



Environmental Services
MONTANA DEPARTMENT OF TRANSPORTATION
Helena, Montana 59620

Memorandum

To: Lisa Hurley, Supervisor
Fiscal Programming Section

From: Heidi Bruner, P.E.
Environmental Engineering Section Supervisor

Date: August 31, 2016

Subject: Categorical Exclusion (CE) (c)
2015 Air Quality Equipment – MSLA
CM STWD (TBD)
Control Number: 6019 014



The proposed project involves purchase of air quality control equipment, specifically a street flushing truck for the City of Missoula which is in a PM10 nonattainment area. Environmental Services Bureau has reviewed the proposed equipment specifications (received August 31, 2016).

It should be noted that neither MDT nor the City consider the discharge from the flush trucks to be a “significant contributor of pollutants to the Small MS4” as described in Part II.B.3.a.vi of the permit (John Wilson, September 10, 2015, telephone conversation). The city will operate the flush trucks “followed by sweepers that use the water to collect the maximum amount of [the street dirt, debris and other pollutants]” (Carla Krause, September 9, 2015 email).

MDT concludes that the proposal will not involve significant impacts or unusual circumstances as described under 23 CFR 771.117(a and b). As a result, the project qualifies as a Categorical Exclusion under the provisions of 23 CFR 771.117(c), part (23). The proposed action also qualifies as a Categorical Exclusion under the provisions of ARM 18.2.261.

e-copies: Ed Toavs, Missoula District Administrator
Vickie Crnich, Statewide and Urban Planning
Tom Martin, P.E., Environmental Services Bureau Chief
Susan Kilcrease, Environmental Services Project Development Engineer
Environmental Services Bureau File
Montana Legislative Branch Environmental Quality Council

Montana Department of Transportation
Helena, Montana 59620-1001

Memorandum

To: Tom Martin, Bureau Chief
Environmental Services

From: Carol Strizich
Statewide & Urban Planning Section

Date: August 31, 2016

Subject: 2016 Air Quality Equip-MSLA
UPN# 6019 014

The Rail, Transit & Planning Division is initiating the development of the subject project to fund the purchase of equipment for Missoula County. Equipment purchased will be limited to one flush truck. Total project cost is estimated at \$220,000. Missoula County will be required to provide matching funds at the rate of 13.42%. Please refer to this project as "2016 AIR QUAL EQUIP-MSLA (CNTY)".

The attached equipment list has been developed by the local agency and is being reviewed by the MDT – Equipment Bureau.

Please initiate the process to complete the necessary environmental documentation for the above project. Similar projects implemented in the past have qualified as Categorical Exclusion under federal and state regulations/rules. The funding source for this project will be CMAQ, fiscal year 2016. As in the past, a PE program will not be opened to charge time toward this project.

If you have any questions or need additional information please contact Vicki Crnich at 444-7653.

Attachment

Copy: Ed Toavs
Nicole Pallister
Jeff Gleason
Project file

Minimum Technical Requirements

- a) State “Yes” which means that the bidder will comply with that particular specification.
- b) State “No” which means that the bidder will not comply with that particular specification.
- c) State “Equivalent” and list any and all equipment to the specification you wish the purchaser to consider. Any and all equipment to the specifications MUST be listed.
- d) State “Exception” and list any exception to the specification you wish the Department to consider. Any and all exception to the specifications MUST be listed.
- e) State the specific information requested in the block. Some blocks may require that the bidder provide specific information and also respond.
- f) If an explanation will not fit in the block then state “See attached Explanation” in the block. Then attach another sheet for your explanation. The attached sheet must state the specification that you are addressing and the supporting explanation/details.

FLUSH TRUCKS – MISSOULA COUNTY OPTION

Provide and deliver a new, unused flush unit to be mounted on a new tandem axle cab and chassis, 58,000 GVWR per the following minimum specifications:

Note: Manufacturer's literature must accompany all bids.

MAKE AND MODEL BID:	COMPLY TO SPECIFICATION		DEVIATIONS FROM SPECIFICATIONS
	YES	NO	
DETAILED REQUIREMENTS			
10.1 <u>Color</u> (a) Color shall be manufacture’s standard white.			
10.2 <u>Cab and Chassis</u> - (Conventional cab required.)			

<p>(a) All windows shall be tinted safety glass. (Rear window included)</p>			
<p>(b) Seats shall be factory installed.</p> <ol style="list-style-type: none"> 1. Driver's seat shall be a heavy duty low profile base, high back with head restraint, right-hand arm rest, air lumbar, air suspension type with four-way adjustment Bostrum, National or approved equal, (armrest on door mount is acceptable substitute for left side). 2. The passenger seat shall be standard high back with head restraint and shall have seat belt. 			
<p>(c) Instrument panel shall have all necessary gauges grouped within clear view from the operator's position and shall include the following: (Instruments may be analog, digital or both).</p> <ol style="list-style-type: none"> 1. Fuel gauge and DEF gauge. 2. Ammeter or voltmeter. 3. Air pressure gauge with low-pressure audio warning. 4. Speedometer & Odometer. 5. Oil pressure and water temperature gauges, both of which shall have visual (lamps) and audio (buzzer) warning systems for low oil pressure and high water temperature. 6. Tachometer. 7. Continuous hour meter, dash mounted, if applicable. 			

<p>8. Six (6) auxiliary switches, dash mounted, with circuit breaker or fuse protection rated at 20amps with terminated customer access, powered on and off by key no exceptions.</p> <p>(d) Two heavy-duty electric intermittent windshield wipers with windshield-washers.</p> <p>(e) Arm rests on each door if not provided on seat.</p> <p>(f) Auxiliary 12-volt power point.</p> <p>(g) Dual sun visors.</p> <p>(h) Dome light.</p> <p>(i) Dual air horns or dual tone single trumpet to be mounted on top of cab complete with snow shields, if applicable.</p> <p>(j) Electrical horn.</p> <p>(k) The cab shall be equipped with dual heated and motorized mirror on right and left side not less than 6 inches x 16 inches that fold when struck. Must furnish weather pack connectors if not hard wired. A separate adjustable 7-inch convex mirror shall be attached to the main mirror with supporting rods, on each side. Inside cab rearview mirror is not required.</p> <p>(l) Fuel Tank shall be two (2) step tank ICC approved with minimum capacity of hundred (100) gallons to be located on the driver's side.</p> <p>(m) Hand grab rails, mounted vertically behind both doors. The length shall be not less than 8 inches.</p>			
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<p>(n) The hood and fenders shall tilt forward for easy access to engine compartment. Stationary grill and radiator required. Rock guard and bug screen shall be provided.</p> <p>(o) Radio-AM-FM. An exterior antenna shall be provided (dealer installation acceptable - windshield type antenna unacceptable).</p> <p>(p) Common key for door and ignition, if available (minimum two (2) keys per unit). Key codes shall be supplied when units are delivered.</p> <p>(q) Front bumper.</p> <p>(r) Full length, heavy duty insulated rubber floor covering.</p> <p>(s) Steering wheel shall be 18" in diameter.</p> <p>(t) Shall have tilt and telescoping steering wheel.</p> <p>(u) Shall have electric windows and door locks.</p> <p>(v) Air conditioning.</p> <p>(w) Air ride cab suspension.</p> <p>(x) All lighting (cab, chassis and body) shall meet or exceed FMVSS/CMVSS 108.</p>			
<p>10.3 <u>Frame:</u></p> <p>(a) The frame section modulus and tensile strength of the steel shall have a minimum Resistant Bending Moment (RBM) not less than 2,200,000 inch/lb. using single or reinforced frame rails. If multi frame rails are provided, the rails must be Tectyl coated.</p>			

<p>(b) Cab to axle dimensions must be as such to allow the completed unit to meet current GVW standards.</p>			
<p>10.4 <u>Tires:</u></p> <p>(a) The front tires shall be 315/80R22.5 L. Only a Michelin XZY-3 tire is acceptable.</p> <p>(b) The rear tires shall be 11R22.5 G. Only Michelin XDA-3 or XDE tire is acceptable.</p> <p>(c) No spare tire. (A front spare wheel <u>is</u> required).</p>			
<p>10.5 <u>Wheels:</u></p> <p>(a) All wheels, including spare, shall be heavy-duty 10-hole steel disc hub piloted and shall be of the same manufacturer.</p> <p>(b) Front and spare wheels shall have a minimum 9.0-inch rim with a minimum 9,000-lb. rating.</p> <p>(c) Rear wheels shall have a minimum 8.25-inch rim with 120-psi inflation and 7200-lb. rating.</p> <p>(d) All wheels shall be powder-coated.</p> <p>(e) Nylon wheel guards will be placed between wheels and hubs on all locations to prevent wheels from rusting to hubs.</p>			
<p>10.6 <u>Shock Absorbers:</u></p> <p>(a) The front axle shall have heavy-duty shock absorbers.</p>			
<p>10.7 <u>Brakes:</u></p> <p>(a) Anti-lock air brakes are required and</p>			

<p>shall include traction control.</p> <p>(b) Full 360-degree brake dust cover on all wheels.</p> <p>(c) Suspended brake pedal (not mounted to floor).</p> <p>(d) Parking brake with dash mounted quick release valve shall be provided.</p> <p>(e) Trailer towing package, air and electric lines to end of frame. Tractor protection control valve and hand operated trailer brake control valve will be provided.</p> <p>(f) Air reservoir shall be equipped with a manual drain cock. A Schrader valve stem air-charging port shall be provided so that the air brakes can be released by an external air source.</p> <p>(g) Air cans for service and parking brakes shall be mounted ahead of front tandem axle and behind rear axle (indexed up by rear axle is preferred if available).</p> <p>(h) Manufactures standard automatic slack adjusters shall be provided on front and rear brakes.</p> <p>(i) Manufactures standard heated air drier.</p>			
<p>10.8 <u>Engine:</u></p> <p>(a) The engine shall be a minimum 12.4L SAE gross horsepower of 425 and peak torque of 1550 lbs. at 1100 – 1800 RPM, governed speed shall be 1800 to 2100 RPM.</p> <p>(b) Engine ECM shall be programmed from the factory to limit speed to 75 mph and limit idle time to no more than 20 minutes.</p>			

<p>(c) A minimum two (2) position, Jacobs-style engine brake.</p>			
<p>(d) Filters shall provide severe service duty and:</p> <ol style="list-style-type: none"> 1. Air cleaner with a pop-out or dial type, dash mounted air restriction indicator. 2. Inside/outside air inlet with in-cab controls. 3. Manufactures standard heated fuel water separator with a sight bowl. 			
<p>(e) Cooling System</p> <ol style="list-style-type: none"> 1. Weather fronts shall be provided if required to maintain normal engine operating temperature. 2. Radiator shall be <u>heaviest duty</u>, highest capacity option available. 3. Anti-freeze shall be extended life and rated to -34°F. 4. A 110/120-volt A.C., 1500-watt minimum electric engine block heater shall be supplied. The block heater electrical cable shall connect to a weatherproof receptacle at the side or the front of the engine compartment. 5. Manufactures standard fan hub that meets or exceeds engine manufactures cooling requirements. 			
<p>(f) Exhaust system (under frame preferred) shall be a horizontal muffler with a single vertical right hand tailpipe with heat guard and shall have a 13-inch ground clearance.</p>			

<p>(g) Provide engine manufacturers approved, factory installed cold weather starting aid.</p> <p>(h) Air compressor, minimum 15.9 cubic feet, air compressor intake will be through engine air cleaner.</p>			
<p>10.9 <u>Front Axle & Springs:</u></p> <p>(a) Front axle shall be a Manufactures standard that has a manufacturer-rated capacity of not less than 18,000 lbs. Road clearance from the bottom of the axle to the ground shall be not less than 10½ inches with the tires and wheels specified.</p> <p>(b) Steering shall be dual gear type.</p> <p>(c) Stemco, or approved equal, oil bath hubs on front axle.</p>			
<p>10.10 <u>Transmissions, Clutch, Drive Line and Rear Axle:</u></p> <p>(a) Transmission shall be Allison that meets or exceeds the engine torque rating.</p> <p>(b) The driveline shall be factory balanced Spicer 1810 heavy duty or approved equal.</p> <p>(c) Rear tandem drive axles with power divider, that shall include an air activated lockout mechanism, driver activated.</p> <p>(d) Rear axle shall have a lubrication pump and shall be a Meritor or Spicer with a manufacturer's rated capacity of 40,000 pounds.</p> <p>(e) Rear suspension shall be Hendrickson Haulmaxx with a capacity not less than 40,000 lbs. and 52-inch axle spacing.</p>			

<p>(f) Magnetic drain plug for axles.</p> <p>(g) The gear ratio shall be determined at the pre-award conference.</p> <p>(h) A heavy-duty, factory balanced, full round Spicer connector driveline or approved equal shall be provided.</p>			
<p>10.11 <u>Electrical System:</u></p> <p>(a) The alternator shall be heavy duty, have an output not less than 130 amperes at 12 volts and be driven by two belts or a single serpentine.</p> <p>(b) Electrical</p> <ol style="list-style-type: none"> 1. Will be 12 volt, heavy duty, and negative ground. 2. Three (3) batteries with minimum combined 2700 cold cranking amps. Battery box shall be frame mounted. 3. A heavy-duty battery disconnect shall be provided in the cab, within easy access from the driver's side of the vehicle. <p>(c) Units shall have electrical noise suppression to reduce or eliminate noise interference to two-way radio reception and transmission.</p>			
<p>10.12 <u>Road Temperature Measuring System:</u></p> <p>a) Accuracy shall be ± 1 degree C, or 1% of full scale.</p> <p>b) Repeatability shall be +0.5% of full scale.</p> <p>c) Emissivity shall be factory calibrated at .96.</p>			

<p>d) Lifetime factory digital calibration.</p> <p>e) Field of view shall be 10 degrees.</p> <p>f) Operating voltage shall be 12 V. DC nominal.</p> <p>g) Readout scales shall be selectable Celsius or Fahrenheit.</p> <p>h) Road temperature display range shall be -40 to +90 degrees C.</p> <p>i) Air temperature display range shall be -40 to +45 degrees C.</p> <p>j) Response time - 100 milliseconds, dampened to 500 milliseconds.</p> <p>k) Power consumption 200 Milliamps.</p> <p>l) Ambient temperature ranges -40 to +75 degrees C.</p> <p>m) Cable shall be a minimum 12 feet, shielded.</p> <p>n) Sensor features: 4 inches long anodized aluminum enclosure, EMI/RFI shielded electronics, and truck mirror mounting standard.</p> <p>o) Display feature shall be standard size gauge enclosure, Illuminated L.E.D. digital display. Threshold audible and visual alert. Selectable Celsius or Fahrenheit.</p> <p>p) RS-232 output - output cable, with development support software for use with other devices.</p> <p>q) Sensor to be mounted on driver's side</p>			
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mirror.			
<p>11.1 <u>Flush Tank:</u></p> <p>(a) Shall be a minimum of 3500 gallons 304 stainless steel tank capable of fitting a standard tandem axle truck, permanently mounted with spring-loaded front and midpoint, solid mount rear. The unit shall also have a full set of integrated stainless steel or poly fenders truck frame mounted, independent of the body.</p> <p>(b) Tank shall be mounted on an independent cradle made from 304 stainless steel that is mounted to the stainless steel tank. The rear spray bars shall be mounted to a 304 stainless boom assembly. Any components connecting to the tank shall be stainless steel.</p> <p>(c) The entire tank and all parts shall be painted. The steps and side mount ladder to the top shall be painted.</p> <p>(d) The tank, frame, skid, pumping mechanism and booms shall all be mounted integral with the tank. When placed on the truck, the spray applicator shall be held in place by stainless steel bolts and nuts. Any welding shall be of 304 stainless steel wire.</p> <p>(e) The unit shall be equipped with a no slip grip strut and grip rung ladder at the driver's side of the unit. The ladder shall consist of five (5) steps. There shall be five (5) steps on the side of the body. Along with two (2) steps of grip strut that are mounted on the truck. Incorporated into the steps shall be a cross connection piece to protect the flow meter valve and plumbing. The steps are used to inspect the interior of the tank or for loading into</p>			

<p>the minimum 16" man way on top of the tank. The 16' man way shall also have a vented air cap.</p> <p>(f) Manufactures standard bracket on rear of tank for mounting warning lights shall be provided.</p> <p>(g) The tank shall have an inspection port on top of the tank and a 2" sump to load or drain the tank on the bottom.</p> <p>(h) The tank shall have internal 304 stainless steel full baffles to prevent forward surge of liquid in tank. Surge plates are not acceptable as an adequate flow deterrent system. The baffles must be fully assembled internally.</p>			
<p>11.2 <u>Distribution System:</u></p> <p><u>Flush pump:</u></p> <p>(a) Product pump shall be a hydraulic driven centrifugal type cast iron water pump using the truck-mounted hydraulics. The pump shall have a minimum 4" suction and 3" discharge for the street flushing capabilities. All functions for flushing will use a single pump. The pump will have a 304 stainless steel shaft, impeller and severe seal protection against chemical corrosion.</p> <p><u>Anti Ice Pump:</u></p> <p>(a) Hydraulic driven pump must be capable of producing enough flow to achieve 10 – 60 gallons per lane mile for the anti-icing system.</p> <p>(b) The street flusher will run independent of the de-icing applications for warm weather use.</p>			

<p>(c) The street flusher nozzle switches shall be electric/air controlled.</p> <p>(d) Anti-icing variable displacement orifice nozzle assemblies will be provided.</p>			
<p>11.3 <u>Spray System:</u></p> <p>(a) The unit shall be capable of loading and unloading the liquid product from the truck. The process shall be done through 2" quick disconnects mounted at the rear of the right side of the skid accessible from the ground.</p> <p>(b) The unit shall provide an additional 2 ½" brass male N.S.T. discharge fitting at the rear of the left side of the skid accessible from the ground.</p> <p>(c) The product pump shall be mounted to the frame on the driver's side.</p> <p>(d) Downstream of the control valve mounted to the manifold shall be a pressure gauge reading the system pressure for trouble shooting purposes.</p> <p>(e) Console shall have the capability of being switched from English units to metric units.</p> <p>(f) The water to the front and rear for street flushing capabilities shall run through four (4) 3-inch air controlled (two front and two rear) aluminum (non-corrosive) nozzles. The spray heads shall rotate independently in a horizontal arc 45 degrees either way from center, air controlled from the cab console.</p> <p>(g) One 3-inch side mounted spray head assembly shall be placed on the right</p>			

<p>side, mid-ship at frame height. The head shall be constructed to discharge water in an approximate 20 degree fan. The spray head shall be capable of vertical adjustment of 45 degrees above horizontal to 45 degrees below horizontal.</p> <p>(h) One (1) side mounted power hose reel with 1 ½ -inch by 60-foot hose mounted to the curbside of the unit. The hose reel shall work in conjunction with warm weather operations with a single adjustable nozzle mounted at the end. The operation of the street flusher will be turned on by a single manual control valve.</p>			
<p>11.4 <u>Ground Speed Controller:</u></p> <p>a) The system shall be ground speed controlled via the transmission either electronically or mechanically (depending on the vehicle) and capable of applying 60 gallons per lane mile application rate for a single lane, with up to 3 lanes total at any time.</p> <p>b) The sprayer must operate over the following range and ground speed for deicer/anti-icing chemical application rates and sprayer ground speed operating range:</p> <ol style="list-style-type: none"> 1) Unit must spray at any speed from 1-45 mph. 2) Unit must spray at any rate selected from 10 - 60 gallons per lane mile. 3) Unit must be able to spray 10 gallons per lane for a single lane. 			

<p>4) Flow meter shall be a Raven RFM100 with a 3-100 gallon per minute rating, or approved equal.</p>			
<p>11.5 <u>Control Console:</u></p> <p>a) Control console for easy operation from driver seat. The size of the control system shall not limit visibility for the driver.</p> <p>b) Power source shall be supplied from the truck chassis.</p> <p>c) The control console shall have the following features:</p> <ol style="list-style-type: none"> 1. Accept inputs for calibration and operation. 2. Display flow control system information. 3. Download capability for direct connection to a portable IBM compatible computer. 4. Calibration and total shall be stored in a non-volatile memory. 5. Flow rate controlled automatically in proportion to ground speed and active spray width. 6. Four (4) operator pre-programmed rates will automatically be maintained. 7. Flow rate will be read and adjusted within five-tenths (0.5) of a second when spray width or vehicle speed changes. 8. Product application rates and spray width can be changed on the go from the control console. <p>d) Control Console shall have the capability of operating up to 3 spray zone off/on</p>			

<p>valves.</p> <p>e) Wiring assembly shall attach to the console with a single connector for quick removal.</p> <p>f) Ground speed sensor shall be supplied and all necessary cabling to make system operational.</p> <p>g) Console display shall display the following information:</p> <p><u>During normal operation:</u></p> <ol style="list-style-type: none"> 1. Operator programmed gallons per lane mile. 2. Vehicle's actual mph speed. 3. Lane miles sprayed. 4. Total lane miles sprayed. 5. Product gallons applied. 6. Instant Rate changes "on the go". 7. Four (4) application rates (predetermined, preset). <p><u>When a fault condition occurs, the computer will display the following fault diagnostic information:</u></p> <ol style="list-style-type: none"> 1. Low DC voltage. 2. Error or message that explains the fault. 3. Beeper that alerts operator of fault condition. 4. No flow meter response. 5. If system cannot deliver the required flow to the spray heads. <p>h) Console shall have a built in ground speed simulator. To provide any test simulation when the vehicle is in the shop and not moving. This is to provide a trouble-shooting guide.</p> <p>i) Control console must control electric actuated control valves controlling flow to 3 spray zones and must go from closed to full open in not more than 3 seconds.</p>			
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<p>j) Unit must shut completely off when vehicle stops.</p>			
<p>11.6 <u>General Requirements:</u></p> <p>a) RS232 Port - control shall have the capability to be connected with a GPS system to allow tracking of vehicle location.</p> <p>b) Control shall have the capability to be connected with hardware, which will allow the transmission of operation information and accumulated data via radio transmission.</p> <p>c) All valves and fittings constructed of hardened polyethylene.</p> <p>d) All out of cab electrical connections shall be run to one central location and contained in a watertight junction box.</p> <p>e) One-year warranty on all components provided with the system.</p> <p>f) Successful vendor shall provide a list of parts that will be stocked locally or give written guarantee of parts delivery time and shall list field service availability statewide, if requested by the Chief of the Equipment Bureau.</p> <p>g)</p>			
<p>11.7 <u>Manuals:</u></p> <p>Manuals MUST BE INCLUDED (CD-ROM preferred) with each of the unit(s) when delivered. The cost of these manuals must be included in the bid price below. These manuals shall cover parts, service; operator's manual, wiring diagrams and all major components</p>			

<p>including the engine and transmission.</p> <p>CD-ROM or DVD-ROM Manuals must be provided in non-proprietary electronic format and not require any software installation on the PC. Manuals in a proprietary format are acceptable only if they meet all of the following requirements:</p> <ol style="list-style-type: none"> 1. Do not require registration on the PC. 2. Do not require an internet connection. 3. Run entirely from the CD, DVD or a directory of MDT's choosing on the local drive. 4. Run correctly for a restricted user on the PC. Proprietary diagnostic software required to communicate with on-board computers/control modules is exempted from these requirements. <p>a) Diagnostic Software shall be included for trouble shooting engine, transmission and body builder.</p> <p>Diagnostic software shall be compatible with MDT system environment which includes.</p> <ul style="list-style-type: none"> • Microsoft Windows 7 OS • 32/64bit operating system • 4 GB of memory • Microsoft active directory domain • Internet explorer v10 • Private firewall network • Multiple users per desktop • USB compatible • No elevated or administrative rights required to function. <p>b) Internet accessed manuals – must meet the following requirements:</p> <ol style="list-style-type: none"> 1. Access through the internet must not require registration on the PC 2. Must not require any software installation on the PC and; 			
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3. Must be available under one registration.			
<p>11.8 <u>Training:</u></p> <p>If requested by the MDT Equipment Bureau Chief, Cities or Counties within a period of thirty (30) days after the unites are accepted, no cost to the State, Cities or Counties, the vendor shall provide a qualified factory authorized service representative for training as follows:</p> <ol style="list-style-type: none"> 1. Various Locations: 2. Four (4) hours of operator training in operation and normal maintenance of the unit and all components. 3. Four (4) hours of mechanic training in maintenance, adjustment and major repair of the unit and all components. 			

QUOTE SECTION

Provide and deliver F.O.B. Helena, Montana Manufacturer's current model, unused flush unit to be mounted on a new tandem axle cab and chassis, 58,000 GVWR per the above specifications and requirements:

Cost per each: \$ _____

Extension for (0): \$ _____

Year/Make/Model: _____

Delivery Date: _____

Warranty: _____