipment	Cost
A.	Vendor shall provide with bid drawings with dimensions and photographs of the proposed cab exterior including mirrors for review. Failure to submit the requested information may make bid non-responsive.	Provide Materials: _____ _____ _____	\$ <u>JAL</u>
B.	Cab design: 1. Heavy-duty or severe-duty type with steel or aluminum body. 2. High visibility tilt forward design. 3. Front hinged doors. 4. Low floor cab over with steps mounted to body. 5. Maximum step height 15".	Body Rating: <u>REAR56</u> Body Material: <u>ALUMINUM</u> <input checked="" type="radio"/> Yes No Step Height: <u>15</u> in	\$ <u>570</u>
C.	Front Bumper: 1. The front bumper shall be straight and fit as close to the front of the cab as possible with adequate reinforcing to not allow the bumper to be driven back into the cab with minor impacts. 2. The bumper shall be chrome	Bumper Type: <u>STEEL</u> Reinforced on outside corners: Yes <input checked="" type="radio"/> No Bumper Finish: <u>CHROME</u>	\$ <u>174</u> \$ <u>JAL</u>

D.	Paint: 1. Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufactures procedures to include: 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted.	Make: <u>DUPONT</u> Type: <u>IMRON</u> Color: <u>WHITE</u> <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No	\$ <u>570</u>
E.	Engine Accessibility: 1. Engine fully accessible and serviceable, 2. Cab shall tilt forward for access 3. Tilt shall be by easily operated momentary switch and 12v DC electric pump located on right side of vehicle.	<input checked="" type="checkbox"/> No	\$ <u>570</u>
F.	Mirrors: "No Approved Equal" 1. Rear view mirrors Moto Mirror Model 7-5400 "Flat Back Traditional" 7" x 16" motor head, remote, heated, stainless steel left and right mounted on the cab. 2. Convex 8" stainless steel mirrors mounted under primary mirrors. 3. A left hand down mirror shall also be provided to cover front and side blind spot for shorter drivers under 5'-6" tall. 4. Overall cab width including mirrors 112" maximum.	Overall mirror full extended width: <u>110</u> inches Overall mirror width with left side mirror folded in: <u>102</u> inches Make: <u>CASTE</u> Model: _____	\$ <u>425</u> \$ <u>570</u>
G.	Splash/Spray Suppression: 1. Spray suppression skirting, Fleet Engineering Inc. 4" brush filament P/N 997-70174, black polyethylene, (800.333.7890) 2. Local distributor: Fleetpride 7725 Dahlia St Commerce City CO (303.288.1166) 3. Skirting shall be installed on the front steer axle wheel housing to reduce road spray from being thrown up onto the truck's rearview mirrors.	Brand: _____ P/N: _____ <input checked="" type="checkbox"/> No	\$ <u>175</u>

VEHICLE SUB TOTAL COST	\$ <u>137,340</u>
MANUFACTURER/ DEALER DISCOUNT (as applicable)	<-\$ <u>—</u> >
NET CAB AND CHASSIS PRICE	\$ <u>137,340</u>

+Market Adjustment: \$1,000 = \$138,340

4.0 Dealer Provided Optional Equipment

4.1 Electrical Systems:

- A. All non-factory wire connections (splices, connectors, etc.) shall be soldered and shrink tube insulated with adhesive/melttable sealant, thick wall polyolefin shrink tubing (3M EPS-300 or equal). No non-factory crimp connections allowed. No cutting or splicing into the factory wiring harnesses allowed.
- B. All accessories (strobe lights, operator controls, light bar, etc.) shall be wired through a 12-vDC constant-duty solenoid and controlled by bus bar mounted and permanently labeled auto-resetting circuit breakers. The solenoid shall be wired to the key switch.
- C. All dealer/vendor installed items, which require connecting into the vehicle's electrical system shall be done using an OEM factory modified wiring kit whenever possible.
- D. All non-factory wiring shall be encased in a totally sealed wiring harness (no plastic split loom) to prevent corrosion from magnesium chloride. The wiring harness shall be well secured to the truck with neoprene aircraft stainless steel tubing clamps. Rubber grommets shall be used at all areas where the wiring passes through areas that could damage the wiring. Unprotected wiring in any application is unacceptable.
- E. Electrical cables and wiring harnesses shall be neatly run and clamped with neoprene aircraft stainless steel tubing clamps. Clamp spacing shall not exceed 18-inches.
- F. Dielectric grease shall be applied to all electrical plug terminals and connections to reduce corrosion.

4.2 Fasteners:

- A. Grade 5 (SAE or USS) or 8.8 (metric) minimum, bolts, nuts, washers minimum. Vendor shall use Grade 8 or 10.9 for all critical areas or where good engineering practice suggests.
- B. All fasteners shall be zinc plated to prevent corrosion.
- C. Anti-Seize: all fasteners shall have Fel Pro C5A Anti-Seize compound applied before assembly to prevent corrosion, rusting, galling and aid in equipment servicing and repair.
- D. All fasteners shall be of appropriate length, diameter and strength (grade) for the application,
- E. Bolts and screws shall extend a minimum of 1-1/2 threads beyond the nut and maximum of 6 threads past the nut.
- F. Flat washers shall be used under bolt heads and nuts.
- G. Lock nuts (nylon insert, metal, slotted, castle nuts) shall be used lock-washers are not acceptable.

4.3 Hydraulic Systems:

- A. All hydraulic circuits shall be pressure relief protected.
- B. Hydraulic hoses shall be Parker ST 451 (tight bend radius) 2-wire braid hose meeting SAE-100R17 specifications where the hose meets operational criteria or approved equal.
- C. Hydraulic hoses shall have swivel fittings on both ends. Hose ends shall be located to facilitate easy component replacement.
- D. High-pressure hydraulic hose shall not be used for suction lines.
- E. Close/tight radius 90° elbow fittings shall not be used if short, medium or long drop steel stem 90° elbow fittings can be used. Over use of 90° elbows shall not be permitted.
- F. Hydraulic hoses and rigid lines shall be run parallel where possible; routing shall look neat and well planned.

- G. Rubber cushioned metal hydraulic clamps shall be used on all hydraulic ridged lines and hoses at proper intervals for supporting the line/hose 36" maximum distance. Clamps shall be securely mounted to the equipment.
- H. Hydraulic hoses and lines shall not be routed near exhaust, close to rotating components or over, around or through sharp edges. . Rubber grommets shall be used at all areas where the hydraulic lines through areas that could damage the lines.
- I. Galvanized fittings and thread tape shall not be used.
- J. Hydraulic hoses shall be covered with protective spiral nylon anti-chaffing wrap or sock type protective sleeves at all areas where chafing/rubbing could cause premature wear/failure.
- K. Hydraulic oil tanks shall magnetic drain plug, oil level and temperature gauge.
- L. Hydraulic hoses over 4' long shall be labeled on both ends for easy identification.
- M. Shut off valves ¼-turn on each side of filter.

4.4 All fabricated parts, brackets etc. shall have all sharp corners, edges etc. radiused or rounded for safety.

4.5 Welds:

- A. All welds shall meet AWS (American Welding Society) standards for the type weld, material joined and welding method.
- B. Weld joints shall have proper design and fit for the application.
- C. Welds joints shall have proper penetration and be smooth in appearance with no undercuts or overlaps at edge of weld.
- D. Weld joints shall be properly prepared with cut ends ground to remove all slag, create a smooth surface with no porosity and beveled end.
- E. Welds shall be full length to prevent "rust bleed" from non-welded seams.

4.6 **Compactor Side Loader Body or (Approved Equal)**

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	Manufacturer Qualifications: 1. Units shall be completely assembled, mounted and ready for operation. Parts not detailed shall be constructed in accordance with the best standard practice of the industry at the time of construction. 2. Only new models in current production, which are catalogued by the manufacturer and for which printed literature and specifications are available, will be accepted. 3. The loader body shall be the product of a manufacturer actively engaged in the production of automated dumpster side loading refuse collection vehicles of this size and capacity as specified. 4. The City will consider only those bidders who can demonstrate that a minimum of 100 units have been manufactured and have been in use for (1) year. 5. Name (s) of users and contact personnel shall be supplied with bid. 6. All accessories not specifically mentioned herein, but necessary to furnish a complete unit ready for use shall also be included.	X Yes No X Yes No X Yes No X Yes No X Yes No X Yes No	\$ Incl _____
B.	A current year, new low profile right side dumpster/barrel loader refuse body meeting ANSI Z245.1 standards of at least 32 cubic yard capacity, capable of loading 1-1/2 to 4 cu yd dumpsters and 65 gallon to 95 gallon plastic barrels with a maximum width of 102" wide or approved equal, installed with the following equipment:	Make: <u>Kann Manufacturing</u> Model: <u>Curbmaster</u> Capacity: <u>31</u> yds ³ Can Load Dumpsters: X Yes No Can load Plastic 90 gallon Barrels: X Yes No	\$ Exception _____
C.	Vendors shall within 45 days of contract award submit drawings to the City showing that the truck will have no interference problems associated with the placement of all major components to include but not be limited to:, body lift cylinders, front/rear bumpers, air filter, exhaust system, air dryer, air tanks, fuel tank, battery box, daily fluid checks/fills, hopper, hopper cover, elevator, carriage, hydraulic tank, hydraulic valves, steps/ladders, electrical junction box, access doors, tool holders CNG components if CNG option chosen etc.	X Yes No	\$ Incl _____

<p>D.</p>	<p>The Compactor Body shall be:</p> <ol style="list-style-type: none"> 1. Capacity, 32 cu yds including loading hopper. 2. Design, rectangular or round shape mounted length wise on the truck chassis setup for right side elevator loading. 3. Body low profile with height of no more than 12' – 6" total height or 102 ½" above chassis frame rail when lifting attachment is in the upright traveling position. 4. Maximum width of the body and pick up arm in down pick up position shall not exceed 102" width. No portion of the arm shall stick out past the truck or trash body 5. A drawing showing the full sweep for both a standard City 3 yd³ dumpster and 90-gallon plastic barrel shall accompany the bid. Failure to provide an adequate drawing may make the bid non-responsive 6. Material: <ol style="list-style-type: none"> a. Body, 10-gauge high-tensile strength steel minimum. b. Reinforcing ribs, 5 required, 3" x 3" x 3/8" sq steel tubing with following locations: <ol style="list-style-type: none"> 1) At rear of hopper. 2) 3 ribs equally spaced between front and rear rib. 3) At rear of body. c. Floor, 1/4" AR400 hi-tensile steel with reinforced cross members spaced entire length of body. d. Body shall be double thickness directly behind the hopper at the wheel slot switch opening. e. Compaction plate, reinforced with formed cross members so no distortion occurs during operation. Retainer teeth on top and bottom shall retain the compacted refuse. f. Access door, a left access door shall be 28" wide x 30" high with 3" radius rounded corners on left side of body. Shall provide access to hopper area. g. Hopper access top step shall extend across the complete hopper door opening. The steps shall be open non-slip mesh and minimize trash build-up on or directly below the steps. h. Access door-reinforcing rib directly above and below the door running from the reinforcing ring horizontal to forward corner of the body. i. Compaction rail ¼" steel minimum easily replaceable. j. Hopper access, handrail and open tread non-slip step and 	<p>Accurate Data Must Be Provided Hopper Capacity: <u>31</u> yds³</p> <p>Overall Height of Body @ highest point: <u>148"</u></p> <p>Width: <u>96</u> in</p> <p>Steel Type: <u>Hardox 450</u> Body sidewalls: <u>AR 450</u> thickness: <u>1/8 "</u> yield: <u>165,000</u> psi</p> <p>Body floor: Thickness: <u>3/16</u> Steel Type: <u>AR 450</u> Thickness: <u>3/16</u> yield: <u>180,000</u> psi</p> <p>Door Size: <u>NA</u> Corner Radius: <u>NA</u></p> <p>Compaction Rail size: <u>NA</u></p>	<p>\$ <u>Incl</u></p> <p>\$ <u>Incl</u></p> <p>\$ <u>Incl</u></p> <p>\$ <u>Incl</u></p> <p>\$ <u>Incl</u></p> <p>\$ <u>Excp</u></p> <p>\$ <u>Excp</u></p> <p>\$ <u>Incl</u></p> <p>\$ <u>Incl</u></p>
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	<p>ladders shall be provided.</p> <p>k. Hopper opening shall be protected by a three sided windscreen</p> <p>i. Automatic Hopper Cover:</p> <ol style="list-style-type: none"> 1) An automatic opening and closing steel framed with polyethylene/steel hopper cover that opens and closed with each cycle of the elevator or approved equal. 2) The cover elevator shall be mechanically interlocked to prevent dumping into a covered hopper or operating cover with truck in motion. 3) The cover when closed shall be interlocked to prevent packing of trash in the hopper 4) The cover shall prevent trash and debris from being sucked out of the hopper when the truck is in motion. <p>m. Front body opening, 34" x 24" minimum, with 3" rounded corners so driver shall have unrestricted view of packer plate from inside cab.</p>	<p>Describe How Hopper Cover Operates: <u>Loader arms lift and linkage to roof opens door to street side of unit.</u></p> <hr/> <p>Yes <input checked="" type="checkbox"/> No</p> <p>Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p>Yes</p>	<p>\$ Incl _____</p> <p>\$ Incl _____</p>
E.	<p>Retention Teeth (Sharks Teeth):</p> <ol style="list-style-type: none"> 1. Steel trash retention teeth shall be statically located inside the trash body to help prevent compacted materials from dropping back into the hopper area. 2. Teeth shall be heavy gauge triangular shaped steel welded on a 6" spacing to the body. 	<p>Provide specs: <u>3/4 X 2 X 4</u></p> <p>Quantity of Teeth: <u>6</u> Tooth Size: <u>2 x 4</u></p> <p>Tooth Spacing: <u>5.5</u> in</p>	<p>\$ Incl _____</p>
F.	<p>Tailgate:</p> <ol style="list-style-type: none"> 1. Operation, raise and lowered using two hydraulic cylinders, minimum. 2. Hydraulic operated locks at two point's minimum shall secure tailgate door lock. Locks shall automatically actuate when rear door lift cylinders are actuated. 3. Tailgate shall be strong enough not to deform or crack during their useful life. Tailgate shall be reinforced in lower area to prevent deformation from trash. 4. Tailgate hinges shall be reinforced to prevent the hinges spreading. 5. Underride protection, shall be bolt on type, DOT approved. 6. Center mounted Truck Lite LED brake light shall be provided. 7. Whelen Model L360 Super LED 360° beacon with branch guard L360BGB, (1) required shall be mounted on top of tailgate. 	<p>Provide specs: <u>3 Yard, Bubble Type, Top Hinged, 2(Cy)</u></p> <hr/> <p>Tailgate: <u>11 Gauge</u> yield: <u>50,000</u> psi</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p>Make: <u>Whalen</u> Model: <u>L 360</u></p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>

<p>G.</p>	<p>Dumpster Container Loading System:</p> <ol style="list-style-type: none"> 1. Orientation, right or curb side of body. 2. Dumpsters shall be easy to hook and efficiently picked up primarily in Denver's inverted alleys with up to a 6% slope which drain to the middle or on level surfaces 3. Maximum width for the carriage/pick up system in the down (travel or pick up) position shall not exceed 102' or extend past either the truck or trash body 4. The dumpster pick up arm shall be "zero grab" capable, pick up containers at the side of the truck without extending the pick up arm. 5. Performance: <ol style="list-style-type: none"> a. Cycle time 12 seconds, from pick-up through raise, dump, lower, and release. b. Container raise tip angle: container shall not tip, vertical raise is required. c. Maximum height of dumpster/arm at highest point of tip cycle shall not exceed 15'-1". 6. Capacity, 3,000-lbs constant lift. 7. The dumpster sweep arc shall be as low and large of a radius (rounded) as possible to reduce the possibility of the dumpster contacting overhead obstructions (wires etc) during dumping. A drawing showing the full sweep arc for both a standard City 3 yd³ dumpster and 90-gallon plastic barrel shall accompany the bid. The drawing shall show the full sweep of all corners of the dumpster and plastic barrel. Failure to provide an adequate drawing may make the bid non-responsive 8. Loader shall efficiently pick up, dump, and return to ground 1-1/2 to 4 cu yd containers. Operation shall be preformed with out modification to equipment or without operator leaving the cab. 9. Dumpster lift shall be actuated by two hydraulic cylinders and shall raise the carriage to dump position and return to disengage position. 10. Loader movement, <ol style="list-style-type: none"> a. In-out, up-down movement shall be accomplished by three hydraulic cylinders maximum. b. Extension from retracted position 30" minimum in horizontal plane. c. Automatic dumpster hooks locks: 	<p>Pick Up Side: <u>Curbside</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Width: <u>96</u> in Stick out past Body: Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Cycle time: <u>12-16</u> seconds</p> <p><u>45</u> °Tip Angle <u>0</u> inches of Tip Out</p> <p><u>15</u> ft <u>0</u> in Maximum Height</p> <p>Lift Capacity: <u>3000</u> lbs. Sweep arc Radius: <u>na</u> inches</p> <p>Drawing Showing Sweep Radius: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Maximum Extension: <u>32</u> in</p>	<p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p>
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<p>1) On the lift cycle the dumpster hooks shall be automatically and positively locked at an approximate height of 48" above the ground to prevent dumpsters from coming loose on the dump cycle.</p> <p>2) On the return cycle the lock shall automatically unlock at an approximate height of 48" above the ground so the dumpster can be disengaged easily.</p> <p>11. Hydraulic reservoir located on left side in front of left front dual tires.</p> <p>12. The elevator shall use a central easy to access grease manifold for lubricating all the elevator linkages ("dog-bone", lower link and main shaft).</p> <p>1) The grease system shall use rubber covered steel braided hoses with heavy-duty swivel ends or approved equal lines between the manifold and grease fitting.</p> <p>2) The system shall assure that all fittings receive the proper amount of lubrication for maximum longevity.</p> <p>13. The lower grease zerk fittings shall be protected from damage with a guard.</p> <p>14. Grease zerk fittings shall have an "Orange" identifier to make locating lubrication points easier and faster</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Latch Height: <u>48</u> in</p> <p>How Operated: _____</p> <hr/> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Unlatch Height: <u>48</u> in</p> <p>Hydraulic Reservoir Location: <u>Street Side Front of Dual</u></p> <p>Yes <input checked="" type="checkbox"/> No</p> <p>Location: <u>Street side front of body</u></p> <p>Hose Type: <u>1/8" 4000 psi</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>_____</p> <p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p>
<p>H. Plastic Barrel Loading System:</p> <p>1. The plastic barrel pick up system shall be mounted to the lower part of the dumpster system and shall be an automatic operating barrel pick up system.</p> <p>2. The barrel loader system shall efficiently pick up, dump, and return to ground 32, 60, standard City 95 –gallon and 110-gallon plastic containers.</p> <p>3. The pick up arm shall be "zero grab" capable, so it can pick up barrels at the side of the truck without extending the pick up arm.</p> <p>4. Operation shall be preformed from the main dumpster joystick control and without the operator leaving the cab.</p> <p>5. The plastic barrel loader system shall bolt to the lower side of the dumpster carriage. The barrel loader system shall bolt to fully welded mounts on the dumpster carriage.</p> <p>6. The plastic barrel loader arm shall be actuated by hydraulic cylinders for grip and release of the barrel. The raise and lower functions shall use the dumpster lift system.</p> <p>7. Extension from retracted position to center of 95-gallon container shall be 30" minimum same as dumpster carriage.</p>	<p>Mounting Location: <u>Under Carriage</u></p> <hr/> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How Attached: <u>As Specified</u></p> <hr/> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Extension: <u>32</u> in</p>	<p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p> <p>_____</p> <p><u>\$ Incl</u></p>

<p>8. Hydraulic cylinder functions: container grip/release)</p> <p>9. The barrel loader system shall incorporate an interlock to prevent dumping outside of the hopper or releasing the container.</p> <p>10. The barrel loader system shall be designed to prevent spillage and to direct container spillage into the hopper and not on to the ground during dumping.</p> <p>11. The plastic barrel loader system shall be easy to install and remove from the dumpster carriage with quick disconnect hydraulic fittings and easy to access bolts etc. The system shall be able to be removed or installed in less than 30 minutes.</p> <p>12. Hydraulics:</p> <p>a. The hydraulic hoses shall be Parker ST 451 Super Tough (tight bend radius) 2-wire braid hose meeting SAE-100R17 specifications where the hose meets operational criteria or approved equal.</p> <p>b. All hoses must have JIC swivel connections at each end located in such a manner to aid in component replacement</p> <p>c. Hydraulic hose quick disconnects shall be Parker Bruning stainless steel FF series. The hoses shall have the male and female fitting oriented/alternated so mis-coupling can not be made. No approved equals.</p> <p>13. A drawing showing the full sweep arc for both a dumpster and 90-gallon plastic barrel shall accompany the bid. The drawing shall show the sweep of all corners of the dumpster and plastic barrel. Failure to provide an adequate drawing may make the bid non-responsive</p>	<p><input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No</p> <p>Describe: <u>The Cart or cat follow the track up the side and does not allow can to tip until it is flush to hopper entrance</u></p> <hr/> <p><input checked="" type="checkbox"/> Yes No Time to Remove: <u>na</u> min Time to Install: <u>na</u> min</p> <p>Make: <u>Parker</u> Type: <u>451TC</u></p> <p>Yes <input checked="" type="checkbox"/> No Make: <u>na</u> Type <u>na</u></p> <p><input checked="" type="checkbox"/> Yes No</p>	<p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Exception</u></p> <p><u>\$ Incl.</u></p>
<p>I. Packing Mechanism:</p> <p>1. Packer plate shall be actuated by horizontally opposed and crossed telescopic hydraulic cylinders.</p> <p>2. Pack cylinders shall be Excalibur type with a 5 year warranty on cylinder or an approved equal.</p> <p>3. Cylinders shall have three stages, with packing force as follows: 1st stage: 119,000 lbs. 2nd stage: 97,000 lbs. 3rd stage: 76,000 lbs.</p> <p>4. Packing mechanism shall be designed so that no contact to the tailgate can occur during loading or ejecting of refuse.</p>	<p>Yes <input checked="" type="checkbox"/> No</p> <p>Make: <u>Energy</u> Model: <u>41497D</u></p> <p>Force: <u>72,600</u> psi-lb force @ <u>1850</u> psi Force: <u>NA</u> psi-lb force @ <u>NA</u> psi Force: <u>NA</u> psi-lb force @ <u>NA</u> psi</p>	<p><u>\$ Exception</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl</u></p>

	<p>5. Packer plate to be equipped with wear resistant pads full length of slide shoes. Shoes to ride in formed 4" heavy-duty structural channels located in the lower corner of the wall and body floor with corresponding replaceable wear pads traversing entire length of body.</p> <p>6. Body Lift Interlock: the lift shall be prevented from operating when packer plate is not in the home position.</p> <p>7. Lower C-channel lip (1 piece not welded to extend width) shall extend to same width as the shoe width to prevent a wear lip from forming on the lower side of the shoe and wearing a groove into body floor.</p> <p>8. Shoe assemblies shall have debris deflector P/N 602-443 installed on front and rear sides to direct debris out from the C-channel/shoe interface.</p> <p>9. The pack panel between the shoes shall have staggered shark's teeth to help keep dirt/clay from packing in the C-channel and jamming the pack panel. The location and size of the shark's teeth shall be mutual agreed upon.</p> <p>10. Lock out container shall not be able to be dumped behind packer plate.</p>	<p>Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p>Yes <input checked="" type="checkbox"/> No</p>	<p>\$ <u>Exception</u></p> <hr/> <p>\$ <u>Incl</u></p> <hr/> <p>\$ <u>Incl</u></p> <hr/> <p>\$ <u>Incl</u></p> <hr/> <p>\$ <u>Incl</u></p> <hr/> <p>\$ <u>Incl</u></p> <hr/>
<p>J.</p>	<p>Service Hoist System:</p> <p>1. The service hoist lift system shall provide excellent access to truck components located under the trash body</p> <p>2. The service hoist system shall lift the front of the body up above the truck frame rail approximately 36" minimum for access</p> <p>3. The hoist system shall be powered by a 12vDC hydraulic pump with sufficient power to raise a fully loaded trash body.</p> <p>4. The system shall use hydraulic oil from the main hydraulic oil tank.</p> <p>5. A trash body anti-lowering safety pins or legs shall be provided:</p> <p>a. The pin/legs shall lock the trash body preventing lowering of the body.</p> <p>b. The pin/legs shall be sufficient to support 3X's the fully loaded weight of the body incase truck maintenance is required and the trash load cannot be ejected</p> <p>c. Pin storage in a sleeve, that the pin cannot fall/vibrate etc. out of shall be provided.</p>	<p><input checked="" type="checkbox"/> Yes No</p> <p>Lift Height @ front: <u>32</u> inches</p> <p>Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p>Yes <input checked="" type="checkbox"/> No</p> <p>Safety Factor: <u>Empty Body Only</u></p>	<p>\$ <u>Incl</u></p> <hr/> <p>\$ <u>Exception</u></p> <hr/>

	<p>d. The pin shall be attached to the hoist/trash body/chassis with chain/cable to prevent loss. e. Safety legs shall rest in a saddle to prevent bouncing around.</p>		
<p>K.</p>	<p>Hydraulic System: "Operate at Standard Low Idle". 1. Hydraulic pump(s) 2 required (body, arm) PTO "hot shift" driven thru a Chelsea 890 series direct drive off the transmission. The gear pump(s) shall have an automatic pump oil bypass system in normal bypass mode when the hydraulic system is not energized. 2. Hydraulic system shall be Parker Hannifin Corporation designed and certified and use as many as possible Parker components to assure compatibility of the system and 3 year Parker warranty for using a complete Parker system. Hydraulic components shall be warranted in Denver CO by a local Denver Parker representative. 3. Hydraulic system shall operate all hydraulic functions at engine low idle speed (750 rpm) and shall not require shifting transmission out of "Drive" gear or applying "Parking" brake. System hydraulic pressure and flow shall not increase above low idle speed, which could encourage an operator to increase engine rpm to try to increase hydraulic performance. 4. Pump protection, protected from 5-mph impact. Pump and protection shall not extend any more than 12" in front of the bumper. Bumpers shall be tapered/stepped back to as close as practical at outer corners of the vehicle body to reduce wall-to-wall turning without compromising cab protection. 5. Operating pressure, 2,500 psig maximum. 6. Hydraulic valves shall have LED lights on valve coils to aid in troubleshooting the system. 7. The hydraulic valve bank and manual system over-ride controls shall be located in a safe area for mechanics lowering dumpsters that are stuck in the air. Location shall be mutual agreed upon. 8. The hydraulic pump suction line shall be: a Steel tubing with hydraulic hose sections at both the pump and tank end for vibration isolation. b The suction line shall be routed for maximum ground clearance and damage protection. c Hose swivel ends shall be used on all connections.</p>	<p>Provide specs: Pump Make: <u>Commercial Intetech</u> Model: <u>P76</u> Mounting Location: <u>On Transmission</u></p> <hr/> <p>Parker Hannifin Corp. Certification and 3-Year Warranty shall be provided with bid. No certification or warranty info may make bid non-compliant Local Denver Parker Warranty <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Local Parker Warranty Vendor: Hydraulic Controls Pump Operating Speed: <u>750</u> rpm Pump Output: <u>45</u> gpm @ <u>750</u> rpm</p> <p>Operating Pressure: <u>2000</u> psig Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Location: <u>On side of Reservoir for service ability from ground</u></p> <p>Material: Steel tubing with hydraulic hose <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ Includ</u></p> <p><u>\$ Includ</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p>

<p>9. Hydraulic cylinders shall:</p> <ul style="list-style-type: none"> a. Properly sized to efficiently and continuously perform their function without any cylinder degradation. b. Cylinders shall have industrial hard chrome piston rods. c. Main ram cylinder at the rod end shall have a 4" wide mounting. d. Elevator raise/lower cylinders shall have bolt-on guards/shields installed over the hoses to prevent damage from trash sticking out of the dumpsters and catching the hoses. The hoses shall also use 45° steel bent-tube end type fittings to reduce damage from trash. e. Cylinders shall be fast and easy to remove and replace. <p>10. Hydraulic pump performance, sufficient pressure and volume at low idle rpm to produce one cycle of the compactor blade at 75% load in less than 12-seconds.</p> <p>11. Hydraulic reservoir:</p> <ul style="list-style-type: none"> a. The hydraulic reservoir shall be pressurized at 5 psig or the bottom of the hydraulic reservoir tank shall be 36" above the hydraulic pump to assure positive pump head pressure b. Capacity 50-gallons minimum c. Oil level and temperature gauge, d. Shut-off valves e. Magnetic drain plug. f. Bung for Future Hydraulic Oil Pre-heater System <ul style="list-style-type: none"> 1) Possible future installation bung for an Arctic Fox Hydra Liner H-4000 hydraulic fluid warmer. 2) Tank bung shall be schedule 80 2" NPT female thread coupling. 3) Bung shall be welded to 0.250" thick 8" dia steel tank reinforcing ring. 4) The bottom edge of the tread section of the bung and hydraulic oil pre-heater shall be 1 ½" off the bottom of the tank. 5) The baffles shall be suitable to accept a 24" long heater element and provide a 1" clearance all the way around the element. <p>12. Hydraulic oil shall be ISO Grade 32 multi-viscosity with a -40°F pour point.</p>	<p>Rod Material: <u>Chrome Plated 1045</u></p> <p>75% Load Time: <u>12-14</u> seconds</p> <p>Pressurized: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Reservoir Location: <u>Mounted on frame</u></p> <p>Hydraulic Reservoir Size: <u>55</u> gallons</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p>	<p><u>\$ Exception</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p>
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	<p>13. Hydraulic filtration,</p> <ul style="list-style-type: none"> a. High Pressure, Pressure line Parker model (World Pressure Filter) WPF 7,000 psig rated with 7-micron absolute tandem type (1 per pump). b. Return line replaceable Parker 7-micron absolute with bypass mode indicator light, easy to access for replacement. c. Suction strainer 100-micron. <p>14. Hydraulic system shall maintain oil temperature at no more than 90°F above ambient temperature.</p> <p>15. Hydraulic system test ports shall be provided for each circuit. Test port connections shall be compatible with the Parker Hannifin PD type connector.</p> <p>16. All hydraulic hoses and tubing shall be neatly routed, shielded and secured/supported to prevent chaffing under truck.</p> <p>17. All hydraulic hoses shall be Parker series ST 451 extra-high-abrasion resistant hoses to reduce hose failure from hose cover damage. Hydraulic hoses shall have swivel ends on each end.</p> <p>18. A hydraulic oil recirculation filter system connection system shall be provided with the following:</p> <ul style="list-style-type: none"> a. The suction and return tubes shall be 1" ID and be installed on the tank top side on each tank end (cross flow) approximately 4" inside the end caps and extending to within 1/4" off the tank bottom at the lowest point. b. The hydraulic connections shall be 1" Parker FF male (flat face) fittings and orientated so they face to the inside (each other). c. The suction and return lines shall be 1" ID with a 60° cut on the bottom to assure adequate hydraulic oil flow. d. The suction and return lines shall be interchangeable in use so it does not matter which hydraulic tank fitting the filter system suction and return lines are connected to. 	<p>Make: _____ Model: _____ Filter Size: _____ microns</p> <p>Filter Size: <u>6</u> microns Make: <u>Marion</u> Model: <u>SCT 100GPM</u></p> <p>Make: <u>Parker</u> Model: <u>PD</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Make: <u>Parker</u> Type: <u>TC 451</u></p> <p>Tubing Size: <u>1</u> inches Distance of Tank Bottom: <u>1/4</u> inches</p> <p>Make: <u>Parker</u> Type: <u>FF</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ Exception</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p>
<p>L.</p>	<p>Electrical:</p> <ul style="list-style-type: none"> 1. All remote electrical inter face connections shall be terminated on stud-type terminal strips or with plug type connectors in a waterproof junction box. 2. Connectors/wires shall be permanently and individually labeled. 3. Electrical schematics shall be affixed inside the cover of the junction box. 	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ Incl</u></p> <p><u>\$ Exception</u> <u>\$ Incl.</u></p>

	2. Installed front and rear on rear wheels.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
R.	Conspicuity Tape: 1. DOT-C2 Standard No. 108 reflective conspicuity tape. 2. Tape shall be on both lower sides and rear of the body. 3. Tape shall be applied in symmetrical pattern from middle of panel outward.	Brand: <u> Orafol </u> Type: <u> V92 7/11 </u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u> \$ Incl </u>
S.	Paint Main Body: 1. Polyurethane paint equal to DuPont Imron 5000, Color "Bright White", 2 coats applied to all non-stainless steel components following manufactures procedures to include: 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted.	Make: <u> PPG </u> Type: <u> Urethane </u> Color: <u> White </u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u> \$ Incl </u>
T.	Special Tailgate Paint: 1. Polyurethane paint equal to DuPont Imron 5000,: a. Top ½ of tailgate "Bright White", b. Lower ½ of tailgate "Safety Yellow" with: 1) Alternating "Safety Yellow" paint 8" wide and 2" wide "White" tape. 2) Tape 2" wide 3M Scotchlite "White" DOT reflective conspicuity tape applied from center out in a "Chevron Pattern" with a top horizontal tape strip separating the tailgate's White and Safety Yellow paint. 2. Preparation to include: 3. Removing all mill scale and slag. 4. Variprime 615S self-etching primer or approved equal. 5. Treating bare metal with manufacturer's conditioners and conversion coatings or approved equal. 6. Paint to be applied with all body members painted.	Color: <u> PPG White </u> Color: <u> PPG Yellow </u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u> \$ Incl </u> <u> \$ Incl </u>
Refuse Body Equipment SUB TOTAL COST			<u> \$ 122,651.00 </u>

\$122,651

4.7 Sundries Equipment

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	Flashing Warning Light with brush guard: 1. Whelen IONSMC -Wide Angle LED color (Amber) safety lights (4 required). 2. The 4 strobe lights shall be vertically (2 per side) mounted in the rear body light bar panel. 3. The power switch (switch body behind dash) shall be-mounted in an easy to access location. The control switch shall be installed in an easy to see and access position, but not in a location that interferes or could interfere with the driver or passenger during operation or while entering and exiting the vehicle.	Make: <u>Whelen</u> Model: <u>10N 5MC</u> <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	<u>\$1098.00</u>
B.	Driver Height Warning Sign 1. Installed on truck dash providing the travel height of the vehicle. 2. Sign shall be in 1" "white" block letters.	<input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	<u>\$ Incl</u>
C.	Work Lights: 1. Two (2) left side facing loading area, 2. Ecco E92006 LED work lights with lighted on dash mounted control switch. 3. The lights shall provide dumpster/rail lighting for night loading.	Make: <u>Ecco</u> Model: <u>E92006</u>	<u>\$ 289.00</u>
D.	Tool Holders: 1. Three shovel/broom holders mounted on curb side of body. 2. Location to be mutually agreed upon at installation.	<input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No	<u>\$ 150.00</u>
E.	Tire Chain Holders: 1. Special brackets for storing drive wheel tire chains during winter season shall be provided 2. The chain holders shall be close to the drive wheels and easy to lift tire chains onto/off the brackets 3. Exact location shall be mutually agreed upon at installation	<input checked="" type="checkbox"/> Yes No	<u>\$ 380.00</u>

Sundries Equipment SUB TOTAL COST	<u>\$ 1917.00</u>
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4.8 Complete Vehicle Sub Total Cost:

COMPLETE VEHICLE SUB TOTAL COST Refuse Body + Sundries	\$ <u>124568.00</u>
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4.9 Optional Equipment

Do not include Optional Equipment in the total price of the vehicle; however an equipment price must be provided. The City will determine if the equipment is to be purchased.

When a brand/model is referenced in the specifications unless it is stated as "No Approved Equal" it is only a statement of expected quality, information on alternative products shall be provided with the bid so a full technical comparison can be made of the product submitted as an "approved equal".

	Description of Equipment	Offered Equipment	Cost
A.	CNG Fuel System: Engine Option: 1. Cummins ISL-G, 8.9 liter, VGT turbocharged natural gas engine, rated at 320 hp @ 2,000 rpm, torque 1,000 lb/ft @ 1,300 rpm, 2,200 rpm governed 2. The CNG engine shall meet all required EPA on-highway emissions standards 3. Fuel Tank: a Fuel tank shall meet or exceed 1) NFPA 52 standards 2) US-DOT/FMVSS304 3) ISO 11439 b Tank Manufacturer c Tank Information 1) Tank Construction Type: composite 2) Service Life Years: 20 years 3) Recertification Period: 8 years 4) Type of Recertification Inspection Required 5) Tank Service Pressure Full: 3,600 psig @ 70°F (21°C) 6) Each CNG fuel tank shall have a ¼-turn ball stainless steel shutoff valve mounted at the tank inlet.	Make: <u>Cummins</u> Model: <u>ISL6</u> HP: <u>320</u> @ <u>2200</u> rpm Torque: <u>1000</u> @ <u>1300</u> rpm <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No <input checked="" type="checkbox"/> Yes No Make: <u>Lincoln</u> Model: <u>RH36A1b-09327</u> Material: <u>Composite</u> Service Life: <u>20</u> yrs Recertification: <u>8</u> yrs Inspection Type: <u>NGV2 HGV2</u> Service Pressure: <u>3600</u> psig <input checked="" type="checkbox"/> Yes No	\$ <u>2500</u> \$ <u>—</u> \$ <u>Incl.</u> \$ <u>Incl.</u> \$ <u>Incl.</u> \$ <u>Incl.</u>

x 8

<p>4. Tank Installation Location:</p> <p>1) The CNG tank mounting location shall be mutually agreed upon by the vendor and the City prior to the ordering of the cab and chassis. The vendor shall provide drawing of proposed CNG tank location(s). The locations shall not increase the truck wheelbase or the overall height of the truck and body 12' – 6" or body length over a regular non-CNG configuration:</p> <p>a) Tank Size: provide diameter x length b) Tank Weight each: Empty c) Quantity of Tanks for 75 gallon DGE d) Weight All Tanks: Empty a) Weight All Tanks: Full CNG e) Tank Enclosure Width, Length, Height f) Tank Enclosure Material: Steel/Gauge</p> <p>d Tank Mounting:</p> <p>1) End/dome/ boss, 2-piece saddle mounts on each tank end. The tanks shall be installed inside a steel tank mounting frame. The frame shall be 3" x 1 1/2" x 3/16" tubing. The frame shall be powder coat finished for durability.</p> <p>2) CNG tank manufacturer 2-point band type CNG bracket with rubber cushion between tank and bracket to prevent slippage and eliminate chaffing, accommodate tank growth by changes in internal pressure.</p> <p>e The primary tank relief valve (PRD) shall be vented up and away from the vehicle and any ignition sources. The vent shall be protected from rain or vehicle wash water from entering the vent line. The vent line shall be 1/2" diameter minimum.</p> <p>5. CNG Pressure Reducing Regulator System:</p> <p>a The pressure reducing regulator system shall be mounted inside a protective steel enclosure no more than 6 ft from the CNG fuel tank.</p> <p>b From the CNG fuel tank to the regulator the tubing shall be 1/2" od x 0.049" wall 300 series stainless steel minimum.</p>	<p>CNG Tank (s) Location: <u>Bulk Head of Body, Back of Cab</u></p> <hr/> <hr/> <hr/> <hr/> <hr/> <p>Size: <u>16</u> dia x <u>83</u> long DEG Net <u>15</u> gal Tank Weight: <u>161</u> lbs # of Tanks: <u>5</u> DEG Net <u>75</u> gal Weight all tanks and brackets etc: <u>1813</u> lbs Weight All Tanks Full CNG: <u>2300</u> lbs Enclosure Size: <u>24</u> x <u>90</u> X <u>86</u> Material: <u>Steel</u> Gauge: <u>14-16</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Frame Size: <u>3</u> x <u>1.5</u> x <u>3/16</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>PRD Pressure Release: <u>5000</u> psig</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Tubing Size: <u>1/2"</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Tubing Size: <u>1/2</u> x <u>.049</u> Type: <u>Stainless 300</u></p>	<p>\$ Incl. _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>
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<p>c The pressure reducing regulator system shall have 2 pressure gauges installed in the system.</p> <p>1) High Pressure gauge 0-to-5,000 psi installed on tank side to show tank system pressure.</p> <p>2) Low pressure gauge 0-to-250 psi to show engine down-stream fuel delivery pressure to the engine.</p> <p>3) Gauges shall be stainless steel glycerin filled.</p> <p>d The engine coolant flow to the pressure reducing regulator shall be minimum of 1 gallon/minute of 180°F coolant per 50 hp of engine output. For coolant flow the heat exchanger for the engine shall be rated at 450 hp to cover engine rating increases after the truck is delivered.</p> <p>e Engine coolant flow and CNG fuel supply shall enter the regulator on the same side of the regulator.</p> <p>f Coolant ports shall be oriented vertical (up) in horizontal regulators to prevent air from becoming trapped in the regulator.</p> <p>g The pressure reducing regulator shall not under any circumstance be installed in series with the truck cab heater system.</p> <p>6. Automatic Fuel Shut Off:</p> <p>a The automatic fuel shut off valve shall be plumbed directly to the exit/warm side of the engine coolant heated pressure reducing regulator.</p> <p>b The automatic fuel shut off valve shall have its weight supported by a mounting bracket.</p> <p>c The automatic fuel valve shall have a Cv of 2.0 minimum to assure adequate fuel flow.</p> <p>d The automatic fuel shut off shall be a NC (normally closed) valve when the ignition is in "Off" position.</p> <p>7. Fuel Lines:</p> <p>a All high pressure shall be ½" od x 0.049" wall stainless steel 316L tubing appropriate for the application.</p> <p>b Stainless steel lines shall have thermal expansion/contraction loops for smaller diameter lines and S-bend expansion joints for larger diameter lines.</p>	<p>Pressure Range 0 to 5000 psi</p> <p>Pressure Range: 0 to 250 psi</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>Valve Cv: 2.0</p> <p>X Yes No</p> <p>Make: Parker/Evco Type: ½" X .049</p> <p>X Yes No</p>	<p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p> <p>\$ Incl. _____</p>
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<p>c All CNG lines shall be supported with stainless steel rubber bushed aircraft P-type clamps. The maximum distance between clamps shall no more than 24".</p> <p>d Fitting for the CNG fuel system shall be:</p> <ol style="list-style-type: none"> 1) Stainless steel tube fittings shall be Swagelok or Parker A-lok with thread sealant. 2) Special NPTF pipe fittings shall be stainless steel with thread sealant. <p>e All NPT fitting shall be installed on male pipe threads using proper thread sealants.</p> <ol style="list-style-type: none"> 1) Thread sealant and anti-seize shall be a nickel impregnated or nickel coated Teflon tape. 2) Teflon tape shall start at 2nd thread. 3) On 1/2" and under use 2 wraps of tape 4) On 5/8" to 1" use 3 wraps of tape. 5) Assure last section of tape is pulled down tight against the threads. 6) Do not use sealant on compression threads <p>f Post heat exchanger hoses and lines may be Parker 929 heavy-wall PTFE hose exceeding SAE100R14A or stainless steel tubing.</p> <p>8. Fuel Fill System:</p> <p>a The fuel receptacle and fuel fill system shall be rated for both "fast fill" and "slow fill" with a minimum 1/2" od x 0.049" wall 300 series stainless steel.</p> <p>b The fuel fill nozzle:</p> <ol style="list-style-type: none"> 1) Shall be a male NGV1 OPW with rubber protective cover boot 2) Fill location on the driver's side of the vehicle 3) The fuel filler line shall be plumbed to the CNG tank bank. <p>c The tank fill enclosure shall have:</p> <ol style="list-style-type: none"> 1) A high pressure line/tank pressure gauge 0-to-5,000 psi 2) A low pressure fuel to engine pressure gauge 0-to-250 psi 3) An OPW male NGV1 fuel fill receptacle with easy access and excellent clearance for both "fast fill" and "slow fill" receptacles. 	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Make: <u>Parker</u> Type: <u>Leak Proof Hydraulic Flange</u></p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Sealant Type: _____</p> <p>Make: <u>Parker</u> Type: <u>929 or PTFE</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Tubing Size: <u>1/2 X .049</u></p> <p>Make: <u>Parker</u> Model: <u>NGV1 FMS-362-6FO</u></p> <p>Fill Location: <u>Driver Side</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pressure Range: <u>0</u> to <u>5000</u> psi Pressure Range: <u>0</u> to <u>250</u> psi</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p>
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<p>4) An emergency ¼-turn shut off valve for shutting down the system in case of a fueling emergency.</p> <p>d The fuel fill access shall be easy to access and easy for the operator to see for fueling and to prevent drive-off with fuel hose attached.</p> <p>e The fill receptacle shall have an easy to remove/reinstall fuel fill cover to protect the fill port from contamination during truck operation.</p> <p>9. CNG Filtration:</p> <p>a High pressure, on the fuel tank(s) fill line to clean the CNG before it enters the fuel tank storage system.</p> <p>b Low Pressure, on the downstream "low pressure" post regulator engine delivery side. The "low pressure" filter shall be a Fleetguard spin-on NG5900 with liquid drain or approved equal.</p> <p>10. Fuel Gauge:</p> <p>a An electric fuel gauge shall be provided with easy to see vehicle dash gauge to show fuel tank volume.</p> <p>b The fuel sender shall be a sealed unit mounted to the high-pressure tank system</p> <p>c A sealed 3-pin Weatherpak connector with a 1-amp fast blow automotive fuse shall connect the sender to the gauge.</p> <p>d Pins are:</p> <ol style="list-style-type: none"> 1) Red = power 2) Green = signal 3) Black = ground 	<p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p> <p>Make: <u>Parker</u> Model: <u>FFC 112 SAE</u></p> <p>Make: <u>Fleetguard</u> Model: <u>NG 5900</u></p> <p>Fuel Gauge Type: <u>dhybrid Touch Screen</u></p> <p>Make: <u>dHybrid</u> Model: <u>CTS</u></p> <p>X Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ 31,670.00</u></p> <p>CNG PRICED OUT ON LINE 2 \$31,670</p>
<p>B. Automatic Lubrication System to include:</p> <ol style="list-style-type: none"> 1. Interlube AC3 or Vogel automatic lubrication system. 2. The system shall automatically lubricate the dumpster carriage system and plastic barrel pick up system and other high wear areas. 3. The automatic lubrication system shall be designed for the particular application and to maximum durability of the lubrication lines and installed by the trash body manufacturer. Poorly thought out or routed lubrication lines will not be accepted. 	<p>Make: <u>Bijur</u> Model: _____</p> <p>Items that will be automatically lubricated: _____</p> <p>Number of Automatic Lubrication Points: <u>16</u></p> <p>X Yes No</p> <p>X Yes No</p>	<p><u>\$ 6370.00</u></p>



Agility Fuel Systems- Fontana
 10007 Elm Avenue
 Fontana, CA 92335 USA

Estimate

Date	Estimate #
7/10/2013	12371

Name / Address
HARDLINE EQUIPMENT 3450 CR 27. FORT LUPTON, CO 80621

PRICING DOES NOT INCLUDE FET OR SALES TAX

Item	Description
	(80) DGE ROOF MOUNT CNG SYSTEM INSTALLED IN GUTTENBURG, IOWA
	THE FOLLOWING ESTIMATE IS TO PROVIDE AND INSTALL THE CNG FUEL SYSTEM ON ONE (1) NEW CNG READY CHASSIS WITH NEW WAY ASL FEL/ASL BODY. THE PROPOSED SYSTEM WILL BE ROOF MOUNTED AND PROVIDE SIXTY (80) DGE OF CNG FUEL. ***BODY COMPANY TO PROVIDE ROOF TRANSITION BRACKETS***
	SYSTEM INSTALLED IN GUTTENBURG, IOWA
REPAIR LABOR	FABRICATE, ASSEMBLE & INSTALL ROOF MOUNTED CYLINDER PACK, HIGH PRESSURE PLUMBING & FUEL MANAGEMENT MODULE
PARTS	16" X 100" 3600 PSI TYPE III OR IV CNG CYLINDER (INCLUDES MANUAL VALVE & PRD)
PARTS	NECK MOUNTING BLOCK ASSY
PARTS	AGILITY CUSTOM TANK MOUNTING STRUCTURE ASSM
PARTS	ALUMINUM CYLINDER ENCLOSURE (COLOR MATCHED TO BODY)
PARTS	HIGH PRESSURE FITTINGS & LINES
PARTS	20091000, FUEL MANAGEMENT MODULE (INCLUDES NGV-1 FILL RECEPTACLE, FILTER, HPR, HIGH & LOW PRESSURE GAUGES, 1/4 TURN & LOCK-OFF SOLENOID)
PARTS	HARDWARE
MISC.	CNG FUEL
MISC.	COST FOR PALLETIZING THE SYSTEM, FREIGHT & ON-SITE LABOR.
MISC.	AUXILIARY NGV-1 FRONT FILL PORT
MISC.	STANDARD WARRANTY
	TERMS NET 30 DAYS PRICING VALID FOR 30 DAYS THIS PRICE INCLUDES COST FOR PALLETIZING THE SYSTEM, FREIGHT & ON-SITE LABOR.

WE ARE YOUR CNG FLEET SERVICE SOLUTION!

Paul Mader pmader@agilityfs.com			Subtotal	USD 34,315.00
Phone #	Fax #	Web Site	Sales Tax (0.0%)	USD 0.00
(909) 350-7500	(909) 350-9852	www.agilityfuelsystems.com	Total	USD 34,315.00

	<p>4. Grease pump/reservoirs, control unit, distribution manifolds and grease hoses/lines shall be located/routed for maximum durability ease of access and protection from damage. The automatic lubrication system shall be well thought out and the system shall be designed into the trash system</p> <p>5. Grease pump/reservoir shall be a 3 liter grease capacity minimum.</p>	<p>System Pressure: _____ psi Grease Line Material: _____ Grease Reservoir Size: _____</p>	
C.	<p>Cab Heater:</p> <ol style="list-style-type: none"> The cabin heater shall be a Webasto Air Top 2000ST. Heat Value 3,100 to 7,000 Btu/hour Air Flow 37 cfm Size: 12 1/4" x 4 3/4" x 5" approximate Electrical 12vDC @1.2 amps Diesel Fuel Usage 0.03 to 0.06 gallons/hour 	<p>Make: <u>WEBASTO</u> Model: <u>AIRTOP 2000</u> Btu's: <u>7000</u> /hr Air Flow: <u>37</u> cfm Size: <u>12 1/4</u> x <u>4 3/4</u> x <u>5</u> Fuel Usage: <u>.03</u> gal/hr</p>	<p>\$ <u>991</u></p>
D.	<p>Hydraulic Oil and Engine Coolant Heater:</p> <ol style="list-style-type: none"> Heater for hydraulic oil and engine coolant shall be a Wabasto Thermo 90ST Heat Value 6,100 to 26,000 Btu/hour Water Flow 7.3 gallons/minute @ 2.2 psi Size: 15 3/4" x 7 1/2" x 14" approximate Electrical 12vDC @ 3 amps Diesel Fuel Usage 0.06 to 0.24gallons/hour Hydraulic oil heater Arctic Fox H-4000 series maximum length for hydraulic tank. Baffle may need to have pass-thru opening 	<p>Make: <u>WEBASTO</u> Model: <u>THERMO 90T</u> Btu's: <u>31000</u> /hr Water Flow: <u>7.3</u> gpm Size: <u>15 3/4</u> x <u>7 1/2</u> x <u>14</u> Fuel Usage: <u>.06</u> gal/hr Make: <u>ARctic FOX</u> Model: <u>H 4000</u> Length: _____</p>	<p>\$ <u>2950</u></p>
E.	<p>Sign Boards, Two body mounted Roadway Displays Inc. (909.587.0207) mobile display systems shall be provided to include:</p> <ol style="list-style-type: none"> Frame model SS315955 95-1/2" long x 31-1/2" high x 2-1/4" frame width with .025" aluminum backing. Frame material, 6463-T6 aluminum extrusions with satin anodize. Sign panel size 93-3/16" x 29-3/16" x .060" high impact styrene. View size 91" x 27". Sign frame shall be securely mounted to body yet be easy to remove and replace. The flat sign face shall have a steel sub frame to attach it to the body and branch deflectors shall fill the void between the sub frame and the body. 	<p>Make: <u>Roadway Display</u> Model: <u>SS315955</u> X Yes No Size: <u>93 3/16 x 29 3/16</u> x Yes No</p>	<p>\$ <u>840.00</u></p>

<p>c. Camera shall be automatically heated for cold weather operation.</p> <p>d. Resolution 380 TV lines horizontal.</p> <p>e. Signal to noise ratio 44dB minimum.</p> <p>3. Monitor LCD, 7" flat screen ECCO model M7000Q with:</p> <p>a. Monitor shall be in a very easy to see location on the dash next to the "A" pillar that requires as little as possible head movement and also with a little as possible front windshield obstruction. The monitor location shall be mutually agreed upon.</p> <p>b. Camera view selection switches on the TV monitor and trigger wires via power cable.</p> <p>c. Automatic day/night dimmer sensor</p> <p>d. Resolution 291,000 pixels or better.</p> <p>e. Picture control to include brightness, contrast and image.</p> <p>f. Speaker system to broadcast sound from camera.</p> <p>g. Picture shall be crisp and clear at all times.</p> <p>h. Anti-glare sun shield and hood model A7000SS.</p> <p>i. Swivel mounting bracket.</p> <p>j. Automatic dimmer sensor to adjust for day and night viewing.</p> <p>k. Monitor capable of accommodating 2 cameras.</p> <p>4. All wiring shall be totally sealed with sealed locking connections to prevent corrosion.</p> <p>5. All wiring shall be routed to prevent damage to the wiring.</p> <p>6. Warranty 2 years with replacement of failed components with new components shipped UPS "Next Day" upon notification of problem.</p>	<p>Resolution: <u>380</u> lines</p> <p>Make: <u>Ecco</u> Model: <u>M7000Q</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Monitor Included in Kit</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pixels: <u>336,960</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Make: <u>Ecco</u> Model: <u>A7000SS</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Warranty: <u>2</u> years <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ 750.00</u></p> <p><u>\$ 12.00</u></p> <p><u>\$ Incl.</u></p>
<p>H. Electric/Hydraulic Control System:</p> <p>1. Control system shall be electric over hydraulic.</p> <p>2. Console control shall be mounted into an easy to see and access location with out turning the head more than 30° to side. Console controls to include:</p> <p>a. Transmission shifter control.</p> <p>b. Tailgate open/close.</p> <p>c. Pack panel extend/retract.</p> <p>d. Master power.</p> <p>e. Work lights.</p> <p>f. Strobe lights.</p>	<p>Control Type: <u>Air over Hydraulic</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><u>\$ Incl.</u></p>

<p>g. Indicator lights: Retract "amber", Compact "green", Tailgate Open "orange", Overspeed "blue" and Work Brake Hold "red".</p> <p>3. Cab Mounted Controls:</p> <p>a. Cab mounted controls on left side shall all be in ergonomic and natural, easy to reach locations.</p> <p>b. Controls shall be designed to comfortably and efficiently accommodate an operator making 600 dumping operations per day, 6 days per week.</p> <p>c. Controls shall have a life cycle of 5,000,000 cycles minimum.</p> <p>d. Controls shall utilize light touch and short throw devices.</p> <p>e. Controls shall be multi-positional to accommodate a variety of operators. The City has operators of varying statures and adjustable controls will minimize on-the-job related physical problems. Control placement shall accommodate operators from 5'-2" to 6'-4" tall and from slender to large physics.</p> <p>f. The controls shall be easy and quick for the operator to position without the use of tools for comfort and efficiency.</p> <p>g. Studies suggest that long periods of repetitive motion coupled with an improper work environment and incorrect operator position may be linked to certain types of physical discomfort or injury. These include Carpal Tunnel Syndrome (CTS), Cumulative Stress Disorder (CSD), Tendonitis and Tenosynovitis.</p> <p>h. To help avoid the conditions listed in Section 4.6.J the City is providing information sites where ergonomic information is available to help in the proper layout of operator controls.</p> <p>1) Ergonomist Certifying Organizations include:</p> <p>a) Oxford Research Institute: 301-865-4506</p> <p>b) Board of Certified Professional Ergonomists: 360-671-7601</p> <p>4. Main control panel shall be solid state design with LED function indicators. Rocker switches shall be back lighted type for easy identification at night.</p> <p>5. Controls shall be permanently labeled and lighted for easy night viewing.</p> <p>6. Vendor shall provide:</p> <p>a. The vendor shall provide within 14 days of the Contract award the name and credentials of the ergonomic consultant.</p>	<p>X Yes No X Yes No</p> <p>X Yes No X Yes No</p> <p>Cycle Life: <u>5,000,000</u> X Yes No X Yes No</p> <p>How Adjusted: <u>Joy Stick can be raised or lowered</u> Set Forward or Backword</p> <p>X Yes No</p> <p>Consultant Used: <u>NA</u></p> <p>X Yes No X Yes No X Yes No</p>	<p><u>\$ Incl</u></p> <p><u>\$ Incl</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$?</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p> <p><u>\$ Incl.</u></p>
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	<p>b. The City preliminary drawings of the control layout and how the controls are positioned inside the truck cab within 45 days of the contract award.</p> <p>c. Within 120 days of the Contract award the vendor shall provide a preliminary mock up set of controls for review by the City.</p> <p>d. Vendor shall deliver the first article for review, testing and approval before shipping remaining units from the factory.</p>	<p>X Yes No</p> <p>X Yes No</p> <p>X Yes No</p>	<p>\$ <u>Incl.</u></p>
<p>I.</p>	<p>Inspection Trip:</p> <ol style="list-style-type: none"> 1. The City and County of Denver reserves the right to inspect at the body fabricating plant the first (1st) article prior to paint and delivery. 2. Where the fabricating plant is located further than 200 road-miles from the City and County of Denver, the bidder shall include in the bid price all travel expenses to the fabrication plant for the inspection. 3. The City may select to send from 2 representatives to inspect the 1st article. The provided costs shall be based on one (1) person per day and the City will determine how many representatives the inspection will require and how many days the inspection will require. 4. Inspection Trip Costs to include: <ol style="list-style-type: none"> a. Air fare per person: b. Surface transportation costs: c. Lodging per person per day: d. Meals per person per day: 5. Total cost per person for 1st article inspection trip: 	<p>Provide information:</p> <p>Distance to fabrication plant: <u>905</u> miles Plant Location: <u>Guttenberg, IA</u></p> <p>Air Fare: \$ <u>175.00</u>, Airline: <u>United</u></p> <p>Surface Transportation: \$ <u>200.00</u>, Mode: <u>Rental</u></p> <p>Lodging / day: \$ <u>150.00</u>, Hotel: _____</p> <p>Meals / day: \$ <u>100.00</u></p>	<p>\$ <u>175.00</u></p> <p>\$ <u>200.00</u></p> <p>\$ <u>150.00</u></p> <p>\$ <u>100.00</u></p> <p>\$ <u>625.00</u></p>

5.0 Manuals/Equipment

Item	Description of Equipment	Offered Equipment	Cost
Training Video	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment. 1. Cab and chassis. 2. Equipment and Body.	Yes No X Yes No	\$ _____ \$ <u>Incl</u>
Operators Manual	One per vehicle/equipment with "safe equipment operation" section for each component. 1. Cab and chassis. 2. Equipment and Body.	Safe Equipment and Body Equipment Operations Book	\$ <u>Incl</u>
Service/Repair/Maintenance Manual	Two complete sets per Contract (not per vehicle); binder required, Shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments.		\$ <u>Incl</u>
Service/ Repair/Maintenance Manual on CD rom or DVD	One complete set; per Contract (not per vehicle) 1. Manuals shall include complete and detailed information for maintenance of the equipment, including general information, specifications, troubleshooting guide, lubrication and required adjustments. 2. The hydraulic and electrical sections of the manuals shall be provided in a separate electrical/hydraulic binder. Both the hydraulic and electrical circuits shall have separate color coded schematics for each equipment function to show the flow of both electrical current and hydraulic oil.	CD available and Included	\$ <u>Incl.</u>
Parts Manual	Two complete sets, per Contract (not per vehicle) binders required, illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.	Two Sets Included	\$ <u>Incl.</u>

Parts Manual on CD rom or DVD	One complete set, per Contract (not per vehicle) illustrated parts book shall be furnished containing data so that part numbers can be readily found for each system.		\$ _____
New Equipment Check-in Form:	The successful vendor shall complete the City's "New Equipment Check-in Form" completely and accurately with all requested information.		\$ _____

5.1 Operator and Mechanics Training

Item	Description of Equipment	Offered Equipment	Cost
On Site Equipment Manufacturers Training	On site the vendor shall insure that the equipment manufacturers training representative, after delivery of the equipment Contacts Fleet Maintenances training manager to coordinate equipment training.		\$ _____
Fleet Maintenance Training Manager	Charlie Pletcher, Telephone: 720.865.3951 Contact time: 8:00 am to 3:00 pm M-F		
Training Requirements	Training shall consist of factory training materials, classroom and actual field training on the equipment for the equipment operators and supervisors.	One Time- 2 Instructors 3 Days	\$ <u>1600.00</u>
On Site Mechanics Training	On site mechanics training shall be 2 classes, approximately 8 hours, 2 shifts total provided at City facilities. The training shall cover maintenance and service procedures, trouble shooting and use of manuals.	Included Above	\$ _____

6.0 **Repair Parts Delivery**

Repair Parts delivery	
A.	Indicate any and all current Master Purchase Order Agreement(s) (MPO) between the City and the Proposing vendor and sub-vendor(s): Each City MPO contains 9 characters: For Example: 0120A0110, 0667A0108, and etcetera. <div style="text-align: center;"><i>0667A 0305</i></div> • • • •
B.	If no agreement(s) exist- is vendor willing to propose on future City bids in relation to parts/ components for the manufacture equipment proposed herein. X Yes No- If no explain:

7.0 **Warranty**

7.1 **General Warranty Requirement**

TABLE 1

WARRANTY (CLASS 7 THROUGH CLASS 8 VEHICLES)		Complies (Y or N/A)
A.	1. Express warranty is to be a minimum of twelve (12) months on the vehicle/equipment. 2. The trash body area and components where the dumpster lift cycle concentrates its forces during the trash dumping cycle shall be warranted against structural damage/failure for 5 years of service. 3. The standard factory warranty plan shall be provided as an attachment to your bid proposal	XY N/A XY N/A XY N/A
B.	The Warranty is to include, at no cost to the City of Denver, all parts and labor, and no charge for work performed at the vendors facility	Y
C.	Warranty shall start when the City places the vehicle into service NOT on the delivery date. Taking an exception may make bid non compliant.	Y
D.	Warranty plans shall consist of the total unit and be broken out to a separate plan for each warranty item if applicable, such as engine warranty plan, transmission warranty plan, electrical, etc	Y
E.	Options listed shall be bid and provided as factory installed under the terms of the full factory-backed warranty. This includes, but is not limited to: air conditioning, radios, cruise control, bumpers, towing packages etc. Dealer-installed options will not be permitted unless pre-approved by the City in writing and, where applicable, indicated on bid sheet as a "dealer installed" non- factory item.	Y

F.	Bidder will be responsible for warranty repair of all installed options/auxiliary equipment included in the bid that has a standard warranty that is less than the standard warranty for the base vehicle/equipment	Y
G.	Bidder shall use a single, local factory authorized dealership that will accomplish or coordinate required warranty work. The dealership must have a minimum of 1-year experience as a factory authorized vendor for like equipment being bid. Warranty parts shall be available and supplied within 24 hours	Y
H.	If applicable, bidder shall provide a plan for the City to be reimbursed if the work can be done by the City on site. The current shop rate is \$71.00/hour, not to exceed \$85.00/hour. (Enter a response of N/A if not available)	
I.	The bidder shall respond to request for warranty assistance within twenty-four (24) hours.	Y
J.	Warranty work shall be accomplished within an appropriate length of time (generally less than 3 working days for everything other than major component repair such as a transmission rebuild) and shall be coordinated with an authorized City representative	Y
K.	During the entire warranty period, if the unit requires transportation to a repair facility, the vendor/sub-vendors shall be responsible for all transportation at "NO COST" to the City and County of Denver. This includes transporting the unit back to the City's domicile location after repairs are complete. If an alternate is bid, charges to the City of Denver shall be listed (e.g. mileage, travel, labor, etc.). Even if an alternate is bid, in NO CIRCUMSTANCES will the City and County of Denver be responsible for transporting a unit greater than 25 miles from the center of Denver. For purposes of these warranty provisions, the center of Denver is defined as the City and County Building located on the corner of Colfax and Bannock Street.	Y
L.	The item(s) procured by the City pursuant to this Bid Proposal shall, in addition to being subject to the express warranties referenced above, be subject to all implied warranties arising by operation of law under State of Colorado and federal law, including but not limited to the implied warranty of merchantability and, to the extent applicable, the implied warranty of fitness for a particular purpose arising under the Colorado Uniform Commercial Code, Title 4, Colorado Revised Statutes. The bidder shall in no event attempt to limit or disclaim any of such implied warranties under this Bid Proposal, and any attempt to do so will render the bidder's bid non-responsive under this Bid Proposal.	Y
M.	This warranty in Table 1 and Table 2, is IN ADDITION to factory warranties on the vehicle and components	Y

7.2 Fleet Defects and Lemon Clause:

TABLE 2

WARRANTY - (Table 2) Fleet Defect Clause, Class 7 & 8 Vehicles	
A.	<p>Definition; If during the warranty period, a vehicle/unit(s) covered by this specification is out of service for 10% or 208 hours during the first 2,080 service hours of the 1st year warranty period caused by defects in Design, Testing, Material, and/or Workmanship, then this "Product Defect Clause" or "Lemon Clause" goes into effect. The Product Defect Clause/Lemon Clause shall be determined solely by the City</p> <p>5. This clause will not apply to delays in completion of warranty repairs due to acts of God, acts of the Public Enemy, acts of the Government (in either its sovereign or contractual capacity), fires, floods, or strikes, and unusually severe weather, PROVIDED that the Vehicle/Unit Vendor shall within three (3) calendar days of any such delay notify the City of Denver's Fleet Management in writing of the causes of delay and the facts relating to the problem</p> <p>6. After 24 hours/3 days of consecutive "lost service" of the vehicle/unit due to warranty problems the warranty period shall be extended by the length of lost service time due to warranty problems.</p> <p>7. The City of Denver shall consider the information submitted and may extend the time (208 hours) for completing, if in the City's, judgment, the facts justify such a warranty extension. The judgment of the City shall be final.</p>
B.	<p>Definition: thirty percent (30%) of the total number of units delivered have the same part(s) and/or components failure requiring replacement and/or modifications, caused by defects in Design, Testing, Material, and/or Workmanship,</p>
C.	<p>Remedy: Following notification of a Fleet Defect, the vendor shall develop and implement a plan that either reengineers, modifies, or replaces the defective parts/ systems, such that the identified problem is cured and the operation of the vehicle/equipment is not altered. When alterations are required to cure the defect, those alterations that change or modify the original bid specifications must be approved by the City and County of Denver prior to execution. The vendor will pay for all necessary labor and materials to repair, modify, and/or "update" all vehicles/units in this group. The vendor shall also propose a work schedule that is mutually agreed upon by the City of Denver that corrects the fleet deficiency within 30 days or a mutual agreed upon schedule.</p>
D.	<p>Exceptions: Fleet defects will not apply to minor aftermarket accessories specified by the City of Denver and installed per instructions/specifications. Examples include: toolboxes, spotlights, bed-liners, etc.</p>
E.	<p>Mitigation: Should the vendor become non responsive to the City's notification of a Fleet Defect, the City may employ several options. (1) After notifying the vendor in writing of The City's intent to mitigate its circumstances, the City may chose to perform its own warranty work and seek reimbursement for both parts and labor. (2) On major components, such as engine, transmission, air conditioning, etc., the City may chose to have the repairs performed by an authorized dealer and vendor shall reimburse the City for any parts or labor not covered by other warranty.</p>

F.	Outside Metro-Denver: Vendor will pay for all transportation costs if unit(s) must be sent out of the Denver area for repairs. The City and County of Denver reserves the right to inspect unit(s) before returning back to Denver. The City and County of Denver also reserves the right to send at least one employee, without cost to the City, to inspect the repair(s) before unit is released back to the City.
G.	Expired Warranties: Units that have mutually agreed upon warranty defects during the warranty period will continue to be repaired until completed. If an on-going remedy continues past the warranty date the repairs will continue under warranty until completed or cease at a time agreed upon by the vendor and City and County of Denver.

7.3 Warranty Options

TABLE 3

WARRANTY Options		(CLASS 7 THROUGH CLASS 8 VEHICLES)		
Cost of Factory Extended Warranties		Please indicate in the columns below the additional cost of an extended warranty for all applicable components listed in the left hand column.		
		Inc = Included		N/A = Not available
		Two Years	Three Years	Five Years
A.	Cab and Chassis	1265	2915	N/A
B.	Engine	INC	1150	1350
C.	Transmission	INC	INC	950
D.	Drive Train	N/A	N/A	N/A
E.	Right Side Operator Controls			
F.	Suspension	471	N/A	N/A
G.	Air Conditioning	495	655	N/A
H.	Hydraulics a. Pumps b. Cylinders c. Tanks d. Valves e. Controls			
I.	Attached Body			
J.	Joystick			
K.	Electrical Components			
L.	Operator Controls			
M.	Other <i>APRIL TREATMENT</i>		475	650

Notes:			
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7.4 Warranty Service Locations: Warranty repair parts and service shall be available locally at an established factory authorized dealership meeting requirements of Table 1 Section 7.

- A. Cab & Chassis: Dealership Name: RUSH TRUCK CENTER Telephone #: 303-675-0141
 Street Address: 5165 VASQUE City: DENVER CO 80241
- B. Trash Body: Dealership Name: HardLine Equipment Telephone #: 303-500-2176
 Street Address: 7500 Dahlia Street City: Commerce City, Co
- C. Sundries: Dealership Name: _____ Telephone #: _____
 Street Address: _____ City: _____
- D. Sundries: Dealership Name: _____ Telephone #: _____
 Street Address: _____ City: _____

8.0 **Heavy Duty Vehicle Delivery Documentation:**

Delivery Documentation (GVWR 26,001-Lbs and Above Heavy Duty)	
A.	Vehicles ordered under this specification shall be complete and delivered to CITY AND COUNTY OF DENVER, Fleet Management Division. All prices quoted must be quoted at a firm price F.O.B. Denver, Colorado, 5440 Roslyn St. Building C.
B.	<p>Vendor shall supply at acceptance and delivery of vehicle.</p> <ol style="list-style-type: none"> 1. Bill of Sale (aka invoice, buyers order) 2. Original MSO (Manufacturers Statement of Origin) 3. Application for Title and/or Registration, Colorado Dept of Revenue form DR2395 (02-22-11) 4. Odometer Disclosure Statement, Colorado Dept of Revenue form DR2407 (09-07-05) 5. Letter of Certification on Vendor Letterhead (Required for Incomplete Vehicles) with added bodies etc, describes the final configuration of the vehicle) 6. Air Brake inspection form required for any vehicle with air brakes or truck units capable of towing trailers greater than 10,000-Lbs 7. Standard Sales Tax Receipt. 8. DOT inspection form. 9. Temporary License Plate. 10. New Equipment Check-in Form/ Vendor Supplied Information on the Vehicle. Form provided by Fleet contact Dolores @ 720.865.3903 11. Copy of City Purchase Order. 12. All Keys ordered for the Vehicle and Sundries, i.e. toolboxes etc. 13. All Manuals repair, parts, owners and/or CD's/DVD's etc 14. Vehicle Warranty information and receipt for optional warranty. 15. Receipts and Warranty information for vendor Installed/supplied components (lift gates, snowplows, lighting equipment etc)
C.	<p>For an "Incomplete Vehicle" (cab & chassis) add the following:</p> <ol style="list-style-type: none"> 16. Verification of Vehicle Identification Number (VIN), Colorado Dept. of Revenue form DR2087. 17. Statement of Fact for incomplete vehicles with added bodies etc, describes the final configuration of the vehicle. 18. Original weight slip.
D.	<p>Delivery: Monday through Friday between 8:00am and 1:00pm. Location: CITY AND COUNTY OF DENVER Fleet Management 5440 Roslyn St. Building C Denver, CO 80216 Contact person to coordinate delivery: Dolores Gallegos at (720) 865-3900 ext. 03 or direct line (720) 865-3903.</p>


9.0 Vehicle Delivery
9.1 Delivery of Cab and Chassis to Body Vendor

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF CAB AND CHASSIS AFTER PURCHASE ORDER IS ISSUED TO BODY VENDOR	<u>60</u> DAYS
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9.2 Delivery of Completed Truck with Body Installed to City and County of Denver

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF COMPLETE VEHICLE AFTER CAB AND CHASSIS IS DELIVERED	<u>180</u> DAYS
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10.0 Complete Vehicle Cost

Include: <input type="checkbox"/> Cab & Chassis Total Cost <input type="checkbox"/> Side Loader Body Total Cost <input type="checkbox"/> Sundries Items Total Cost Do Not Include: <input type="checkbox"/> Optional Equipment <input type="checkbox"/> Warranty Cost (s) <input type="checkbox"/> Manual Cost (s)	ONE COMPLETE VEHICLE TOTAL COST Authorized Signature: 	\$ <u>261,908⁰⁰</u>
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RUSH/HARDLINE
Body - KANN

s:\bid information\bids one time\7032e refuse trucks- side and rear loader\12-084 086 +11-018 019 side loader truck sw.docx

UPDATED PER MARKET ADJUSTMENT (DRMC)20-64 (A1)

CAB AND CHASSIS: \$138,340

CNG ENGINE: \$2,500

KANN SIDE LOADER BODY: \$124,490.77

SUNDRIES: \$1,917

CNG SYSTEM: \$31,670

SIGN BOARDS: \$840

Reference Nos: 2-084, 12-086, 11-018, 11-019

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Vendor/Sub Vendor: RUSH

ECCO CAMERA SYSTEM: \$1,800

TOTAL EACH UNIT: \$301,557.77

HARDLINE
 CCD_LOI_RUSH TRUCK_EXHIBIT_SIDE LOADER



CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
02/25/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services Southwest, Inc. Houston TX Office 5555 San Felipe Suite 1500 Houston TX 77056 USA	CONTACT NAME: PHONE (A/C. No. Ext): (866) 283-7122 FAX (A/C. No.): (800) 363-0105	
	E-MAIL ADDRESS:	
INSURER(S) AFFORDING COVERAGE		NAIC #
INSURED Rush Enterprises, Inc. 1020 NE Loop 410 #300 San Antonio TX 78209 USA	INSURER A: The Insurance Co of the State of PA	19429
	INSURER B: National Union Fire Ins Co of Pittsburgh	19445
	INSURER C: New Hampshire Ins Co	23841
	INSURER D: Illinois National Insurance Co	23817
	INSURER E:	
	INSURER F:	

Holder Identifier :

COVERAGES **CERTIFICATE NUMBER: 570052957155** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GENL AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			GL5094752	05/01/2013	11/01/2014	EACH OCCURRENCE	\$2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$1,000,000
							MED EXP (Any one person)	Excluded
							PERSONAL & ADV INJURY	\$2,000,000
							GENERAL AGGREGATE	\$10,000,000
							PRODUCTS - COMP/OP AGG	\$10,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS			CA 6403775	05/01/2013	11/01/2014	COMBINED SINGLE LIMIT (Ea accident)	\$2,000,000
							BODILY INJURY (Per person)	
							BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$25,000			20562151	11/01/2013	11/01/2014	EACH OCCURRENCE	\$2,000,000
							AGGREGATE	\$2,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	WC043408972 Worker Comp (ND,OH,WA,WY) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT	\$1,000,000
							E.L. DISEASE-EA EMPLOYEE	\$1,000,000
							E.L. DISEASE-POLICY LIMIT	\$1,000,000

Certificate No : 570052957155

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Garage Keepers Legal Liability is included in the above referenced Automobile Liability Policy. The City and County of Denver, its elected and appointed officials, employees and volunteers are included as Additional Insured in accordance with the policy provisions of the General Liability policy.
 Rush Truck Centers of Colorado, Inc.

CERTIFICATE HOLDER**CANCELLATION**

City and County of Denver Attn: Department of Public Works 201 West Colfax, Dept., Suite 611 Denver CO 80202 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Aon Risk Services Southwest, Inc.</i>
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ADDITIONAL REMARKS SCHEDULE

AGENCY Aon Risk Services Southwest, Inc.		NAMED INSURED Rush Enterprises, Inc.	
POLICY NUMBER See Certificate Number: 570052957155			
CARRIER See Certificate Number: 570052957155	NAIC CODE	EFFECTIVE DATE:	

ADDITIONAL REMARKS

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance**

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER	
INSURER	
INSURER	
INSURER	

ADDITIONAL POLICIES If a policy below does not include limit information, refer to the corresponding policy on the ACORD certificate form for policy limits.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS
	WORKERS COMPENSATION						
C		N/A		WC043408973 Worker Comp (CA) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	
D		N/A		WC043408974 Worker Comp (FL) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	
C		N/A		WC043408975 Worker Comp (AZ,GA,VA) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	
C		N/A		WC043408976 Worker Comp (AOS) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	
C		N/A		WC043408977 Worker Comp (KY,NC,UT) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	
B		N/A		WC6636253 Worker Comp (OH) SIR applies per policy terms & conditions	01/01/2014	11/01/2014	

Contract Control Number: PWADM-201414664-00

Contractor Name: RUSH TRUCK CENTERS OF COLORADO INC

By:  _____

Name: MICHAEL RUSSELL
(please print)

Title: REGIONAL MANAGER
(please print)

ATTEST: [if required]

By: _____

Name: _____
(please print)

Title: _____
(please print)



Contract Control Number:

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of

SEAL

CITY AND COUNTY OF DENVER

ATTEST:

By _____

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

By _____

By _____

By _____

