

ORDINANCE/RESOLUTION REQUEST

Please email requests to the Mayor's Legislative Team

at MileHighOrdinance@DenverGov.org by **3:00pm on Monday**. Contact the Mayor's Legislative team with questions

Date of Request: **05/30/2019**

Please mark one: Bill Request or Resolution Request

1. Type of Request:

- Contract/Grant Agreement Intergovernmental Agreement (IGA) Rezoning/Text Amendment
 Dedication/Vacation Appropriation/Supplemental DRMC Change
 Other:

2. **Title:** (Start with *approves, amends, dedicates*, etc., include name of company or contractor and indicate the type of request: grant acceptance, contract execution, contract amendment, municipal code change, supplemental request, etc.)

Ordinance request per City Council 20-1(b) to purchase Four McCandless Rear Loader Refuse 25 yard, Crane Carrier Cab and Chassis with Heil Rear Loader Refuse Body. PO-00066109. REF# 19-095, 19-096, 19-097, 19-098.

3. **Requesting Agency:** Public Works Solid Waste

4. Contact Person:

Contact person with knowledge of proposed ordinance/resolution	Contact person to present item at Mayor-Council and Council
Name: Gary Bales	Name: Jason Gallardo
Email: gary.bales@denvergov.org	Email: Jason.Gallardo@denvergov.org

5. **General description or background of proposed request. Attach executive summary if more space needed:**

New units will be purchased using the Planned Fleet Replacement Fund and will be used by Solid Waste

6. **City Attorney assigned to this request (if applicable):** N/A

7. **City Council District:** N/A

8. ****For all contracts, fill out and submit accompanying Key Contract Terms worksheet****

Key Contract Terms

To be completed by Mayor's Legislative Team:

Resolution/Bill Number: _____

Date Entered: _____

Type of Contract: (e.g. Professional Services > \$500K; IGA/Grant Agreement, Sale or Lease of Real Property): Purchase Order

Vendor/Contractor Name: Kois Brothers Equipment Company

Contract control number: Purchase Order # PO-00066109

Location: Fire Department Fleet Maintenance

Is this a new contract? Yes No Is this an Amendment? Yes No If yes, how many? _____

Contract Term/Duration (for amended contracts, include existing term dates and amended dates):

Contract Amount (indicate existing amount, amended amount and new contract total):

<i>Current Contract Amount (A)</i>	<i>Additional Funds (B)</i>	<i>Total Contract Amount (A+B)</i>
\$1,217,088.00		\$1,217,088.00

<i>Current Contract Term</i>	<i>Added Time</i>	<i>New Ending Date</i>
Undetermined		

Scope of work: Required for Solid Waste

Was this contractor selected by competitive process? Yes If not, why not?

Has this contractor provided these services to the City before? Yes No

Source of funds: PLANNED FLEET REPLACEMENT FUND: 11804

Is this contract subject to: W/MBE DBE SBE XO101 ACDBE N/A

WBE/MBE/DBE commitments (construction, design, Airport concession contracts): N/A

Who are the subcontractors to this contract?

To be completed by Mayor's Legislative Team:

Resolution/Bill Number: _____

Date Entered: _____

DO NOT INVOICE THIS ADDRESS

City and County of Denver
 Purchasing Division
 201 W. Colfax Ave Dept. 304
 Denver, CO 80202
 United States of America
 Ph: 720-913-8100 Fax: 720-913-8101



Purchase Order Number	PO-00066109
Purchase Order Date	May 8, 2019
Contract ID	
Payment Terms	Net 30
Payment Type	ACH
Buyer	Michael Romero (720) 913-8122 Michael.Romero@denvergov.org

Supplier
KOIS BROTHERS EQUIPMENT COMPANY 5200 COLORADO BOULEVARD COMMERCE CITY, CO 80022 United States of America Ph: (303) 298-7370

Ship-To
5440 Roslyn Area 5440 Roslyn St Denver, CO 80216 United States of America Gary Bales

Bill To
Bill To Same As Ship To Denver, CO 80202 United States of America Gary Bales

	Currency	Total Lines Amount	Tax Exempt	Total PO Amount
	USD	\$1,217,088.00	98-02890-0000	\$1,217,088.00
	Shipping Terms	Shipping Method	Shipping Instructions	
	FOB Destination	Common Carrier		

Goods Lines								
Line Number	Item Name	Supplier Item Identifier	Description	Due Date	Unit of Measure	Quantity	Unit Price	Line Amount
1			Rear loader refuse 25 yard three-seats REF# 19-095 through 19-098 Crane Carrier Cab and Chassis with Heil Rear Loader Refuse Body See requirements per City and County of Denver Specification- See Exhibit "A"	01/10/2020	Each	4	\$304,272.00	\$1,217,088.00
Rear loader refuse 25 yard three-seats REF# 19-095 through 19-098								

Rear Loader Refuse, 25 yard, three seats
Ref #19-095, 19-096, 19-097, 19-098
Vendor to fill in and submit attached Exhibit-Vehicle Check-In.
Delivery will NOT be considered complete without it.
Vendor contact notes:
Ernest J. Kois
ekois@koisbrothers.com
Office 303-298-7370 ex. 115

Coordinate build with:
Gary Bales | Operations Manager
Fleet Management | Public Works | City and County of Denver
720.337.1197
Gary.bales@denvergov.org
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
Call to coordinate delivery: (720) 865-3900

Title to Read:
City and County of Denver, 201 West Colfax Avenue Dept 304, Denver, CO 80202
Documents to be provided upon delivery:
Application for Title, State of Colorado
Odometer Statement

Purchase made pursuant to DRMC 20-64.5 of the Revised Municipal Code: Cooperative Purchasing: NJPA/ SOURCEWELL Award RFP 112014 and DRMC 20-64(A)(4) of the Revised Municipal Code. Standardization

City Use Origin Funds
5053400 Public Works Fleet Management – Replacement
11804 Planned Fleet Fund

3.26(e)-This Purchase Order is contingent on Council approval and is void without such action.



Authorized By

By accepting this Purchase Order you agree to the Terms and Conditions of the General Services Purchasing Division.
Follow the URL provided to the Purchase Order Terms and Conditions –
<http://www.denvergov.org/content/denvergov/en/purchasing-main-page/POterms.html>

CITY PO EXHIBIT
City and County of Denver
Fleet Management
Vendor Supplied Information Data

City Unit(s) # _____

(City Use Only)

ENTER CITY PURCHASE ORDER NUMBER: PO- _____
Example: PO-00003584

The following underlined forms and information are REQUIRED for new vehicle deliveries:

- Copy of entire Purchase Order (all pages)
- Original MSO (Manufacturers Statement of Origin) – is required for all vehicles except off-road and construction equipment. May receive one for some off road equipment if manufacturer issues one.
Name of purchaser: **City and County of Denver**
Address: **201 W. Colfax Ave. Dept. 304**
Denver, CO 80202
- Secured Dealer Bill of Sale (DR2407) – IN STATE ONLY – Required for on the road vehicles Such as cars, pickup[s], vans and any vehicle under 16,000 GVWR. Not needed if odometer Section is filled out and signed on MSO. Not required on vehicles over 16,000GVWR LBS.
- Application for Title and Registration (DR2395) – Required for all on-road vehicles and trailers.
- Verification of Vehicle Identification Number (DR2698) – Required for all Vehicles coming from an out of state dealer, incomplete vehicle. I.E. Cab and Chassis.
- Statement of Fact (DR2444) - Required on all vehicles with modifications to the cab and chassis. Such as a body crane, auxiliary engine, etc. The statement of fact must include the modifications made and include VIN numbers of chassis and equipment.
- Special Mobile Machinery Form (DR2689) - Required on all off road and Construction equipment. I.E. Front end loaders, tractors, skid steer loaders, Mowers, air compressors, motor graders, etc.
- Weight slip required - (on all incomplete vehicles that are made into a complete vehicle) – and all off-road equipment and construction type equipment. (Front end loaders, sweepers, graders, air compressors, rollers, etc.).
- Temporary License Plate – Required for all on-road vehicles. Not required for off road Equipment.
- Original Dealer Invoice – Required for all vehicles on and off the Road.
- Receipt or Contract for Optional Warranty – Only if spec or called out on P.O.
- Shop and Parts manuals (as required) (CD or electronic form preferred) – Only if spec or show as a line item of P.O.

Dealer Signature: _____ Date: _____

KOIS BROTHERS-PRIME CONTRACTOR
EQUIPMENT COMPANY INC.

KOIS
BROTHERS

DENVER
 5200 Colorado Blvd.
 Commerce City, CO 80022
 Phone: 303-298-7376
 Fax: 303-298-3527

BILLINGS
 2107 Harmish Blvd.
 Billings, MT 59101
 Phone: 406-652-3975
 Fax: 406-652-3744

GREAT FALLS
 1610 River Drive North
 Great Falls, MT 59401
 Phone: 406-452-2757
 Fax: 406-452-2799

SOLD TO:

C & C OF DENVER PUBLIC WORKS
 ACCOUNTS PAYABLE
 201 W. COLFAX AVE. DEPT. 908
 DENVER CO 80202-5328

SHIP TO:

C & C OF DENVER PUBLIC WORKS
 MICHAEL ROMERO - SENIOR BUYER
 201 W. COLFAX AVE. DEPT. 908
 DENVER CO 80202-5328

DATE 04/22/19
 PAGE 1

QUOTE 19-1223

CUSTOMER PO	CUSTOMER NUM	SHIP VIA	SALESMAN	TERMS	CUSTOMER PHONE	
SOURCE WELL	4375	DELIVERED	2	NET 10	720-913-8811	
PART NUMBER	DESCRIPTION	QTY	ORD	UOM	PRICE	EXTENDED
SOURCEWELL CONTRACT NUMBER 112014-THC						

Dear Michael,

We are pleased to submit the following quotation for your consideration. The equipment we are providing is supplying the best possible solution to your equipment needs. We strive to give the highest quality of equipment so that your up time is maximized. Please review the quote and let us know if there is anything we can change for you. Thank you for working with Kois Brothers Equipment Company. We look forward to meeting your needs. This quote is good through July 1, 2019.

Thank You,

Ernest J Kois
 Ernest J Kois
 720-951-1370 cell



Awarded Contract

CCC CABOVER LET2 CC	*4 MAN CAB W/BELTS	PER SPEC	1.00	EA	207,841.00	207,841.00
KBHE-1200030	FORMULA 5000 25 YD HIGH COMPACTION REAR LOADER		1.00	EA	77,910.00	77,910.00
CONCESSION SOURCEWEL	*GIVEN TO DENVER PURCHASING		-1.00	EA	10,950.00	-10,950.00
STEEL SURCHARGE DUE	*TO TARIFF ON IMPORTED STEEL		1.00	EA	0.00	0.00
LABOR	FACTORY MOUNT OF PACKER		1.00	EA	0.00	0.00
KBHE-1200210	HOPPER FLOOR OVERLAY 3/16" 150,000 PSI RQC 321 094-1438		1.00	EA	1,555.00	1,555.00

Contract #112014-THC

*** CONTINUED NEXT PAGE ***

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Fax: 303-298-8527

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PART NUMBER	DESCRIPTION	QTY	ORD	UOM	PRICE	EXTENDED
KBHE-1200185	SIDE ACCESS DOOR 112-5499	1.00		EA	540.00	540.00
KBHE-272-7979-011	*AUTOMATIC DOOR LOCKS REAR T.G.	1.00		EA	3,935.00	3,935.00
KBHE-070-1917	*KNARLED BOLT ON REAR HANDLES	1.00		EA	580.00	580.00
36 "X18"X18" TOOLBOX	*STEEL BODY MOUNTED CURBSIDE	1.00		EA	790.00	790.00
KBHE-1200320	FRONT LIVE POWER PUMP SYSTEM WITH ELEC.OVERSPEED CONTROL	1.00		EA	7,115.00	7,115.00
HYDRAULIC FILTRATION	*PARKER FILTERS 100/10 WPF-7000	1.00		EA	750.00	750.00
PARKER HYDRAULIC	*TEST PORT MOUNT VALVE/TANK	1.00		EA	845.00	845.00
PARKER 1" ID FITTINGS	*KIDNEY OPERATIONS FILTER OIL	1.00		EA	645.00	645.00
BUZZER KIT LEFT/RIGH	*MOUNTED EACH SIDE OF HOPPER	1.00		EA	175.00	175.00
TRUCK-LITE WARRANTY	*LIFETIME 12VDC FIT N'FORGET	1.00		EA	630.00	630.00
BACK UP LIGHTS LED	*FLUSHED MOUNTED 44PN44206C	1.00		EA	520.00	520.00
TRUCK-LITE LED FULL	*SMART LIGHTING SYSTEM 2-2-2SEA	1.00		EA	1,035.00	1,035.00
SIGNAL STAT 623W	*WORK LIGHT HOPPER DASH MNT SWT	1.00		EA	485.00	485.00
KBHE-1200530	MUD FLAPS, ANTI-SAIL/SPLASH AHEAD OF REAR TIRES 272-3289 *** CONTINUED NEXT PAGE ***	1.00		EA	235.00	235.00

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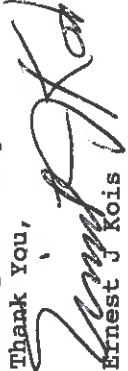
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*** CONTINUED NEXT PAGE ***



Awarded Contract

Contract #112014-THC

EA 207,841.00 207,841.00

EA 77,910.00 77,910.00

EA 10,950.00 -10,950.00

EA 0.00 0.00

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EA 1,555.00 1,555.00

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PART NUMBER	DESCRIPTION	QTY	ORD	UOM	PRICE	EXTENDED
DOT - C2 TAPE	*NO. 108 CONSPICUITY TAPE BODY	1.00	EA	EA	110.00	110.00
MAIN BODY COLOR	*SHITE IMRON 6000 & UNDERCOAT	1.00	EA	EA	350.00	350.00
TWO TONE REAR	*TAILGATE SAFETY YELLOW PAINT	1.00	EA	EA	1,535.00	1,535.00
FED 607101-02	*AMBER STROBES MOUNTED IN BOXES	4.00			321.25	1,285.00
LABOR INSTALL	INSTALLATION LABOR	1.00	EA	EA	0.00	0.00
372-1158 SHOVEL/BROO	MOUNT THE STROBES IN UPPER PNL					
	*MOUNT FRONT OF REAR LOAD BODY	1.00	EA	EA	275.00	275.00
KBHE-1300495	DISPLAY SIGN FRAME 1/16" THICK	1.00	EA	EA	2,085.00	2,085.00
	33" HIGH X 115" LONG					
LABOR INSTALL	INSTALLATION LABOR	1.00	EA	EA	0.00	0.00
12000 LB DRUM WINCH	MOUNT & PAINT TOUCH UP SIGNS	1.00	EA	EA	6,010.00	6,010.00
	*HYDRAULIC DRIVEN HANDLES OPS					
DUAL CART TIPPER	*HANDLES VALVE EACH SIDE HOPPER	1.00	EA	EA	0.00	0.00
PERKINS D6220 TIPPER	*CART TIPPER HYD HOOK INTO HNDL	2.00	EA	EA	6,447.00	12,894.00
LABOR INSTALL	INSTALLATION LABOR	1.00	EA	EA	0.00	0.00
	MOUNT TIPPERS INTO HYDRAULICS					
4804C BRIGADE VIA	*4 CAMERA SYST ON CURRENT FLEET	1.00	EA	EA	3,996.00	3,996.00
LABOR INSTALL	4 CAMERA SYSTEM SHOWING WHERE THE TRUCK IS AT ALL TIMES ON THE ROAD AND BACKING INTO LOCATIONS.					
	INSTALLATION LABOR	1.00	EA	EA	0.00	0.00
	MOUNT CAMERAS ON TRUCK					

*** CONTINUED NEXT PAGE ***

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	INSTALLATION LABOR	1.00	EA	EA	0.00	0.00
	MOUNT CAMERAS ON TRUCK					

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CUSTOMER PO CUSTOMER NUM SHIP VIA SALESMAN TERMS CUSTOMER PHONE
SOURCE WELL 4375 DELIVERED 2 NET 10 720-913-8811

PART NUMBER DESCRIPTION QTY ORD UOM PRICE EXTENDED



Awarded ontract

Contract #112014-THC

Sub Total 0.00
Sales Tax 0.00
F.E.T. 0.00
Freight 0.00

THANK YOU FOR ALLOWING US TO QUOTE THESE ITEMS. YOUR COST IS TOTAL

**Reference Nos./Original
Three Seat Rear Loaders/Revised 2019/Final**

**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 bench style three seat, 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.



- 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.	<p>Left Side Operator Cab Area to include:</p> <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.	<p>Operator/Passenger Seat Configuration</p> <ol style="list-style-type: none"> 1. Street Side and Curbside captains seats with a two passenger bench-seat between Captains Seats
C.	<p>Mirror width for use in obstructed areas to include:</p> <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.	<p>Warranty:</p> <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.
E.	<p>Service Ability:</p> <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

2.1

Build Status of Vehicles:
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:



Vendor/Sub Vendor.

- 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 manufacturer.
- C. Cab and chassis manufacturer's date of order acceptance. Written order confirmation is required.
- D. Placement date of initial order with the body manufacturer.
- 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, 3-man cab 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: Crane Carrier Model: LET2 CC Left Side: <input checked="" type="radio"/> Yes <input type="radio"/> No Rating: 66,000 lbs Wheelbase: 188" C to A: 158" A F: 60" Cut Angle: Left 50° Right 50° Turn Dia.: 74'	\$227,434.00
B.	The left side operator configuration is very important for operator		

Description of Equipment	Offered Equipment	Cost
<p>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.</p>		
<p>C. Frame: 1. Rating 66,000-lbs. GVWR minimum, 2. Heavy-duty 120,000-psi full channel heat-treated steel, with main frame 2,088,000 in-lb. RBM and deep frame section 3,235,000 in-lb. minimum.</p>	<p>Frame Rating: 66,000 _____-lbs Yield Strength: 120,00 _____psi Section Modulus/rail: 28.08 _____in² Frame RBM/rail: 3,369,600 _____lb-ft-in</p>	<p>\$ 2,064 _____</p>
<p>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.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ N/C _____</p>
<p>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.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No Make: _____ Crane Carrier _____ Model: _____</p>	<p>\$ 748 _____</p>
<p>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.</p>	<p>Cost for 5 additional set of keys: \$ 55 _____ <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ NC _____ \$ 55 _____ \$ N/C _____</p>

3.2

Engine or "Approved Equal"	Offered Equipment	Cost
<p>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</p>	<p>Make: Cummins _____ Model: X12 _____ HP: 350 _____ @ 1700 _____rpm Torque: 1450 _____ @ 1200 _____rpm Emissions Rating: EPA 2017</p>	<p>\$ 28,843 _____</p>



Vendor/Sub Vendor:

Description of Equipment	Offered Equipment	Cost
<p>height.</p> <p>2. The air intake shall be positioned so that it can not draw in exhaust gases.</p> <p>3. Air filter dual element dry type with air inlet restriction indicator located in cab</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Make: <u>Parker</u> Model: <u>13" Steel Intake</u></p>	
<p>E. Exhaust Meeting 2018 EPA Standards:</p> <p>1. Exhaust discharge shall be center back of cab.</p> <p>2. The exhaust after treatment device shall be horizontally mounted above the engine so as to not obstruct maintenance/repairs underneath the truck.</p> <p>3. Maximum exhaust system height shall not be higher than the highest point on the body or truck.</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>6. Exhaust "90 degree chrome elbow" directed toward outside of body.</p>	<p>Trap Make: <u>Cummins</u> Model: <u>Single module</u> Location: <u>Left hand side</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><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>246</u></p>
<p>F. Fuel Tank:</p> <p>1. Fuel tank 80 gallons minimum,</p> <p>2. The tank shall frame mounted on the right side of chassis to provide step and platform for accessing the body clean-out door.</p> <p>3. Fuel tank may be combined with body supplier's hydraulic tank.</p>	<p>Size: <u>80</u> gallons Location: <u>Right hand side</u></p>	<p>\$ <u>93</u></p>
<p>G. 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>Right hand side by fuel tank</u> DEF Tank Volume: <u>10</u> gallons <input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ <u>N/c</u></p>
<p>H. Coolant Hoses:</p> <p>1. Gates Blue Stripe hoses</p> <p>2. With constant torque hose clamps.</p>	<p><u>Constant torque clamp</u></p>	<p>\$ <u>N/C</u></p>
<p>I. 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>Crane carrier</u> Model: <u>Hydraulic remote fan</u> Operates of coolant temperature</p>	<p>\$ <u>725</u></p>
<p>J. 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>Make: <u>Wabco</u> Model: <u>18.7</u> Capacity: <u>18.7</u> cfm Location: <u>Mounted in frame rails</u></p>	<p>\$ <u>N/C</u></p>



Vendor/Sub Vendor:

Description of Equipment	Offered Equipment	Cost
<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 under battery box, left side in an easy to access and operate position.</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><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><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>\$ 155</p>
<p>K. 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>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.</p> <p>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.</p> <p>5. Cold weather starting assist (no either allowed).</p>	<p>Make: <u>Phillips</u> Model: <u>ZeroStart</u></p> <p>On Temperature: <u>40</u></p> <p>Off Temperature: <u>55</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>Location: <u>Bumper mount</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Type: <u>Cummins cold ambient protection</u></p>	<p>\$ 427</p> <p>\$ 67</p> <p>\$ NC</p> <p>\$ NC</p> <p>\$ NC</p>

3.3

Transmission and Drivetrain

Description of Equipment	Offered Equipment	Cost
<p>A. Transmission shall be an Allison New World HD4560P, wide ratio, 6-speeds with the following components:</p> <p>1. Transmission and rear differential gearing shall be optimized for "Best" fuel economy, speed shall not be less than 60 mph.</p> <p>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.</p>	<p>Make: <u>Allison</u> Model: <u>4500 RDS-P</u></p> <p>Speeds: <u>6</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>\$ 17,344</p> <p>\$ NC</p>



Description of Equipment	Offered Equipment	Cost
<p>3. Transmission interface wiring for Allison MD/HD transmission.</p> <p>4. Electric push-button transmission controls shall be located on the "dog house" not under the joystick armrest. Location to be mutually agreed upon.</p> <p>5. Transynd TES 295 automatic transmission fluid.</p> <p>6. Deep pan transmission sump with "Gold Series" filter kit rated for severe duty of 75,000 miles or 36 months.</p> <p>7. Transmission water-to-oil cooler.</p> <p>8. Remote mounted transmission filter.</p> <p>9. Magnetic drain plug.</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><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: <u>Dana</u> Model: <u>D46-16DP</u></p> <p>Gear ratio: <u>6.14</u></p> <p>Top Speed: <u>63</u> mph level</p>	<p>\$ <u>1441</u></p>
<p>B.</p> <p>Rear Axles:</p> <p>1. Eaton single reduction, capacity 46,000-lbs.</p> <p>2. Driver controlled main power divider locking differential.</p> <p>3. Oil pump.</p> <p>4. Axle temperature sensor.</p> <p>5. Axle ratio for best fuel economy with an approximate 60-mph top speed.</p> <p>6. Oil seals, Union 76 Triton EP 75W-90 synthetic gear lubricant.</p> <p>7. Magnetic drain plug.</p> <p>Front Axle:</p> <p>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</u> Model: <u>D2000F</u></p> <p>Capacity: <u>20,000</u></p>	<p>\$ <u>NC</u></p>
<p>D.</p> <p>Springs:</p> <p>1. Front leaf with graphite impregnated spring pin bushings. Front capacity 20,000-lbs. minimum.</p> <p>2. Rear Hendrickson HMX-460 Haulmaxx varirate spring system. Rear capacity 46,000-lbs. minimum.</p> <p>Brakes:</p> <p>1. Bendix, 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads.</p> <p>2. Bendix, 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads.</p> <p>3. High temp/Heavy Duty Brake pads installed upon delivery</p> <p>4. Brake chambers type 2824, size 24 chamber.</p> <p>Anti-Lock Brake System / Automatic Traction Control system:</p> <p>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.</p> <p>2. Automatic Traction Control (ATC) shall work in conjunction with</p>	<p>Make: <u>Crane Carrier</u> Model: _____</p> <p>Capacity: <u>20,000</u> - lbs</p> <p>Make: <u>Hendrickson</u> Model: <u>Haulmaxx</u></p> <p>Capacity: <u>46000</u> - lbs</p> <p>Front Make: <u>Bendix</u> Model: <u>ADB-22x</u></p> <p>Disc Size: <u>17</u> in</p> <p>Rear Make: <u>Bendix</u> Model: <u>ADB-22x</u></p> <p>Front Chamber: <u>2824</u></p> <p>Rear Chamber: <u>2824</u></p> <p>Make: <u>Eaton</u> Model: <u>6s6m</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>\$ <u>226</u></p> <p>\$ <u>468</u></p> <p>\$ <u>4896</u></p> <p>\$ <u>1303</u></p> <p>\$ <u>NC</u></p>
<p>E.</p> <p>Brakes:</p> <p>1. Bendix, 17" disc front, model ADB22x extended service brakes with non-asbestos brake pads.</p> <p>2. Bendix, 17" disc rear, model ADB225 extended service brakes with non-asbestos brake pads.</p> <p>3. High temp/Heavy Duty Brake pads installed upon delivery</p> <p>4. Brake chambers type 2824, size 24 chamber.</p> <p>Anti-Lock Brake System / Automatic Traction Control system:</p> <p>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.</p> <p>2. Automatic Traction Control (ATC) shall work in conjunction with</p>	<p>Make: <u>Crane Carrier</u> Model: _____</p> <p>Capacity: <u>20,000</u> - lbs</p> <p>Make: <u>Hendrickson</u> Model: <u>Haulmaxx</u></p> <p>Capacity: <u>46000</u> - lbs</p> <p>Front Make: <u>Bendix</u> Model: <u>ADB-22x</u></p> <p>Disc Size: <u>17</u> in</p> <p>Rear Make: <u>Bendix</u> Model: <u>ADB-22x</u></p> <p>Front Chamber: <u>2824</u></p> <p>Rear Chamber: <u>2824</u></p> <p>Make: <u>Eaton</u> Model: <u>6s6m</u></p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>\$ <u>226</u></p> <p>\$ <u>468</u></p> <p>\$ <u>4896</u></p> <p>\$ <u>1303</u></p> <p>\$ <u>NC</u></p>



Vendor/Sub Vendor:

Description of Equipment	Offered Equipment	Cost
<p>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.</p> <p>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.</p> <p>4. Air lines shall be color-coded nylon type.</p>	<p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p> <p>Make: <u>Bendix</u> Model: <u>AD-IP</u></p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>\$ <u>NC</u></p> <p>\$ <u>NC</u></p>
<p>G. Air Dryer, (No Approved Equals)</p> <p>1. Bendix AD-IP with heated steel reservoir, automatic moisture ejector and cable operated air tank drain valves accessible from outside of vehicle.</p> <p>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>	<p>Make: <u>Spicer</u> Model: <u>SPL-170</u></p> <p>Make: <u>Sheppard</u> Model: <u>xd-120</u></p> <p>Reservoir Size: <u>16 qt</u></p>	<p>\$ <u>NC</u></p> <p>\$ _____</p>
H. Driveline:		
I. Power Steering:		
1. TRW with 2-qt. reservoir.		

3.4

Electrical System	Offered Equipment	Cost
Description of Equipment		
A. Alternator:		
1. Alternator shall be a heavy duty, internally regulated, output 160-amp minimum.	<p>Make: <u>Delco</u> Model: <u>24SI</u></p> <p>Rating: <u>160</u> amps</p>	<p>\$ _____</p>
B. Batteries:		
<p>A. Two or three Group 31 batteries with a total CCA of 1950 minimum.</p> <p>B. Battery location frame mounted left hand side.</p> <p>C. Battery shut-off switch easy to see and access.</p> <p>D. Jump start provision easy to access.</p> <p>E. Battery cables (00) stranded copper minimum.</p> <p>F. PulseTech XC-Parallel Charger P/N 100X013</p>	<p>Quantity: <u>3</u> CCA's: <u>2775</u></p> <p>Battery Location: <u>Left hand side</u></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>\$221</p>
C. Circuit Protection:		
<p>1. Circuit breakers with manual reset, no fuses.</p> <p>2. Circuit breaker panel shall be easy to access.</p> <p>3. Circuit breaker panel shall be clearly labeled for easy identification.</p>	<p>Type Protection: <u>Circuit breakers</u></p> <p><input checked="" type="checkbox"/> Yes No</p> <p><input checked="" type="checkbox"/> Yes No</p>	<p>\$ <u>NC</u></p>
D. Wiring:		



Description of Equipment	Offered Equipment	Cost
<ol style="list-style-type: none"> Wiring shall be color coded with hot stamped wire numbers. All wiring shall be run in sealed wiring looms to reduce corrosion from magnesium chloride products 	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	\$ NC
E. Body Builders Junction Box: <ol style="list-style-type: none"> Body builder's junction box shall be mounted behind the cab Terminal shall be marked for easy identification. 	Location: <u>Located behind cab</u> Yes <input type="checkbox"/> No <input type="checkbox"/>	\$ NC
F. Back Up Alarm: <ol style="list-style-type: none"> 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. The alarm shall be mounted out of the vehicle's rear wheel splash area. 	dBa rating: <u>107</u> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	\$ NC
G. Cab and Chassis Lights: <ol style="list-style-type: none"> Halogen sealed beam headlights, 12v. Daytime running lights. Wiring shall be sealed modular plug-in type. Marker lights LED type. 	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"/> Make: <u>CCC</u> Model: _____	\$ NC

3.5

Description of Equipment	Offered Equipment	Cost
Cooling System		
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.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	\$ 575
B. Coolant protection shall be -34° F.	Provide specs: <u>-34 degree</u>	\$ NC
C. Fleetguard coolant filter WF2071.	Provide specs: <u>Fleetguard WF2071</u>	\$ 257

3.6

Description of Equipment	Offered Equipment	Cost
Tires and Wheels		
A. Tires: <ol style="list-style-type: none"> Tires: 315/80R22.5, tubeless, 20-ply, load range L. Bridgestone M860A, Steer Tires. Rear dual: Bridgestone M843, Traction Tread 	M860 discontinued. Make: <u>Goodyear</u> Model: <u>WHA Duraseal</u> Make: <u>Bridgestone</u> Model: <u>m843</u>	\$ 688 \$ 7851
B. Wheels: <ol style="list-style-type: none"> Disc, 10-hole, Hub piloted type, Single nut, Meets ISO Standard 4107. 	Make: <u>Accuride</u> Model: _____	\$ 2165



	2. Aluminum wheels all axle	<input checked="" type="radio"/> Yes <input type="radio"/> No	
	3. Front 22.5" x 9"	Size: 22.5" x 9"	
	4. Rear 22.5" x 9"	Size: 22.5" x 9"	
C.	Wheel offset shall limit tire exposure beyond/outside the refuse body. Tire exposure outside of body shall be no more than 2"	<input checked="" type="radio"/> Yes <input type="radio"/> No	

3.7

Interior		Offered Equipment	Cost
A.	<p>Left side operating controls:</p> <ol style="list-style-type: none"> Vehicle operation shall be only from left side of vehicle. Driver's controls shall be ergonomically laid out for maximum driver efficiency in operating the rear loader collection body. 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. 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. Doors: <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. 	<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	\$ _____ \$ NC _____
B.	<p>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 	Drawings Provided: <input checked="" type="radio"/> Yes <input type="radio"/> No Paper Size: _____ " X _____ "	\$ _____ \$ NC _____



Vendor/Sub Vendor.

	Description of Equipment	Offered Equipment	Cost
	<p>will minimize on-the-job related physical problems.</p> <p>5. The City, body vendor and the vehicle supplier shall mutually determine control locations after Contract award.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
F.	<p>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), DEF Fluid level.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	\$ NC
G.	<p>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="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Tilt: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Telescoping: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Travel In-Out: N/A in</p>	\$ NC \$ NC
H.	<p>Upfitter's Switch Panel:</p> <p>1. The vehicle manufacturer shall provide for the rear loader body manufacture an upfitter's switch panel for automated body control switches.</p> <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><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>	\$ NC
I.	<p>Windsfield Wipers:</p> <p>1. Wipers 2-speed self parking.</p> <p>2. Intermittent wiper mode.</p>	<p>Speeds: <u>2</u> <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes</p>	\$ NC
J.	<p>Floor Covering:</p> <p>1. Floor covering shall be heavy-duty black rubber/vinyl flooring.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	\$ NC
K.	<p>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>Refrigerant Type: _____</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	\$ NC
L.	<p>Radio:</p> <p>1. Radio AM/FM stereo with two speakers.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	\$ NC
M.	<p>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</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	\$ NC



Vendor/Sub Vendor: _____

Description of Equipment	Offered Equipment	Cost
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3.8

Exterior:		Offered Equipment	Cost
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: _____	\$ NC
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>Severe Service</u> Body Material: <u>Steel</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Step Height: <u>18</u> in	\$ <u>6,001</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: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Bumper Finish: <u>Black Paint</u>	\$ <u>NC</u> \$ <u>NC</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>Bright White</u>	\$ <u>NC</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 <input type="checkbox"/> No	\$ <u>NC</u>
F.	Fire extinguisher: 1. Extinguisher ABC, 5-lb. dry type rechargeable 2. Installed on driver's side of refuge body with splash guard to prevent mud and debris from collecting in this area. 3. Location labeled with 1" letters on outside of the cab.	Type: <u>20lb bracket and cover provided by body manufacturer.</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
G.	Mirrors: "No Approved Equal"		

Description of Equipment	Offered Equipment	Cost
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3.8

Description of Equipment	Offered Equipment	Cost
Exterior:		
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.	Offered Equipment Provide Materials: _____ _____ _____	\$ _____
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: _____ Body Material: _____ Yes No Yes No Step Height: _____ In	\$ _____
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: _____ Yes No Reinforced on outside corners: _____ Yes No	\$ _____
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.	Bumper Finish: _____ Make: _____ Type: _____ Color: _____	\$ _____
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.	Yes No	\$ _____
F. Fire extinguisher: 1. Extinguisher ABC, 5-lb. dry type rechargeable 2. Installed on driver's side of refuge body with splash guard to prevent mud and debris from collecting in this area. 3. Location labeled with 1" letters on outside of the cab.	Type: _____ 20 lb. Bracket and Cover _____ Yes No	\$ 510.00
G. Mirrors: "No Approved Equal"		

<p>1. Rear view mirrors to be Moto Mirror Model 7-5400 "Flat Back Traditional" 7" x 16" motor head, remote, heated, stainless steel left and right, mounted on the cab.</p> <p>2. Convex 8" stainless steel mirrors mounted under primary mirror</p> <p>3. A right hand down mirror shall be provided to cover front and side blind spot for shorter drivers</p>	<p>Make: Crane Carrier Model: D package Overall mirror full extended width: 102 inches Overall mirror width with left side mirror folded in: 98 inches Make: Crane Carrier Model: Spot mirror</p>	<p>\$ 896</p> <p>\$ 188</p>
<p>H. Splash/Spray Suppression:</p> <p>1. Spray suppression skirting, Fleet Engineering Inc. 4" brush filament P/N 997-70174, black polyethylene, (800.333.7890)</p> <p>2. Local distributor: Fleetpride 7725 Dania St Commerce City CO (303.288.1166)</p> <p>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.</p>	<p>Brand: Crane Carrier P/N: N/A</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p>	<p>\$ 335</p>

VEHICLE SUB TOTAL COST \$309,033
 -101,192 discount
\$207,841 Vehicleprice

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. Hydraulic hoses shall be covered with protective spiral nylon anti-chaffing wrap or sock type protective sleeves at all areas where chaffing/rubbing could cause premature wear/failure.
- J. Galvanized fittings and thread tape shall not be used.
- 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 1/2-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. Weld 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	Cost

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 rear loading refuse collection vehicles of this size and capacity as specified. 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. 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 No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ 77,910.00</p>
<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: Heil Model: DuraPack 5000 Capacity: 25 yds³</p> <p>Provide specs:</p> <p>Meet</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>D. The compactor body shall have:</p> <ol style="list-style-type: none"> Body capacity 25 cubic yards. Capable of packing 1000-lbs. to 1200-lbs per cubic yard based on average household refuse. Hopper cycle time 28-seconds. Hopper capacity must be greater than 3.5 cubic yards. Hopper loading height must not exceed 40" while using MB43 traction tires. Ejector panel shall fully travel full length of the body to completely eject the compacted load of refuse. 	<p>Capacity: 25 yds³ Packed Capacity per Yard: 1200 lbs</p> <p>Hopper Cycle Time: 24-28 Seconds Hopper Capacity: 3.94 yds³ Hopper Loading Height: 5" Below chassis rail in Yes No</p>	
<p>E. The compactor body shall be:</p> <ol style="list-style-type: none"> Installed with 7" clearance from the exhaust or air intake system. Body width shall not exceed 96-inches. 	<p>Clearance: 7-9" in Body Width: 96" in</p>	

Description of Equipment	Offered Equipment	Cost
<p>3. Body length, 22'-6".</p> <p>4. Body height above frame rails, 96" maximum.</p> <p>5. The body shall be mounted on steel runners (wood not permitted).</p> <p>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.</p> <p>7. Body sides, top, 8-gauge hi-tensile 80,000-psi steel.</p> <p>8. Body floor, 3/16" hi-tensile 80,000-psi steel with 3/8" hi-tensile 80,000-psi steel rear ramp.</p> <p>9. Floor smooth no trough, 5/16" 150,000-psi steel.</p> <p>10. Hopper floor 5/8" 150,000-psi hi-tensile abrasion resistant steel.</p> <p>11. Hopper sides lower 3/16" 150,000-psi steel.</p> <p>12. Main floor 5/8" 150,000-psi steel.</p> <p>13. Packer plate, heavy-duty 3/16" 150,000-psi steel.</p> <p>14. Carrier plates, 3/16" 150,000-psi steel.</p> <p>15. Carrier plate rotates on 2 heavy-duty forged arms, with tapered roller bearings with easy to access grease fittings.</p> <p>16. Ejector panel, 3/16" 80,000-psi steel.</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>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>Body Length: <u>22</u> ft <u>0</u> in</p> <p>Body Height from Ground: <u>8</u> ft <u>0</u> in</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Thickness: <u>8</u> Steel Strength: 80,000 psi</p> <p>Thickness: <u>3/16"</u> Steel Strength: 80,000 psi</p> <p>Thickness: <u>5/16"</u> Steel Strength: 150,000 psi</p> <p>Thickness: <u>5/8"</u> Steel Strength: 150,000 psi</p> <p>Thickness: <u>3/16"</u> Steel Strength: 150,000 psi</p> <p>Thickness: <u>5/8"</u> Steel Strength: 150,000 psi</p> <p>Thickness: <u>3/16"</u> Steel Strength: 150,000 psi</p> <p>Thickness: <u>3/16"</u> Steel Strength: 150,000 psi</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Thickness: <u>3/16"</u> Steel Strength: 80,000 psi</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Size: <u>31"x41"</u> with Interlock turns pump off</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Size: <u>1.25</u> inch Bolt on Knarnted Handles</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>\$1,555.00</p> <p>\$ 540.00</p> <p>\$ 3,935.00</p> <p>\$</p> <p>\$</p> <p>\$</p> <p>\$ 580.00</p>

Description of Equipment	Offered Equipment	Cost
<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>Yes No</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-strap material.</p> <p>4. Rear riding step will not exceed 20" from ground using M843 Traction tires.</p>	<p>Yes No</p> <p>Size: 9.5" x 41" in</p> <p>Make: HEIL Model: GRIP STRUT</p> <p>Height of Step: 14"-22" bolt adjustable</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: Right Side of frame</p> <p>Size: 36"x18"x18"</p> <p>Yes No</p> <p>Yes No</p>	<p>\$ 790.00</p>
<p>I. Hydraulic System: "Operate at Standard Low Idle".</p> <p>1. Hydraulic pump(s) PTO "hot shift" driven through a Chelsea 890 series driven off front of engine (ETO). The gear pump(s) shall have an automatic pump oil bypass system in normal bypass mode when the hydraulic system is not engaged.</p> <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> <p>a. Steel tubing with hydraulic hose sections at both the pump and</p>	<p>Pump Make: Heil Model: Parker made for Heil</p> <p>Mounting Location: Front Engine Mount NO front bumper extension required with Crane Carrier</p> <p>Make: Vane Style Model: Variable flow</p> <p>Pump Operating Speed: 750-900 Max rpm</p> <p>Pump Output: Variable_gpm @ 750 rpm</p> <p>These pumps provide requested flow on demand. operating at engine idle speeds.</p> <p>Yes No</p> <p>Operating Pressure: 2450 psi</p> <p>LED Coil Lights: Yes No</p> <p>Material: Yes LED Lights</p> <p>Yes No</p>	<p>\$ 7,115.00</p> <p>\$</p> <p>\$</p> <p>\$</p> <p>\$</p> <p>\$</p>

Description of Equipment	Offered Equipment	Cost
<p>tank end for vibration isolation.</p> <p>b The suction line shall be routed for maximum ground clearance and damage protection.</p> <p>c Hose swivel ends shall be used on all connections.</p> <p>8. Hydraulic Cylinders shall:</p> <p>a. Properly sized to efficiently and continuously perform their function without any cylinder degradation.</p> <p>b. Cylinders shall have industrial hard chrome piston rods.</p> <p>c. Main ram cylinder at the rod end shall have a 4" wide mounting.</p> <p>d. Cylinders shall be fast and easy to remove and replace.</p> <p>9. Hydraulic Reservoir:</p> <p>a. Capacity 45-gallons minimum</p> <p>b. Oil level and temperature gauge,</p> <p>c. Suction and pressure shut-off valves</p> <p>d. Magnetic drain plug.</p> <p>e. Bung for Future Hydraulic Oil Pre-heater System</p> <p>1) Possible future installation bung for an Arctic Fox Hydra Liner H-4000 hydraulic fluid warmer.</p> <p>2) Tank bung shall be schedule 80 2" NPT female thread coupling.</p> <p>3) Bung shall be welded to 0.250" thick 8" dia steel tank reinforcing ring.</p> <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 Filtration, pressure line Parker WPF 7000psig rated at 7 micron absolute tandem type.</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</p>	<p>Yes No</p> <p>Hydraulic Reservoir Size: <u> 47.5 </u> gallons</p> <p>Return Line Filter Rating: <u> 5 </u> Microns Suction Strainer Size: <u> 100 </u> Microns</p> <p>Make: <u> Parker </u> Model: <u> WPF 7000 </u></p> <p>Make: <u> Parker Port </u> Type: <u> PD </u></p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p> <p>\$ <u> 750.00 </u></p> <p>\$ <u> 845.00 </u></p>

Description of Equipment	Offered Equipment	Cost
<p>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. 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>18. A hydraulic oil recirculation filter system connection system shall be provided with the following:</p> <ol style="list-style-type: none"> The suction and return tubes shall be 1" ID and be installed in 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. The hydraulic connections shall be 1" Parker FF male (flat face) fittings and orientated so they face to the inside (each other). The suction and return lines shall be 1" ID with a 60° cut on the bottom to assure adequate hydraulic oil flow. <p>19. 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>Yes No</p> <p>Tubing Size: _____ inches Distance of Tank Bottom: _____ inches</p> <p>Make: _____ Parker _____ Type: _____</p> <p>Yes No Yes No Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ 645.00 _____</p>
<p>J. 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>Yes No</p> <p>Yes No Yes No Yes No</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
<p>K. 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. 	<p>Location: Forward Street Side _____</p> <p>Yes No Yes No Yes No Yes No</p>	<p>\$ _____</p> <p>\$ _____</p>

Description of Equipment	Offered Equipment	Cost
<p>2. Packer controls located on curbside of body tailgate:</p> <ul style="list-style-type: none"> a. Packer controls shall not interfere with rider and shall not pose a catching or snagging of loose clothing possibility. b. Packing control shall not interfere with rider. c. Buzzer driver signal, push button on each side of tailgate. 	<p>Yes No Yes No Yes No</p>	<p>\$ 175.00</p>
<p>L. Vehicle Rear Lights: (No Approved Equals)</p> <ol style="list-style-type: none"> 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. 2. 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. 3. Third Brake Light use the same used light used for Stop/Turn/Tail light and disable the Turn and Tail light sections. 4. Back up lights Truck-Lite LED, flush mount, sealed lexan body, grommet insulated, multi-pin units model 44 P/N 44206C. 5. Marker lights Truck-Lite LED 3 per side model 10 P/N 10250R or 10250Y or model 30 P/N 30250R or 30250Y. 6. Rear ID bar Truck-Lite LED model 35 P/N 35741R or 35740R. 7. License plate light, Truck-Lite model 15 P/N 15040 8. 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. 9. Work lights Two (2) Hopper mount Signal-Stat 623W Halogen work lights with lighted on dash mounted control switch. 10. Wiring shall be sealed Fit' N Forget modular plug-in type where possible. 11. Lights shall not protrude into rear riders area or be below the hopper in an area 20" in from the outer hopper sides 12. Dielectric grease shall be applied to all plug connections and terminals to prevent corrosion. 	<p>Make: Truck-Lite Model: LED Style All Make: Truck-Lite Model: 60250R. Make: Truck-Lite Model: Stop/Turn/Tail LED Make: Truck-Lite Model: 44206C. Make: Truck-Lite Model: 30250R or 30250Y Make: Truck-Lite Model: 35741R or 35740R Make: Truck-Lite Model: 15040 Make: Signal-Stat Model: 623W Make: Fit' N Forget Model:</p>	<p>\$ 630.00 \$ \$ 520.00 \$ \$ 485.00 \$ \$ 1,035.00 \$</p>
<p>M. Warning Alarm:</p> <ol style="list-style-type: none"> 1. Audible when transmission is in reverse or tailgate of body is not fully lowered and locked. 2. 107 dB, SAE type B, fully sealed, back-up alarm system wired into vehicle's backup light system using OEM plug-in adapter. 3. The alarm shall be mounted out of the vehicle's rear wheel splash area. 	<p>Yes No dBa: 108dB Yes No</p>	<p>\$ 55.00</p>
<p>N. Mud Flaps:</p> <ol style="list-style-type: none"> 1. Mud flaps shall be heavy-duty anti-sail type 	<p>Yes No</p>	<p>\$ 235.00</p>

	Description of Equipment	Offered Equipment		Cost
		Yes	No	
O.	<p>2. Installed front and rear on rear wheels.</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. 	Brand: <u>3M</u> Type: <u>DOT-C2</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>110.00</u>
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. Special Tailgate Paint: <ol style="list-style-type: none"> Polyurethane paint equal to DuPont Imron 5000.; <ol style="list-style-type: none"> Top 1/2 of tailgate "Bright White", Lower 1/2 of tailgate and packer panel solid "Safety Yellow" 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. 	Make: <u>DuPont</u> Type: <u>Imron 6000</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 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>350.00</u>
Q.	<p>Special Tailgate Paint:</p> <ol style="list-style-type: none"> Polyurethane paint equal to DuPont Imron 5000.; <ol style="list-style-type: none"> Top 1/2 of tailgate "Bright White", Lower 1/2 of tailgate and packer panel solid "Safety Yellow" 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. 	Color: <u>White</u> Body Color: <u>Safety Yellow</u> Lower 1/2 Tailgate	<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>1,535.00</u>

Packer Body Equipment SUB TOTAL COST
\$99,215.00

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
		Yes	No	
A.	<p>Flashing Warning Light with brush guard:</p> <ol style="list-style-type: none"> Whelen IONSMC -Wide Angle LED color (Amber) safety lights (4 required). The 4 strobe lights shall be vertically (2 per side) mounted in the 	Make: <u>Whelen</u> Model: <u>IONSMC</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ <u>1,285.00</u>

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 or while entering and exiting the vehicle.

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.

C. Tool holders,
 1. Three shovel/broom holders mounted on curb side of body.
 2. Location to be mutually agreed upon at installation.

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.

E. Tailgate winch
 1. 12,000-lb drum winch mounted in upper tailgate structure
 2. Hydraulically controlled with control lever at right rear of truck
 3. Hydraulic winch hydraulic circuit shall be integrated with the tailgate hydraulic circuit and must maintain pressure while operating each function simultaneously.
 4. Winch location must not interfere with CNG tanks or plumbing

F. Tuck-Away Cart Tippers (2ea) one on each side of hopper
 1. Perkins Model # D6220

4.8 Complete Vehicle Sub Total Cost:

4.9 Optional Equipment

Reference Nos: Revised 2019

Yes No
 Yes No
 Yes No
 Yes No

\$ 0
 \$ 275.00
 \$ 2,085.00

Brand: Roadway Display, Inc.

Yes No

Brand: Hydraulic Heil

Yes No

Brand: Perkins 6220

Sundries Equipment SUB TOTAL COST

COMPLETE VEHICLE SUB TOTAL COST
 \$ 330,305
 \$ 329,693.00



Vendor/Sub Vendor:

KOIS 5200 COLORADO BLVD.
 BROTHERS COMMERCE CITY, CO 80022
 FURNACE CO. 303-298-7370 FAX 298-9527

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
<p>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. 4. 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: a) Tank Size: provide diameter x length b) Tank Weight each: Empty c) Quantity of Tanks for 75 gallon DGE</p>	<p>Make: Cummins Model: L9N HP: 320 @ 2,000 rpm Torque: 1000 @ 1300 rpm Yes No Yes No Yes No Yes No Make: Model: Material: Service Life: yrs Recertification: yrs Inspection Type: Service Pressure: psig Yes No CNG Tank (\$) Location: _____ _____ _____ _____ _____ Size: dia x long DEG Net gal Tank Weight: lbs # of Tanks: DEG Net gal</p>	<p>\$ 25,783.00 \$ \$ \$ \$ \$</p>



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
<p>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 1/2-turn ball stainless steel shutoff valve mounted at the tank inlet. 4. 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: a) Tank Size: provide diameter x length b) Tank Weight each: Empty c) Quantity of Tanks for 75 gallon DGE</p>	<p>Make: _____ Model: _____ HP: _____ @ _____ rpm Torque: _____ @ _____ rpm Yes No Yes No Yes No Make: Lincoln Tanks Model: _____ Material: Composite Wrap _____ Service Life: 15 yrs _____ Recertification: 8 every yrs _____ Inspection Type: Visual port _____ Service Pressure: 3600 _____ psig Yes No CNG Tank (s) Location: _____ Body Roof or Front of Cab. Customer choice before mounting _____ _____ _____ Size: _____ dia x _____ long DEG Net _____ gal Tank Weight: _____ lbs # of Tanks: _____ DEG Net 75 DGE _____ gal Weight all tanks and brackets etc: _____ lbs Weight All Tanks Full CNG: _____ lbs Enclosure Size: _____ x _____ x _____</p>	<p>\$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ _____ \$ 45,950.00 _____</p>

	<p>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: 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. 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. 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. 5. CNG Pressure Reducing Regulator System: a The pressure reducing regulator system shall be mounted inside a protective steel enclosure no more than 6 ft from the CNG fuel tank. 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. c The pressure reducing regulator system shall have 2 pressure gauges installed in the system. 1) High Pressure gauge 0-to-5,000 psi installed on tank side to show tank system pressure. 2) Low pressure gauge 0-to-250 psi to show engine downstream fuel delivery pressure to the engine. 3) Gauges shall be stainless steel glycerin filled. 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. e Engine coolant flow and CNG fuel supply shall enter the regulator on the same side of the regulator. f Coolant ports shall be oriented vertical (up) in horizontal</p>	<p>Material: _____ Gauge: _____</p> <p>Yes No Frame Size: _____ x _____ x _____ \$ _____</p> <p>Yes No PRD Pressure Release: _____ psig \$ _____</p> <p>Yes No Tubing Size: _____ \$ _____</p> <p>Yes No Tubing Size: .5 _____ x _____ Type: Stainless _____ \$ _____</p> <p>Pressure Range: 0 _____ to 6000 _____ psi \$ _____</p> <p>Pressure Range: 0 _____ to 250 _____ psi \$ _____</p> <p>Yes No Yes No Yes No Yes No Yes No Yes No \$ _____ \$ _____ \$ _____ \$ _____</p>
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<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) Fuel Fill Locations(2/vehicle). One at front bumper driver's side and one at tank fill enclosure driver's side of the vehicle. Both fuel fill locations require ample clearance for both "fast fill" and "slow fill" receptacles and hook-up. 3) The fuel filler line shall be plumbed to the CNG tank bank. 4) Two required: one fuel fill receptacle at the left front bumper and one fuel fill receptacle in the tank fill enclosure. <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 1/2-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 	<p>Yes No Tubing Size: .5 _____</p> <p>Make: NGV. Fill Location: Side & Front Bumper _____</p> <p>Yes No Pressure Range: _____ to _____ psi Pressure Range: _____ to _____ psi</p> <p>Yes No Yes No Yes No Yes No</p> <p>Make: Agility _____ Model: _____</p> <p>Make: _____ Agility _____ Model: _____</p> <p>Fuel Gauge Type: 0-4000 PSI Make: Agility _____ Model: _____</p> <p>Yes No Yes No Yes No Yes No</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>b vehicle dash gauge to show fuel tank volume. 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: 1) Red = power 2) Green = signal 3) Black = ground</p>	
<p>B 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: _____ Model: _____</p> <p>Btu's: _____/hr</p> <p>Air Flow: _____ cfm</p> <p>Size: _____ x _____ x _____</p> <p>Fuel Usage: _____ gal/hr</p>	<p>\$ _____</p>
<p>C Hydraulic Oil and Engine Coolant Heater:</p> <ol style="list-style-type: none"> Heater for hydraulic oil and engine coolant shall be a Webasto 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: _____ Model: _____</p> <p>Btu's: _____/hr</p> <p>Water Flow: _____ gpm</p> <p>Size: _____ x _____ x _____</p> <p>Fuel Usage: _____ gal/hr</p> <p>Make: _____ Model: _____</p> <p>Length: _____</p>	<p>\$ _____</p>
<p>D 1.</p>		
<p>E Spare Tire and Wheel:</p> <ol style="list-style-type: none"> Tire and wheel assembly: 1 per vehicle. Tire: Michelin XZY-3, Steer Tire. Aluminum 	<p>Make: _____ Model: _____</p> <p>Make: _____ Model: _____</p>	<p>\$ _____</p>
<p>F Remote High-Quality Color Safety 4 Camera System:</p> <ol style="list-style-type: none"> Cameras (4 required) color, Brigade – BN360-100C, 360-degree camera kit system with camera view selection on the TV monitor face (No Approved Equal): <ol style="list-style-type: none"> Rear of vehicle mounted camera wired into vehicle reverse circuit to automatically turn on when vehicle is shifted into reverse: Front, rear, left and right side ultra-wide viewing camera system to serve as an auxiliary rear view mirror function (blind spot 	<p>Make: Brigade Model: BN-360-100C</p> <p>Yes No Camera Price Required</p> <p>Yes No Camera Price Required</p>	<p>\$ 5,656.00 \$ 3,996.00</p>

- view) to augment the rear-view mirrors. The cameras shall be normally ON viewing all sides of the vehicle including blind spot. It shall automatically switch to rear of vehicle view when the transmission reverse gear function is activated. An override to keep the left side camera on shall be provided for special situation use. Camera shall be as small as possible and protected from tree branch damage.
2. Camera color Brigade – BN360-100C 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.
 - b. Camera shall have built in safety audio system that will pick up and broadcast 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.
 3. Monitor LCD, 7" flat screen, Zone Defense with:
 - 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.
 - b. Camera view selection switches on the TV monitor.
 - c. Day night sensor
 - d. Resolution 270,000 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.
 - i. Swivel mounting bracket.
 - j. Dimmer switch to adjust for day and night viewing.
 - k. Monitor capable of accommodating 360 degree, 5 camera system
 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 2 years with repairs done by replacement of failed components notification shipped UPS "Next Day" upon notification

Make: BN360-100 Model: _____

Quantity: 2
 Yes No

Yes No

Resolution: _____ lines

Make: _____ Model: _____
 Yes No

Yes No

Yes No
 Pixels: 270,000

Yes No
 Yes No
 Yes No

Make: _____ Model: _____
 Yes No

_____ \$ _____

_____ \$ _____

	<p>of problem.</p> <p>7. Five-year warranty</p>	<p>Yes No Yes No Yes No Yes No Warranty: 3 years Yes No</p>	<p>\$ _____</p>
<p>G 1.</p>	<p>H Inspection Trip:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>4. Inspection Trip Costs to include:</p> <p>a. Air fare per person: _____</p> <p>b. Surface transportation costs: _____</p> <p>c. Lodging per person per day: _____</p> <p>d. Meals per person per day: _____</p> <p>5. Total cost per person for 1st article inspection trip: _____</p>	<p>Provide information:</p> <p>Distance to fabrication plant: 1326 miles Plant Location: Fort Payne AL _____</p> <p>Air Fare: \$ 450 Airline: United _____</p> <p>Surface Transportation: \$ 250 Mode: Rental _____</p> <p>Lodging / day: \$ 125.00 _____ Hotel: IHG or Hampton _____ Meals / day: \$35 _____</p>	<p>\$ 450.00 \$ 250.00 \$ 145.00 \$ 70.00 \$ 915.00 ea.</p>

5.0 Manuals/Equipment

Item	Description of Equipment	Offered Equipment	Cost
Training Tape	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment. 1. Cab and chassis. 2. Equipment and Body.	<p>Yes No Yes No</p>	<p>\$ _____ \$ _____</p>
Operators Manual	One per vehicle/equipment with "safe equipment operation" section for each component.		<p>\$ _____</p>

	<p>of problem. Five-year warranty</p>	<p>Yes _____ No _____</p> <p>Warranty: _____ years Yes _____ No _____</p>	<p>\$ _____</p>
<p>G</p>			
<p>H</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: _____ miles Plant Location: _____</p> <p>Air Fare: \$ _____, Airline: _____</p> <p>Surface Transportation: \$ _____, Mode: _____</p> <p>Lodging / day: \$ _____ Hotel: _____</p> <p>Meals / day: \$ _____</p>	<p>\$ _____ \$ _____ \$ _____ \$ _____ \$ _____</p>

5.0	Manuals/Equipment	Description of Equipment	Offered Equipment	Cost
Item	Training Tape	One DVD or CD demonstrating and explaining the safe and proper use of the vehicle/equipment.		
		1. Cab and chassis.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ NC
		2. Equipment and Body.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	\$ NC
	Operators Manual	One per vehicle/equipment with "safe equipment operation" section for each component.		\$ NC
		1. Cab and chassis.		



Service/ Maintenance Manual	2. Equipment and Body. 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.		\$ NC
Services/ 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.		\$ NC
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.		\$ NC
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.		\$ NC
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.		\$ NC

5.1

Operator and Mechanics Training	Description of Equipment	Offered Equipment	Cost
Item On Site Equipment Manufacturers Training	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.		\$ NC
Fleet Maintenance	Charlie Pletcher.		



Training Manager	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.	\$ _____
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.	\$ 2150 Chassis \$1850 Heil Training

6.0

Repair Parts Delivery

	Repair Parts Delivery	Complies (Y or N/A)
A.	Prime Vendor is to indicate current Master Purchase Order (MPO) agreement(s) in place with the City. (Example 06670108) If no agreement exists, is your company willing to enter into a long-term MPO in order to supply parts and components for the equipment and manufactures proposed herein? YES or NO	Y
B.	Sub-Vendor is to indicate current Master Purchase Order(MPO) agreement(s) in the City. (Example 0298A0609) If no agreement exists, is your company willing to enter into a long-term MPO in order to supply parts and components for the equipment and manufactures proposed herein? YES or NO	Y

6.1

Warranty Requirement

TABLE 1

	WARRANTY (CLASS 7 THROUGH CLASS 8 VEHICLES)	Complies (Y or N/A)
C.	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
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	Y
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.	Y
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	Y



	permitted unless pre-approved by the City in writing and, where applicable, indicated on bid sheet as a "dealer installed" non-factory item.	
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	Y
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	Y
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 \$79.00/hour, not to exceed \$85.00/hour. (Enter a response of N/A if not available)	Y
K.	The bidder shall respond to request for warranty assistance within twenty-four (24) hours.	Y
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	Y
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.	Y
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.	Y
O.	This warranty in Table 1 and Table 2, is IN ADDITION to factory warranties on the vehicle and components	

6.2

Fleet Defects and Lemon Clause:

TABLE 2

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

A.	1. 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.
B.	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.
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 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.
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.

6.3

TABLE 3

Warranty Options		(CLASS 7 THROUGH CLASS 8 VEHICLES)		
WARRANTY Options		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 = Included Not available		
		Two Years	Three Years	Five Years
A.	Cab and Chassis	N/A	N/A	\$2,930
B.	Engine	INC	\$1500	2,450
C.	Transmission	INC	INC	1,042
D.	Drive Train	INC	410	800
E.	Left Side Operator Controls	N/A	N/A	N/A
F.	Suspension	501	798	N/A
G.	Air Conditioning	N/A	N/A	N/A
H.	Hydraulics	N/A	N/A	N/A



a. Pumps			
b. Cylinders			
c. Tanks			
d. Valves			
e. Controls			
I. Attached Body	N/A	N/A	N/A
J. Joystick	N/A	N/A	N/A
K. Electrical Components	N/A	N/A	N/A
L. Operator Controls	N/A	N/A	N/A
M. 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: McCandless Truck Center Telephone #: 303-739-9900
Street Address: 16704 E. 32nd Ave City: Aurora

Trash Body: Dealership Name: Kois Brothers Telephone #: 303-298-7370
Street Address: 5200 Colorado BLVD City: Commerce city

Sundries: Dealership Name: Kois Brothers Telephone #: 303-298-7370
Street Address: 5200 Colorado Blvd City: Commerce City

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. Vendor shall supply at acceptance and delivery of vehicle.
1. Bill of Sale (aka invoice, buyers order)



Vendor/Sub Vendor: _____

<ol style="list-style-type: none"> 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 8:00 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>
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8.0 Vehicle Delivery

8.1 Delivery of Cab and Chassis to Body Vendor

120 DAYS

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF CAB AND CHASSIS AFTER PURCHASE ORDER IS ISSUED TO BODY VENDOR

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

210 DAYS

PROVIDE NUMBER OF DAYS REQUIRED FOR DELIVERY OF COMPLETE VEHICLE



AFTER CAB AND CHASSIS IS DELIVERED

9.0 Complete Vehicle Cost

Include:

- Cab & Chassis Total Cost
- Rear Loader Body Total Cost
- Sundries Items Total Cost

Do Not Include:

- Optional Equipment
- Warranty Cost (s)
- Manual Cost (s)

ONE COMPLETE VEHICLE TOTAL COST

~~\$ 323,176.00~~
172,9695
-AMC

E:\12-080 to 082 Rear Loader SW.doc

KOIS BROTHERS PRIME CONTRACTOR

Initial Total: \$323,176

DO NOT PROVIDE

12000 Hydraulic Drum Winch <\$6,010>
Dual Cart Tipper <\$12,894>

Revised Total: \$304,272

