

**APPENDIX C**

**TECHNICAL REQUIREMENTS – Revision 1**

**C.1. SHIPPING TERMS**

Terms of Sale	Responsibility for Freight Cost and Transit Risk
<i>F.O.B. Destination, freight prepaid and included</i>	<i>Seller - Pays freight charges                      Seller - Bears freight charges                      Seller - Owns goods in transit                      Seller - Files claims (if any)</i>

**C.2. VEHICLE AND BIDDING REQUIREMENTS FOR WSDOT**

Acceptance of Terms:

Acceptance of a state contract/purchase order by a Bidder/Supplier for any equipment purchased pursuant to this bid/contract constitutes acceptance of, and agreement with, all of the general and specific provisions, requirements, stipulations, and equipment specification(s) described in this bid/contract.

General:

Equipment offered for this bid/contract must be new (unused) and a current production model that requires no manufacturer or dealership modifications. Units may be sold, prepared, and delivered to WSDOT, or its designated agent, by a dealer who is factory franchised for the specific makes and models of equipment offered.

All accessories and features listed herein shall be those supplied by the Original Equipment Manufacturer (OEM). Any accessories, features, or operational performance required by FMVSS, Washington State Motor Vehicle Laws, OSHA, WISHA and Labor and Industries laws or mandates, that apply to the equipment being bid, shall be provided. Additionally, all required certifications, inspections, and decaling shall be performed prior to WSDOT acceptance. All units associated with this purchase shall be of the same design and quality as those sold through normal retail channels; and they shall possess the latest technology, accessories, and features offered on standard retail units; whether or not they are called for in the following specifications.

Failure to comply with any of the specified requirements of the contract constitutes a breach of contract. WSDOT may cancel all or any part of this contract, without incurring any costs whatsoever, including delivery, shipping, or re-stocking fees.

Specification Clarification and Changes:

Clarification for any item in these specifications may be obtained from the Department of Enterprise Services (DES), Office of State Procurement (OSP).

State contracts, for the purchase of state owned equipment, are official state documents that carry legal implications. After award, there shall be no deviations from any requirement stated in the contract during the manufacturing or assembly process of the equipment identified herein, without a contract change order issued by DES, OSP.

**Equipment Demonstration:**

and During the bid evaluation process and prior to a contract award, Bidder(s) may be required to demonstrate the performance capabilities of the equipment offered in their bid.

Performance demonstration(s) must be conducted within fourteen (14) calendar days after notification that such demonstration(s) is required. Bidder(s) shall conduct all demonstration(s) within Washington State and are responsible for their costs associated with the demonstration(s).

The Bidder(s) will coordinate with the Procurement Coordinator and WSDOT, Equipment Office at (360) 705-7897/7884 to establish the location, date, and time of the performance demonstration(s).

**Delivery; and Acceptance:**

WSDOT will require the successful vendor to provide the "Supplier Confirmation of Specification Compliance" at time of delivery. The form is attached to this document. Suppliers are responsible for ensuring that all equipment purchased, pursuant to this contract, complies with all of the requirements and specifications listed in the contract.

Supplier(s) shall provide the following documents for review at time of delivery for each item:

1. The manufacturer's line production sheet stating the equipment serial number(s) and listing all of the equipment's components;
2. Completed Invoice;
3. Supplier Confirmation of Specification Compliance;
4. The Manufacturer's Statement of Origin (MSO);
5. Axle weight slips (for all units with axles); and
6. A completed Washington State title application showing both the legal and registered owner as: Washington State Department of Transportation, 7345 Linderson Way S.W. Tumwater WA 98501. The mailing address is: P.O. Box 47357, Olympia WA 98504. Out of state Supplier(s) may contact WSDOT, Equipment Office at 360-705-7882/7884 to obtain a Washington State title application.

Suppliers must notify WSDOT at the phone number listed on the contract or the equipment order, twenty-four (24) hours prior to equipment delivery. This is to ensure that a WSDOT employee is available to sign and date the bill of lading (or other delivery document) and receive the above-mentioned documents to indicate WSDOT has accepted delivery of the equipment.

When the unit is ready for final delivery, it may be delivered to WSDOT facilities (as specified on the contract and/or equipment order) between the hours of 7:00 am and 3:00 pm, Monday through Friday. Deliveries shall not be made during other hours, on weekends, or on legally recognized state and federal holidays. WSDOT will not accept any responsibility for equipment that has been delivered to or left at a WSDOT facility unless a WSDOT employee has signed and dated the bill of lading or other delivery documents indicating WSDOT has accepted delivery of the equipment.

Supplier shall be solely liable for any equipment damages that occurred prior to WSDOT accepting delivery of the equipment.

**Supplier Shall Meet the Delivery Terms of this Contract:**

Should the Supplier become aware, in advance of an equipment delivery date, that the Supplier will be unable to meet the contract delivery date, the Supplier may make a written request to DES, OSP for a contract change order modifying the equipment delivery date. Should the Supplier fail to meet the contract equipment delivery date, liquidated damages will be assessed. The amount of liquidated damages will be calculated by using WSDOT's established Equipment Rental Rate Schedule that is in effect as of the date of the contract or equipment order. Liquidated damages will be assessed at the established per day equipment rental rate for each late delivery day, not to exceed ten (10) percent of the equipment's purchase price. This assessment represents a reasonable forecast of WSDOT's actual damages for having to rent replacement equipment. *Damages will not be assessed unless an equipment rental actually occurs.* WSDOT shall deduct the liquidated damages for late delivery from Supplier's invoice.

**Warranty Services and Performance:**

Equipment suppliers must provide technical support and reasonable equipment modifications for a period of 90 calendar days after the date the equipment is reported in-service per manufacturer and/or factory warranty requirements. (??) This is to ensure that the purchased equipment is capable of performing the specified operational functions.

Bidders/Suppliers must include, as part of the bid, the factory and/or manufacturer's one year warranty, which shall cover one hundred (100) percent parts and labor for the entire unit offered. This warranty must be honored by all authorized factory and/or manufacturer's dealerships.

Supplier shall be liable for all costs associated with warranty repair(s), including, but not limited to, materials, parts, labor, and transport of equipment that are disabled due to the failure of the equipment during the warranty period.

Warranty coverage will not commence until the date the completed equipment is placed into service as reported by WSDOT pursuant to the warranty requirements or 30 days after final payment for the equipment, whichever occurs first.

During the warranty period Supplier must begin physical repairs on equipment failures within seventy-two (72) hours after WSDOT has notified the Supplier of an equipment failure. Should the Supplier fail to begin equipment repairs within 72 hours after notification, WSDOT may elect (based on operational requirements) to make the warranty repairs. Should WSDOT elect to make such warranty repairs, the Supplier agrees to fully reimburse WSDOT for all parts,

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materials, labor, shipping, and travel costs incurred by WSDOT for such warranty repairs. WSDOT shall provide Supplier with a detailed invoice; and Supplier agrees to remit payment to WSDOT within thirty (30) days after receipt of the invoice. Failure to provide and complete warranty service/repair within two (2) weeks (fourteen [14] calendar days) of the vehicle/equipment entering contractor's facility may be sufficient grounds for the State to deny the contractor from bidding in future contracts due to poor performance.

Contractor shall provide a loaner (of similar type) in the event warranty repairs exceed a period of five (5) days. This loaner shall be provided at no additional cost to the State.

During warranty period, the Supplier may, upon notification of a warranty failure, authorize WSDOT equipment repair technicians to make warranty repairs when it is advantageous to WSDOT and the Supplier. The Supplier shall reimburse WSDOT for all costs associated with the warranty repair.

Training:

Equipment Supplier shall provide on-site instructor(s) to conduct eight (8) hours of operator training per unit delivered and eight (8) hours of repair technician training per unit delivered. During the eight hour training period, the length and number of training session(s) required may vary based on the equipment's complexity and personnel experience levels. Training session(s) may be less than eight hours should the WSDOT on-site supervisor or Equipment Training Manager determine that all personnel have completed training and the Supplier's training obligation has been fulfilled. The training session(s) shall include, but not be limited to, the below listed items.

1. Operator training will be designed to familiarize personnel with the controls, safety features, operating characteristics, and operator checks and services.
2. Operator training may include teaching operators shifting, acceleration, and braking techniques to maximize operational effectiveness of the unit's power train configuration for equipment so configured.
3. Mechanic training shall be designed to familiarize service and repair technicians with preventive maintenance checks and services, system diagnostics procedures, repairs, adjustments, and any unique requirements associated with the unit.

All training shall be scheduled and coordinated with the ship to addressee. Coordination will include dates, times, location, number of students per session, number of sessions required, facilities, and training equipment and material.

Qualified individuals shall conduct training sessions. "Qualified" means that the trainer must have a high level of knowledge and experience relating to the type of equipment offered or purchased:

1. Person(s) conducting the operator training session(s) must have a minimum of one (1) year of experience actually operating the unit for which training is being conducted or be a factory/manufacturer certified trainer.

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2. Person(s) conducting repair technician training session(s) must have at least one (1) year of experience in the performance of preventive maintenance and repair on the unit for which the training is being conducted or be a factory/manufacturer certified trainer.

An on-site WSDOT supervisor or the Equipment Training Manager will evaluate the training sessions and will determine whether or not the training is adequate. If the training is deemed inadequate, the Supplier agrees to conduct additional training sessions, at no cost to WSDOT, to the satisfaction of WSDOT.

Special Notes/Workmanship:

**COVERS:** All caps and covers that must be removed in order to perform daily to bi-weekly preventive maintenance, scheduled warranty service, or maintenance recommended or required by the Contractor, must be secured to the unit by a chain or other device. All hoses, pipes, and plumbing connections shall have either retained covers, quick disconnects, or protective caps.

**HOSE, WIRE AND TUBE ROUTING:** Hose, wire and tube routing shall not impede normal maintenance and adjustment of the unit. Hoses, wires and tubes shall be securely and neatly positioned. Kinks in hoses, wires, or tubing are not acceptable.

**HYDRAULIC SYSTEMS** (Workmanship Standards applicable to both traction and controls systems):

Components containing hydraulic fluid shall not be installed in the cab.

**Hydraulic Symbols:** Hydraulic symbols on schematics shall be interpreted per American National Standard Institute (ANSI) Y32.10.

**Leaks:** Hydraulic leaks are not acceptable. A leak is defined as any fluid flow larger than one (1) drop in four (4) hours.

All components installed in the hydraulic system shall be free of contamination and shall be flushed out or cleaned, if necessary, to meet this requirement.

**Hose Routing:** Hose routing shall meet the following requirements:

- The bend radii of hoses shall be not be less than the manufacturers' recommended minimums.
- Hoses shall be routed no closer than six (6) inches from exhaust components or other heat sources unless proper shielding is provided.
- Hoses shall not come in contact with moving parts.
- Hoses shall be clamped to supporting structures at intervals not exceeding sixty (60) inch hose diameters. Clamps shall be Beranger style or equal cushion clamps.
- Hydraulic hoses will NOT be bundled together using wire ties. This shall be accomplished using the Beranger or equal clamps.
- Fittings shall be steel thirty-seven (37) degree flare type on all pressure lines where practical. Flat-faced "O" ring seal type fittings are acceptable.
- Hoses shall not be routed through holes or across sharp edges without protection from being chafed or cut.
- Hoses shall be of sufficient length to prevent stretching, distortion, and disconnecting.

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Pipe fittings shall not be used on the pressure side of any hydraulic circuit. A Teflon sealant shall be used on pipe threads. Sealant shall be used sparingly and shall not contaminate the hydraulic system.

All hydraulic components shall be rated for working pressures to exceed system operating pressures, and have a minimum burst of one and one half (1-1/2) times the system operating pressure.

All hydraulic quick disconnects shall be equipped with protective and retained covers.

#### **ELECTRICAL WORKMANSHIP AND MATERIALS:**

All wire shall be un-tinned stranded copper with cross-linked polyethylene insulation. Wires shall be color coded. Wire runs and color coding shall be continuous and terminate within a weatherproof junction box or weather pack connectors.

Unless otherwise specified and except for multi-terminal connectors, solderless terminals shall be used for all connections. Solder all ring terminals on ten (10) AWG and smaller wires shall be insulated.

Insulated ring terminals shall meet military specification. Military spec ring terminals have an extra copper sleeve around the terminal barrel that improves the holding force and reduces corrosion.

Butt splices shall have moisture barriers and integral polyolefin heat shrinkable sleeves. Heat shrink tubing over non-sealed butt splices is not acceptable.

Insulation-piercing connectors (scotch locks) shall not be used.

Wires shall be protected by looms, sleeving, and grommets. Wire bundles shall be routed away from moving parts and hot components. Wires shall not be bundled with any electrical wiring or components.

All chassis/body combination units shall have a separate grounding strap installed from the body to the chassis.

Wire routing shall ensure that the following requirements are met:

- Wires shall not be routed closer than six (6) inches to exhaust components or other heat sources, unless they are shielded.
- Wires shall not come in contact with moving parts.

Wires and wire harnesses shall not be routed through holes or across sharp edges without protection from being chafed or cut.

#### **GENERAL WELDING REQUIREMENTS:**

Distortion of assembled parts is not acceptable. All welds will have proper penetration and be relatively uniform in appearance. All welds shall provide a metal-to-metal bond using proper flux and/or welding materials. Continuous welds shall be used wherever possible and practical.

**Body Fillers:** The covering of welds with body fillers or similar practice is not acceptable.

#### **OPERATOR(S) - EQUIPMENT INTERFACE:**

**Control Locations:** The operator(s) stations(s), including safety devices, controls and gauges, shall be accessible, readable, and visible to the operator without distracting from the safe operational requirements of the equipment ordered.

Supplier Specification Confirmation	Supplier Initials and Date
The supplier will ensure all of the annotated items listed below are inspected prior to delivery.	WJC 6/5/2012
Supplier is 100 % compliant with the bid specification(s) as bid by the supplier.	WJC 6/5/2012
The unit is clean inside/outside upon delivery to WSDOT	WJC 6/5/2012
All required documentation as per the WSDOT and OSP bidding requirements are presented at time of delivery. Example:	WJC 6/5/2012
1. MSO	WJC 6/5/2012
2. Title Application	WJC 6/5/2012
3. Axle weight slip (if required)	WJC 6/5/2012
4. Supplier Confirmation of Specification Compliance (this form)	WJC 6/5/2012
5. Invoice	WJC 6/5/2012
All safety equipment is provided and in proper working condition. (Lights, reflectors, seatbelts, etc.)	WJC 6/5/2012
All required publications are brought with the unit upon delivery.	WJC 6/5/2012
Workmanship Issues:	WJC 6/5/2012
a) All hoses and wiring are protected from damage.	WJC 6/5/2012
b) All fluid levels have been checked and are at the manufacturer's suggested levels.	WJC 6/5/2012
c) All components are in proper working condition.	WJC 6/5/2012
d) Welds are consistent and without cracks	WJC 6/5/2012
e) No runs, cracks or chips in the paint.	WJC 6/5/2012
Print	WJC 6/5/2012
Vend	Date 6/5/2012

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**C.3 TECHNICAL SPECIFICATIONS – Revision 1**

**Item 1: Truck Mounted Catch Basin Cleaner, Tandem Axle**

**0817**

**Truck; Catch Basin Cleaner; Tandem Axle**

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	Yes	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	Yes	Engine & Transmission Software and Cables
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	Yes	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. a. 6431 Corson Ave Seattle WA 98108 b. 2830 Euclid Ave. Wenatchee WA 98807 c. 5720 Capitol Blvd. Tumwater WA 98501 d. 4200 Main St Vancouver WA 98668 e. 2809 Rudkin Rd Union Gap WA 98909 f. 221 E North Foothills Dr Spokane WA 99207	Yes	
<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body	Yes	

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manufacturer.			
2. Cab to Axle (CA) shall be determined by the body manufacturer.	Yes		
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	Yes		
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	Yes		
<b>III. Frame:</b>			
1. The entire length of the frame rails shall be full depth.	Yes		
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	Yes		
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	Yes		
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	Yes		
5. There shall be no holes or bolts in the top flange of the frame rails.	Yes		
<b>IV. Cab &amp; Related Equipment:</b>			
1. Shall be a premium cab to include the following. a. Molded header pockets for the driver and passenger. b. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side. c. Coaxial speakers.	Yes		
2. The unit shall be equipped with the following:	Yes		
a. Engine voltmeter	Yes		
b. Engine oil pressure gauge.	Yes		
c. Tachometer	Yes		
d. Hour-meter	Yes		
e. Engine coolant temperature gauge.	Yes		
f. Shall have a heater with a minimum output rating of 30,000 BTU to include both fresh	Yes		

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air and cab recirculation features.			
g. Factory installed air conditioning.	Yes		
h. Visual and audible low oil pressure and high coolant temperature warning system.	Yes		
3. Dual, heated, and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with a convex spot mirror.	Yes		
4. Shall be equipped with an air horn.	Yes		
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	Yes		
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	Yes		
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	Yes		
8. Shall be equipped with an AM/FM Radio with weather band.	Yes		
9. Shall have a steel front bumper.	Yes		
<b>V. Radio Installation:</b>			
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	Yes		
a. Width 7 3/16 inches.	Yes		
b. Length 8 5/16 inches.	Yes		
c. Thickness 2 1/8 inches.	Yes		
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	Yes		
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	Yes		
4. WSDOT will loan a radio to the successful bidder, as a production aid.	Yes		
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-provided radio. The radio shall have the ability to be removed and re-installed without removing the header panel.	Yes		

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6. To the left of the radio pocket and as close as possible to the radio, a grounded microphone-mounting clip shall be installed.	Yes		
7. On the exterior of the cab roof, there shall be a Larson NMO-K-DS-FME antenna base. The specific mounting location shall provide the antenna with at least 18 inches of clear area around the antenna base and at the tip of the antenna.	Yes		
8. The roof mount antenna base shall be sealed and capped with a protective cover for shipping.	Yes		
9. The antenna cable shall extend to the center radio pocket, and extend at least six inches outside of the radio pocket.	Yes		
10. Above the rear window and centered in the cab, shall be a factory installed and functional two-way radio speaker for the EF J radio.	Yes		
11. Shall have a dedicated and labeled 15-amp constant duty (fused) power circuit for the EFJ Radio.	Yes		
12. Connected to the 15amp EFJ circuit shall be a power wire with the same connectors, gauge, and length of the EFJ Part# 023-9750-010 with no splices. This wire shall extend up to a header pocket and extend at least twelve inches outside of the pocket.	Yes		
13. Shall have a sensing circuit for the EFJ radio. The circuit shall be a fused 3 amp switched through the ignition switch, and active in the run or accessory positions.	Yes		
14. Connected to the 3 amp EFJ circuit shall be a sense wire, with the same connectors, gauge, and length of the EFJ Part # 023-9750-011. This wire shall extend up to a header pocket, and extend at least six inches outside of the pocket	Yes		
15. All wiring associated with the EF Johnson radio will be continuous with no splices or wire gauge change.	Yes		
16. Each mirror bracket will be outfitted with a CB radio antenna base.	Yes		

<b>VI. Seats:</b>			
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumber support and arm rest.	Yes		
<b>VII. Fuel Tank:</b>			
1. Shall have a 100 gallon aluminum fuel tank.	Yes		
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	Yes		
3. The tank shall have full encompassing rubber between the tank straps and the tank.	Yes		
<b>VIII. Electrical &amp; Lighting System:</b>			
1. All chassis lighting shall be conventional LED lighting.	Yes		
2. Shall be a 12-volt system.	Yes		
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	Yes		
4. Shall have a 160-amp alternator.	Yes		
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	Yes		
6. All battery cables exiting the battery box shall be routed through rubber grommets.	Yes		
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	Yes		
8. The chassis electronic control module and the Allison control module shall be located inside the cab and accessible for diagnostics.	Yes		
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	Yes		
10. Shall be equipped with halogen headlamps.	Yes		
11. Supplier splices into the factory wiring harness is unacceptable	Yes		

<b>IX. Engine:</b>			
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.	Yes		
2. Shall be equipped with an engine compression brake.	Yes		
3. Electronic engine controls shall have the following settings:	Yes		
a. Maximum road speed to be governed at 65 mph.	Yes		
b. Shall have idle bump up/down feature.	Yes		
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.	Yes		
5. The engine shall have a zinc plated nickel alloy oil pan.	Yes		
<b>X. Air Cleaner:</b>			
1. Shall be a dual element, with fresh air intake	Yes		
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.	Yes		
<b>XI. Engine Cooling System:</b>			
1. Shall be equipped with a temperature controlled, fan clutch.	Yes		
2. Radiator shall be the manufacturers' standard to include a coolant filter.	Yes		
3. All coolant hose clamps shall be Constant Torque.	Yes		
<b>XII. Engine Exhaust System:</b>			
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 -5 inches behind the cab.	Yes		
2. Shall have an under cab mounted horizontal DPF and DOC.	Yes		
3. The end of the exhaust pipe shall have a 45 degree tip out, positioned approximately 118 inches from the ground to the highest point of the tip out when the truck is empty.	Yes		

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<b>XIII. Transmission:</b>			
1. Shall be a HD Allison 6 speed.	Yes		
<b>XIV. Steering System:</b>			
1. Shall have a dual power steering system.	Yes		
2. Steering wheel shall be 18 inches in diameter.	Yes		
3. Steering column shall be fully adjustable.	Yes		
<b>XV. Axles &amp; Suspension:</b>			
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	Yes		
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	Yes		
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	Yes		
4. Shall be equipped with a rear axle lube pump.	Yes		
<b>XVI. Wheels &amp; Tires:</b>			
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.	Yes		
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.	Yes		
<b>XVII. Brake System:</b>			
1. Shall be a Bendix anti-lock series air braking system.	Yes		
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.	Yes		
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.	Yes		

4. All brake blocks shall be non-asbestos.			
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake chambers.	Yes		
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.	Yes		
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.	Yes		
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)	Yes		
<b>XVIII. Debris Body:</b>			
1. Shall be a minimum of 9 to 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.	Yes		
2. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.	Yes		
3. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)	Yes		
4. Debris body shall be capable of raising a minimum of 50 degrees.	Yes		
5. Shall have a splash shield to direct collected waste away from the machine located below the rear door.	Yes		
6. The unloading cycle controls shall be located on the curbside of the truck.	Yes		
7. The debris body shall have a high pressure flushing system, to clean the inside when unloading.	Yes		
8. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying debris and shall have screening to prevent debris from entering the valve. The decanting	Yes		

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valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.			
9. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.	Yes		
10. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.	Yes		
11. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.	Yes		
12. Shall be equipped with a replaceable rear door seal.	Yes		
13. The decanting system shall be flushable with the onboard fresh water.	Yes		
<b>XIX. Auxiliary Engine (If Required):</b>			
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	Yes		
2. Shall have dual element dry air filter with filter minder.	Yes		
3. The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	Yes		
a. Tachometer	Yes		
b. Hour meter	Yes		
c. High water temperature and low oil pressure shutdown.	Yes		
d. Aux. Engine start/stop ignition switch	Yes		
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	Yes		
f. An additional engine throttle shall be provided at the workstation.	Yes		
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	Yes		

h. Shall have access to the auxiliary engine.	Yes	
i. The exhaust from the aux engine will be directed in such a manner that the exhaust does not discolor the boom.	Yes	
<b>XX. Vacuum System:</b>		
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	Yes	
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	Yes	
3. Shall be equipped with a cyclonic style separator.	Exceed	Centrifugal separator
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>		
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be capable of rotating at least 160 degrees - 90 degrees right hand side and 70 degrees left hand side.	Exceed	270 degrees of total rotation, 135 degrees on each side.
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	Yes	
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	Yes	
4. The boom will have a minimum reach of 20 feet from centerline of the chassis.	Exceed	22' of reach from centerline
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	Yes	
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendent with at least 35 feet of cable.	Yes	
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	Yes	
8. Shall have two boom mounted work lights.	Yes	

<b>XXII. Water Tank(s):</b>			
1. Water tanks shall have a metered capacity of 1,000 gallons fresh water.	Yes		
2. Water tanks shall not be an integral part of the debris body. The water tanks shall be located for the lowest possible center of gravity while providing 100% gravity flooded intake(s) to water pump.	Yes		
3. Tanks shall be manufactured from non-corrosive material; and shall carry a 10-year warranty against leaking or cracking.	Yes		
4. The water tanks shall be easily removed to provide complete access to the truck chassis for maintenance if applicable.	Yes		
5. The water tanks shall be adequately vented and connected to equalize water levels while filling	Yes		
6. The water tanks shall be properly equipped to allow filling from standard fire hydrants. An anti-siphon device with a 6-inch air gap, 25 ft. of hydrant fill hose, with fittings and storage rack.	Yes		
7. Shall have a water level sight gauge, and a low water level warning light located at the operator's station.	Yes		
<b>XXIII. High Pressure Water System:</b>			
1. The high-pressure water pump shall be rated for 100gpm @ 2,500psi with continuous 80gpm @ 2,500psi. measured at the front hose reel.	Yes		
2. Controls for operating the high-pressure water system shall be located at the operator's workstation.	Yes		
3. The water pump shall be capable of either operating simultaneously or independently of the vacuum pump.	Yes		
4. Shall be equipped with a 3 inch Y-type filter strainer prior to the pump inlet.	Yes		
<b>XXIV. High Pressure Jet Hose:</b>			
A one-piece 300 ft. hose shall be provided with the unit. The jet hose shall be 1 1/4 in. ID and have an operating pressure of 2,500 psi with a burst pressure of 6,250 psi.	Yes		

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<b>XXVII. Operating Station Controls:</b>			
1. Operator station controls shall contain:	Yes		
a. Truck engine and aux. engine throttle, if required	Yes		
b. High-pressure water pump on/off switch.	Yes		
c. Hose reel forward-reverse valve.	Yes		
d. Adjustable hose reel speed control.	Yes		
e. Water pump over pressure warning light.	Yes		
f. Oil dampened water pressure gauge.	Yes		
g. Tachometer gauges for both truck engine and auxiliary engine (If required)	Yes		
h. Boom controls.	Yes		
i. Handgun control valve located at the operators workstation.	Yes		
<b>XXVIII. Hydraulic System:</b>			
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.	Yes		
<b>XXIX. Electrical:</b>			
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.	Yes		
2. All lights shall be shock mounted in rubber grommets.	Yes		
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.	Yes		
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.	Yes		
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab controlled switch.	Yes		

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<b>XXV. Hose Reel Assembly:</b>			
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.	Yes		
2. Hose reel shall be hydraulically powered in both forward and reverse.	Yes		
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.	Yes		
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.	Yes		
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.	Exceed		Articulating hose reel with 180 degrees of rotation. ** See attached drawing
6. Shall have a manual level winding guide.	Yes		
7. Hose reel shall have an emergency hand crank.	Yes		
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.	Yes		
9. Shall have a footage counter in close proximity to the work station.	Yes		
<b>XXVI. Handgun System:</b>			
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.	Yes		
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.	Yes		
3. The water flow shall be adjustable from a stream, to a fine mist.	Yes		
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.	Yes		
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.	Yes		
6. A handgun shut off valve shall be located at each connection.	Yes		

6. All wring shall be continuous with no splices.	Yes		
<b>XXX. Tool Boxes &amp; Tube Storage:</b>			
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.	Yes		
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.	Yes		
<b>XXXI. Required Accessories:</b>			
1. The unit shall be delivered with all standard accessories to include the following:	Yes		
a. One aluminum storm nozzle with 8 replaceable stainless steel jets.	Yes		
b. One finned nozzle extension.	Yes		
c. One leader hose 1 ¼ inch x 10'	Yes		
d. One 8 inch to 6-inch reducer.	Yes		
e. One 8 inch x 3 feet fluidizer tube.	Yes		
f. One 6 inch x 7-foot vacuum tube w/steel ends.	Yes		
g. One 6-inch tube clamp.	Yes		
h. One 8-inch operator safety tube handle.	Yes		
i. One 6 inch x 3 feet steel catch basin tube	Yes		
j. One 6 inch x 3 feet fluidizer tube.	Yes		
k. One 6-inch operator safety tube handle.	Yes		
<b>XXXII. Exterior Finish:</b>			
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.	Yes		
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	Yes		
2. The unit shall be coated with at least 2 mils automotive epoxy primers, with an additional 2	Yes		

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mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).			
3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	Yes		
<b>XXXIII. Publications:</b>			
1. Each unit that include \ sub assemblies shall be delivered with an operator's manual. (Aux Engine, Rodder, etc.)	Yes		
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each Parts Manual or CD's 2 each Service Manual or CD's	Yes		
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	Yes		
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	Yes		
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	Yes		
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	Yes		
<b>XXXII. Options:</b>			
1. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	Yes		Watson Chalin \$8,450.00
2. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	Yes		Watson Chalin \$8,841.00
3. All optional axles shall be cab controlled for deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.	Yes		
4. All optional axles shall rise when the	Yes		

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transmission is in reverse.		
5. When WSDOT chooses the additional rear mounted tag axle a chute shall be provided to ensure debris does not fall onto the axle or the unit.	Yes	
6. Bidders shall provide a deduct amount for the WSDOT radio installation.	Yes	<\$500.00> Credit
7. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	Yes	<9,250.00> Credit
8. An 80 gallon fuel tank for the chassis	Yes	<\$65.00> Credit
9. Provide pricing for alternate Rodder hose reel locations.	Yes	\$10,000.00
10. Wireless controls for Boom and Rodder systems (Radio Controlled).	Yes	\$3,800.00
11. Add 500 gallons of water carrying capability.	N/A	\$4,395.00 With Push axle addition 385 gallons of water capacity can be added meeting State Bridge deck laws
12. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	Yes	Replace 1 ¼" hose with 500' of 1" high pressure hose
13. Shall provide a deduct amount for the entire high pressure Rodding Water System.	Yes	\$12,000.00
14. Shall have a hose reel shield to protect the operator in case of hose failure.	Yes	\$1,375.00
15. Overweight debris-warning system with a light and audible alarm.	Yes	\$558.00
16. The ability of the boom to reach 24 feet from the centerline of the chassis.	Yes	
17. Shall provide a deduct amount for each set of diagnostic software.	Yes	Allison <\$1,450.00> Credit NAV Engine <\$2,200> Credit
18. Rear mounted hose reel in lieu of a front mounted reel.	Yes	Rear Hose Reel mounted
19. Provide deduct pricing for each hour of required equipment training.	N/A	No charge for Training
20. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.	Yes	Suck on the go is only available with ultra shift 16E09ALL 11SP (ILO Allison) <\$5,00.00> Credit
<b>XXXIII. Performance Test</b>		
Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel	Yes	

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<p>In order to continue to the test portion of the bid any unit, each bidder must first meet the written specification without exception</p>	<p>Yes</p>	
<p>The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.</p>	<p>Yes</p>	
<p>The test will consist of but not limited to the following.</p> <ul style="list-style-type: none"> <li>a. Extract all material from a catch basin(s) selected by WSDOT</li> <li>b. Ability to Decant</li> <li>c. High Pressure Rodding ability</li> <li>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</li> </ul> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>	<p>Yes</p>	

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## Item 2: Truck; Catch Basin Cleaner, Five Axle

**0818****Truck; Catch Basin Cleaner; Five Axle**

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	Yes	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	Yes	
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	Yes	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. g. 6431 Corson Ave Seattle WA 98108 h. 2830 Euclid Ave Wenatchee WA 98807 i. 5720 Capitol Blvd. Tumwater WA 98501 j. 4200 Main St. Vancouver WA 98668 k. 2809 Rudkin Rd. Union Gap WA 98909 l. 221 E North Foothills Dr. Spokane WA 99207	Yes	
<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body manufacturer.	Yes	
2. Cab to Axle (CA) shall be determined by the body manufacturer.	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	Yes	
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	Yes	
<b>III. Frame:</b>		
1. The entire length of the frame rails shall be full depth.	Yes	
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	Yes	
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	Yes	
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	Yes	
5. There shall be no holes or bolts in the top flange of the frame rails.	Yes	
<b>IV. Cab &amp; Related Equipment:</b>		
1. Shall be a premium cab to include the following. d. Molded header pockets for the driver and passenger. e. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side. f. Coaxial speakers.	Yes	
2. The unit shall be equipped with the following:	Yes	
a. Engine voltmeter	Yes	
b. Engine oil pressure gauge.	Yes	
c. Tachometer	Yes	
d. Hour-meter	Yes	
e. Engine coolant temperature gauge.	Yes	
f. Shall have a heater with a minimum output	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
rating of 30,000 BTU to include both fresh air and cab recirculation features.		
g. Factory installed air conditioning.	Yes	
h. Visual and audible low oil pressure and high coolant temperature warning system.	Yes	
3. Dual heated and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with an integral convex spot mirror.	Yes	
4. Shall be equipped with an air horn.	Yes	
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	Yes	
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	Yes	
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	Yes	
8. Shall be equipped with an AM/FM Radio with weather band.	Yes	
9. Shall have a steel front bumper.	Yes	
<b>V. Radio Installation:</b>		
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	Yes	
a. Width 7 3/16 inches.	Yes	
b. Length 8 5/16 inches.	Yes	
c. Thickness 2 1/8 inches.	Yes	
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	Yes	
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	Yes	
4. WSDOT will loan a radio to the successful bidder, as a production aid.	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-provided radio. The radio shall have the ability to be removed and re-installed without removing the header panel.	Yes	
6. To the left of the radio pocket and as close as possible to the radio, a grounded microphone-mounting clip shall be installed.	Yes	
7. On the exterior of the cab roof, there shall be a Larson NMO-K-DS-FME antenna base. The specific mounting location shall provide the antenna with at least 18 inches of clear area around the antenna base and at the tip of the antenna.	Yes	
8. The roof mount antenna base shall be sealed and capped with a protective cover for shipping.	Yes	
9. The antenna cable shall extend to the center radio pocket, and extend at least six inches outside of the radio pocket.	Yes	
10. Above the rear window and centered in the cab, shall be a factory installed and functional two-way radio speaker for the EFJ radio.	Yes	
11. Shall have a dedicated and labeled 15-amp constant duty (fused) power circuit for the EFJ Radio.	Yes	
12. Connected to the 15amp EFJ circuit shall be a power wire with the same connectors, gauge, and length of the EFJ Part# 023-9750-010 with no splices. This wire shall extend up to a header pocket and extend at least twelve inches outside of the pocket.	Yes	
13. Shall have a sensing circuit for the EFJ radio. The circuit shall be a fused 3 amp switched through the ignition switch, and active in the run or accessory positions.	Yes	
14. Connected to the 3 amp EFJ circuit shall be a sense wire, with the same connectors, gauge, and length of the EFJ Part # 023-9750-011. This wire shall extend up to a header pocket, and extend at least six inches outside of the pocket	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
15. All wiring associated with the EF Johnson radio will be continuous with no splices or wire gauge change.	Yes	
16. Each mirror bracket will be outfitted with a CB radio antenna base.	Yes	
<b>VI. Seats:</b>		
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumber support and arm rest.	Yes	
<b>VII. Fuel Tank:</b>		
1. Shall have a 100-gallon aluminum fuel tank.	Yes	
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	Yes	
3. The tank shall have full encompassing rubber between the tank straps and the tank.	Yes	
<b>VIII. Electrical &amp; Lighting System:</b>		
1. All chassis lighting shall be conventional LED lighting.	Yes	
2. Shall be a 12-volt system.	Yes	
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	Yes	
4. Shall have a 160-amp alternator.	Yes	
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	Yes	
6. All battery cables exiting the battery box shall be routed through rubber grommets.	Yes	
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	Yes	
8. The chassis electronic control module and the Allison control module shall be located inside the cab.	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	Yes	
10. Shall be equipped with halogen headlamps.	Yes	
11. Supplier splices into the factory wiring harness is unacceptable	Yes	
<b>IX. Engine:</b>		
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.	Yes	
2. Shall be equipped with an engine compression brake.	Yes	
3. Electronic engine controls shall have the following settings:	Yes	
a. Maximum road speed to be governed at 65 mph.	Yes	
b. Shall have idle bump up/down feature.	Yes	
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.	Yes	
5. The engine shall have a zinc plated nickel alloy oil pan.	Yes	
<b>X. Air Cleaner:</b>		
1. Shall be a dual element, with fresh air intake	Yes	
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.	Yes	
<b>XI. Engine Cooling System:</b>		
1. Shall be equipped with a temperature controlled, fan clutch.	Yes	
2. Radiator shall be the manufacturers standard to	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
include a coolant filter.		
3. All coolant hose clamps shall be Constant Torque.	Yes	
<b>XII. Engine Exhaust System:</b>		
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 - 5 inches behind the cab.	Yes	
2. Shall have an under cab mounted horizontal DPF and DOC.	Yes	
3. The end of the exhaust pipe shall have a 45 degree tip out, positioned approximately 118 inches from the ground to the highest point of the tip out when the truck is empty.	Yes	
<b>XIII. Transmission:</b>		
1. Shall be a HD Allison 6 speed.	Yes	
<b>XIV. Steering System:</b>		
1. Shall have a dual power steering system.	Yes	
2. Steering wheel shall be 18 inches in diameter.	Yes	
3. Steering column shall be fully adjustable.	Yes	
<b>XV. Axles &amp; Suspension:</b>		
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	Yes	
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	Yes	HN REPLACED BY HMX
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	Yes	
4. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5"	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
hub piloted wheels. Fender to be included.		
5. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R 22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	Yes	
6. The pusher and tag axles shall be cab controlled for deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.	Yes	
7. All optional axles shall raise when the transmission is in reverse	Yes	
8. Shall have an appropriately sized air compressor to operate the chassis braking system as well as the additional axles.	Yes	
9. A chute shall be provided to ensure debris does not fall onto the tag axle.	Yes	
10. Shall be equipped with a rear axle lube pump.	Yes	
<b>XVI. Wheels &amp; Tires:</b>		
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.	Yes	
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.	Yes	
<b>XVII. Brake System:</b>		
1. Shall be a Bendix anti-lock series air braking system.	Yes	
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.	Yes	
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.	Yes	
4. All brake blocks shall be non-asbestos.	Yes	
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
chambers.		
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.	Yes	
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.	Yes	
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)	Yes	
<b>XVIII. Debris Body:</b>		
1. Shall be a minimum of 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.	Yes	
2. The body shall have a top hinged, full width flat rear door.	Yes	
3. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.	Yes	
4. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)	Yes	
5. Debris body shall be capable of raising a minimum of 50 degrees.	Yes	
6. Shall have a splash shield to direct collected waste away from the machine and the tag axle located below the rear door.	Yes	
7. The unloading cycle controls shall be located on the curbside of the truck.	Yes	
8. The debris body shall have a high pressure flushing system, to clean the inside when unloading.	Yes	
9. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
debris and shall have screening to prevent debris from entering the valve. The decanting valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.		
10. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.	Yes	
11. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.	Yes	
12. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.	Yes	
13. Shall be equipped with a replaceable rear door seal.	Yes	
14. The decanting system shall be flushable with the onboard fresh water.	Yes	
<b>XIX. Auxiliary Engine (If Required):</b>		
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	Yes	
2. Shall have dual element dry air filter with filter minder.	Yes	
The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	Yes	
a. Tachometer.	Yes	
b. Hour meter.	Yes	
c. High water temperature and low oil pressure shutdown.	Yes	
d. Aux. Engine start/stop ignition switch	Yes	
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	Yes	
f. An additional engine throttle shall be provided at the workstation.	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	Yes	
h. Shall have access to the auxiliary engine.	Yes	
i. The exhaust from the aux engine will be directed in such a manner that the exhaust does not discolor the boom.	Yes	
<b>XX. Vacuum System:</b>		
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	Yes	
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	Yes	
3. Shall be equipped with a cyclonic style separator.	Exceed	Centrifugal Separator
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>		
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be capable of rotating at least 180 degrees - 90 degrees right hand side and 90 degrees left hand side.	Exceed	270 degrees of total rotation, 135 degrees on each side
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	Yes	
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	Yes	
4. The boom will have a minimum reach of 23 feet from centerline of the chassis.	Exceed	26 feet of boom reach from centerline of the chassis
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	Yes	
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendant with at least 35 feet of cable.	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	Yes	
8. Shall have two boom mounted work lights.	Yes	
<b>XXII. Water Tank(s):</b>		
1. Water tanks shall have a metered capacity of 1,000 gallons fresh water.	Yes	
2. Water tanks shall not be an integral part of the debris body. The water tanks shall be located for the lowest possible center of gravity while providing 100% gravity flooded intake(s) to water pump.	Yes	
3. Tanks shall be manufactured from non-corrosive material; and shall carry a 10-year warranty against leaking or cracking.	Yes	
4. The water tanks shall be easily removed to provide complete access to the truck chassis for maintenance if applicable.	Yes	
5. The water tanks shall be adequately vented and connected to equalize water levels while filling.	Yes	
6. The water tanks shall be properly equipped to allow filling from standard fire hydrants. An anti-siphon device with a 6-inch air gap, 25 ft. of hydrant fill hose, with fittings and storage rack.	Yes	
7. Shall have a water level sight gauge, and a low water level warning light located at the operator's station.	Yes	
<b>XXIII. High Pressure Water System:</b>		
1. The high-pressure water pump shall be rated for 100gpm @ 2,500psi with continuous 80gpm @ 2,500psi. measured at the front hose reel.	Yes	
2. Controls for operating the high-pressure water system shall be located at the operator's workstation.	Yes	
3. Shall have a multi-flow water pump capable of operating simultaneously or independently of the vacuum pump.	Yes	
4. Shall be equipped with a 3 inch Y-type filter		

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
strainer prior to the pump inlet.	Yes	
5. Water pump location shall provide a constantly flooded gravity suction inlet due to the pump being mounted below 100% of the water supply.	N/A	Vac-Con Uses a triplex piston water pump designed to have over 30 feet of head draw allowing the pump to be above water thus keeping it out of debris that settles at the bottom of the water tanks
6. Water pump shall have forward pulsation with no flow or pressure drop as described above.	Yes	
<b>XXIV. High Pressure Jet Hose:</b>		
A one-piece 300 ft. hose shall be provided with the unit. The jet hose shall be 1 1/4 in. ID and have an operating pressure of 2,500 psi with a burst pressure of 6,250 psi.	Yes	
<b>XXV. Hose Reel Assembly:</b>		
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.	Yes	
2. Hose reel shall be hydraulically powered in both forward and reverse.	Yes	
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.	Yes	
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.	Yes	
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.	Exceed	Articulating hose reel with 180 degrees of rotation. ** See attached drawing
6. Shall have a manual level winding guide.	Yes	
7. Hose reel shall have an emergency hand crank.	Yes	
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.	Yes	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
9. Shall have a footage counter in close proximity to the work station.	Yes	
<b>XXVI. Handgun System:</b>		
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.	Yes	
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.	Yes	
3. The water flow shall be adjustable from a stream, to a fine mist.	Yes	
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.	Yes	
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.	Yes	
6. A handgun shut off valve shall be located at each connection.	Yes	
<b>XXVII. Operating Station Controls:</b>		
1. Operator station controls shall contain:	Yes	
a. Truck engine and aux. engine throttle, if required	Yes	
b. High-pressure water pump on/off switch.	Yes	
c. Hose reel forward-reverse valve.	Yes	
d. Adjustable hose reel speed control.	Yes	
e. Water pump over pressure warning light.	Yes	
f. Oil dampened water pressure gauge.	Yes	
g. Tachometer gauges for both truck engine and auxiliary engine (if required)	Yes	
h. Boom controls.	Yes	
i. Handgun control valve located at the operators workstation.	Yes	
<b>XXVIII. Hydraulic System:</b>		

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.	Yes	
<b>XXIX. Electrical:</b>		
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.	Yes	
2. All lights shall be shock mounted in rubber grommets.	Yes	
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.	Yes	
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.	Yes	
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab controlled switch.	Yes	
6. All wiring shall be continuous with no splices.	Yes	
<b>XXX. Tool Boxes &amp; Tube Storage:</b>		
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.	Yes	
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.	Yes	
<b>XXXI. Required Accessories:</b>		
1. The unit shall be delivered with all standard accessories to include the following:	Yes	
a. One aluminum storm nozzle with 8	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
replaceable stainless steel jets.		
b. One finned nozzle extension.	Yes	
c. One leader hose 1 ¼ inch x 10'	Yes	
d. One 8 inch to 6-inch reducer.	Yes	
e. One 8 inch x 3 feet fluidizer tube.	Yes	
f. One 6 inch x 7-foot vacuum tube w/steel ends.	Yes	
g. One 6-inch tube clamp.	Yes	
h. One 8-inch operator safety tube handle.	Yes	
i. One 6 inch x 3 feet steel catch basin tube	Yes	
j. One 6 inch x 3 feet fluidizer tube.	Yes	
k. One 6-inch operator safety tube handle.	Yes	
<b>XXXII. Exterior Finish:</b>		
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.	Yes	
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	Yes	
2. The unit shall be coated with at least 2 mils automotive epoxy primers, with an additional 2 mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).	Yes	
3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	Yes	
<b>XXXIII. Publications:</b>		
1. Each unit that include \ sub assemblies shall be delivered with an operator's manual. (Aux Engine, Rodder, etc.)	Yes	
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each - Parts Manual or CD's	Yes	

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
2 each - Service Manual or CD's		
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	Yes	
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	Yes	
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	Yes	
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	Yes	
<b>XXXIV. Options:</b>		
1. An 80 gallon fuel tank for the chassis.	Yes	<\$65.00> Credit
2. Vendor shall provide pricing for alternate hose reel locations.	Yes	\$10,000.00
3. Wireless controls for Boom and Rodder systems (Radio Controlled).	Yes	\$3,800.00
4. Add 500 gallons of water carrying capability.	Yes	\$4,395.00 With Push axle addition 185 gallons of water capacity can be added meeting State Bridge deck laws
5. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	Yes	Replace 1 ¼" hose with 500' of 1" high pressure hose
6. Shall provide a deduct amount for the entire high pressure Rodding Water System.	Yes	\$12,000.00
7. Shall have a hose reel shield to protect the operator in case of hose failure.	Yes	\$1,375.00
8. Overweight debris-warning system with a light and audible alarm.	Yes	\$558.00
9. Bidders shall provide a deduct amount for the WSDOT radio installation	Yes	<\$500.00> Credit
10. Provide pricing for alternate rodder hose reel locations.	Yes	Rear Hose Reel mounted
11. Provide a deduct amount for each set of diagnostic software.	Yes	Allison <1,450.00> Credit Nav Engine <\$2,200.00> Credit

C

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
12. Provide deduct pricing for each hour of required equipment training.	N/A	No charge for Vac-Con Training
13. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	Yes	<\$9,250.00> Credit
14. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.	Yes	Suck on the go is only available with ultra shift 16E09ALL 11SP (ILO Allison) <\$5,00.00> Credit
<b>XXXV. Performance Test</b>		
Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel	Yes	
In order to continue to the test portion of the bid any unit, each bidder must first meet the written specification without exception	Yes	
The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.	Yes	
<p>The test will consist of but not limited to the following.</p> <p>a. Extract all material from a catch basin(s) selected by WSDOT</p> <p>b. Ability to Decant</p> <p>c. High Pressure Rodding ability</p> <p>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</p> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>	Yes	

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## APPENDIX C

## TECHNICAL REQUIREMENTS – Revision 1

## C.1. SHIPPING TERMS

Terms of Sale	Responsibility for Freight Cost and Transit Risk
<i>F.O.B. Destination, freight prepaid and included</i>	<i>Seller - Pays freight charges</i> <i>Seller - Bears freight charges</i> <i>Seller - Owns goods in transit</i> <i>Seller - Files claims (if any)</i>

## C.2. VEHICLE AND BIDDING REQUIREMENTS FOR WSDOT

Acceptance of Terms:

Acceptance of a state contract/purchase order by a Bidder/Supplier for any equipment purchased pursuant to this bid/contract constitutes acceptance of, and agreement with, all of the general and specific provisions, requirements, stipulations, and equipment specification(s) described in this bid/contract.

General:

Equipment offered for this bid/contract must be new (unused) and a current production model that requires no manufacturer or dealership modifications. Units may be sold, prepared, and delivered to WSDOT, or its designated agent, by a dealer who is factory franchised for the specific makes and models of equipment offered.

All accessories and features listed herein shall be those supplied by the Original Equipment Manufacturer (OEM). Any accessories, features, or operational performance required by FMVSS, Washington State Motor Vehicle Laws, OSHA, WISHA and Labor and Industries laws or mandates, that apply to the equipment being bid, shall be provided.. Additionally; all required certifications, inspections, and decaling shall be preformed prior to WSDOT acceptance. All units associated with this purchase shall be of the same design and quality as those sold through normal retail channels; and they shall possess the latest technology, accessories, and features offered on standard retail units; whether or not they are called for in the following specifications.

Failure to comply with any of the specified requirements of the contract constitutes a breach of contract. WSDOT may cancel all or any part of this contract, without incurring any costs whatsoever, including delivery, shipping, or re-stocking fees.

Specification Clarification and Changes:

Clarification for any item in these specifications may be obtained from the Department of Enterprise Services (DES), Office of State Procurement (OSP).

Company Name: \_

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State contracts, for the purchase of state owned equipment, are official state documents that carry legal implications. After award, there shall be no deviations from any requirement stated in the contract during the manufacturing or assembly process of the equipment identified herein, without a contract change order issued by DES, OSP.

Equipment Demonstration:

and During the bid evaluation process and prior to a contract award, Bidder(s) may be required to demonstrate the performance capabilities of the equipment offered in their bid.

Performance demonstration(s) must be conducted within fourteen (14) calendar days after notification that such demonstration(s) is required. Bidder(s) shall conduct all demonstration(s) within Washington State and are responsible for their costs associated with the demonstration(s).

The Bidder(s) will coordinate with the Procurement Coordinator and WSDOT, Equipment Office at (360) 705-7897/7884 to establish the location, date, and time of the performance demonstration(s).

Delivery; and Acceptance:

WSDOT will require the successful vendor to provide the "Supplier Confirmation of Specification Compliance" at time of delivery. The form is attached to this document. Suppliers are responsible for ensuring that all equipment purchased, pursuant to this contract, complies with all of the requirements and specifications listed in the contract.

Supplier(s) shall provide the following documents for review at time of delivery for each item:

1. The manufacturer's line production sheet stating the equipment serial number(s) and listing all of the equipment's components;
2. Completed Invoice;
3. Supplier Confirmation of Specification Compliance;
4. The Manufacturer's Statement of Origin (MSO);
5. Axle weight slips (for all units with axles); and
6. A completed Washington State title application showing both the legal and registered owner as: Washington State Department of Transportation, 7345 Linderson Way S.W. Tumwater WA 98501. The mailing address is: P.O. Box 47357, Olympia WA 98504. Out of state Supplier(s) may contact WSDOT, Equipment Office at 360-705-7882/7884 to obtain a Washington State title application.

Suppliers must notify WSDOT at the phone number listed on the contract or the equipment order, twenty-four (24) hours prior to equipment delivery. This is to ensure that a WSDOT employee is available to sign and date the bill of lading (or other delivery document) and receive the above-mentioned documents to indicate WSDOT has accepted delivery of the equipment.

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When the unit is ready for final delivery, it may be delivered to WSDOT facilities (as specified on the contract and/or equipment order) between the hours of 7:00 am and 3:00 pm, Monday through Friday. Deliveries shall not be made during other hours, on weekends, or on legally recognized state and federal holidays. WSDOT will not accept any responsibility for equipment that has been delivered to or left at a WSDOT facility unless a WSDOT employee has signed and dated the bill of lading or other delivery documents indicating WSDOT has accepted delivery of the equipment.

Supplier shall be solely liable for any equipment damages that occurred prior to WSDOT accepting delivery of the equipment.

Supplier Shall Meet the Delivery Terms of this Contract:

Should the Supplier become aware, in advance of an equipment delivery date, that the Supplier will be unable to meet the contract delivery date, the Supplier may make a written request to DES, OSP for a contract change order modifying the equipment delivery date. Should the Supplier fail to meet the contract equipment delivery date, liquidated damages will be assessed. The amount of liquidated damages will be calculated by using WSDOT's established Equipment Rental Rate Schedule that is in effect as of the date of the contract or equipment order. Liquidated damages will be assessed at the established per day equipment rental rate for each late delivery day, not to exceed ten (10) percent of the equipment's purchase price. This assessment represents a reasonable forecast of WSDOT's actual damages for having to rent replacement equipment. *Damages will not be assessed unless an equipment rental actually occurs.* WSDOT shall deduct the liquidated damages for late delivery from Supplier's invoice.

Warranty Services and Performance:

Equipment suppliers must provide technical support and reasonable equipment modifications for a period of 90 calendar days after the date the equipment is reported in-service per manufacturer and/or factory warranty requirements. (??) This is to ensure that the purchased equipment is capable of performing the specified operational functions.

Bidders/Suppliers must include, as part of the bid, the factory and/or manufacturer's one year warranty, which shall cover one hundred (100) percent parts and labor for the entire unit offered. This warranty must be honored by all authorized factory and/or manufacturer's dealerships.

Supplier shall be liable for all costs associated with warranty repair(s), including, but not limited to, materials, parts, labor, and transport of equipment that are disabled due to the failure of the equipment during the warranty period.

Warranty coverage will not commence until the date the completed equipment is placed into service as reported by WSDOT pursuant to the warranty requirements or 30 days after final payment for the equipment, whichever occurs first.

During the warranty period Supplier must begin physical repairs on equipment failures within seventy-two (72) hours after WSDOT has notified the Supplier of an equipment failure. Should the Supplier fail to begin equipment repairs within 72 hours after notification, WSDOT may elect (based on operational requirements) to make the warranty repairs. Should WSDOT elect to make such warranty repairs, the Supplier agrees to fully reimburse WSDOT for all parts,

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materials, labor, shipping, and travel costs incurred by WSDOT for such warranty repairs. WSDOT shall provide Supplier with a detailed invoice; and Supplier agrees to remit payment to WSDOT within thirty (30) days after receipt of the invoice. Failure to provide and complete warranty service/repair within two (2) weeks (fourteen [14] calendar days) of the vehicle/equipment entering contractor's facility may be sufficient grounds for the State to deny the contractor from bidding in future contracts due to poor performance.

Contractor shall provide a loaner (of similar type) in the event warranty repairs exceed a period of five (5) days. This loaner shall be provided at no additional cost to the State.

During warranty period, the Supplier may, upon notification of a warranty failure, authorize WSDOT equipment repair technicians to make warranty repairs when it is advantageous to WSDOT and the Supplier. The Supplier shall reimburse WSDOT for all costs associated with the warranty repair.

**Training:**

Equipment Supplier shall provide on-site instructor(s) to conduct eight (8) hours of operator training per unit delivered and eight (8) hours of repair technician training per unit delivered. During the eight hour training period, the length and number of training session(s) required may vary based on the equipment's complexity and personnel experience levels. Training session(s) may be less than eight hours should the WSDOT on-site supervisor or Equipment Training Manager determine that all personnel have completed training and the Supplier's training obligation has been fulfilled. The training session(s) shall include, but not be limited to, the below listed items.

1. Operator training will be designed to familiarize personnel with the controls, safety features, operating characteristics, and operator checks and services.
2. Operator training may include teaching operators shifting, acceleration, and braking techniques to maximize operational effectiveness of the unit's power train configuration for equipment so configured.
3. Mechanic training shall be designed to familiarize service and repair technicians with preventive maintenance checks and services, system diagnostics procedures, repairs, adjustments, and any unique requirements associated with the unit.

All training shall be scheduled and coordinated with the ship to addressee. Coordination will include dates, times, location, number of students per session, number of sessions required, facilities, and training equipment and material.

Qualified individuals shall conduct training sessions. "Qualified" means that the trainer must have a high level of knowledge and experience relating to the type of equipment offered or purchased:

1. Person(s) conducting the operator training session(s) must have a minimum of one (1) year of experience actually operating the unit for which training is being conducted or be a factory/manufacturer certified trainer.

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2. Person(s) conducting repair technician training session(s) must have at least one (1) year of experience in the performance of preventive maintenance and repair on the unit for which the training is being conducted or be a factory/manufacturer certified trainer.

An on-site WSDOT supervisor or the Equipment Training Manager will evaluate the training sessions and will determine whether or not the training is adequate. If the training is deemed inadequate, the Supplier agrees to conduct additional training sessions, at no cost to WSDOT, to the satisfaction of WSDOT.

**Special Notes/Workmanship:**

**COVERS:** All caps and covers that must be removed in order to perform daily to bi-weekly preventive maintenance, scheduled warranty service, or maintenance recommended or required by the Contractor, must be secured to the unit by a chain or other device. All hoses, pipes, and plumbing connections shall have either retained covers, quick disconnects, or protective caps.

**HOSE, WIRE AND TUBE ROUTING:** Hose, wire and tube routing shall not impede normal maintenance and adjustment of the unit. Hoses, wires and tubes shall be securely and neatly positioned. Kinks in hoses, wires, or tubing are not acceptable.

**HYDRAULIC SYSTEMS (Workmanship Standards applicable to both traction and controls systems):**

Components containing hydraulic fluid shall not be installed in the cab.

**Hydraulic Symbols:** Hydraulic symbols on schematics shall be interpreted per American National Standard Institute (ANSI) Y32.10.

**Leaks:** Hydraulic leaks are not acceptable. A leak is defined as any fluid flow larger than one (1) drop in four (4) hours.

All components installed in the hydraulic system shall be free of contamination and shall be flushed out or cleaned, if necessary, to meet this requirement.

**Hose Routing:** Hose routing shall meet the following requirements:

- The bend radii of hoses shall be not be less than the manufacturers' recommended minimums.
- Hoses shall be routed no closer than six (6) inches from exhaust components or other heat sources unless proper shielding is provided.
- Hoses shall not come in contact with moving parts.
- Hoses shall be clamped to supporting structures at intervals not exceeding sixty (60) inch hose diameters. Clamps shall be Beranger style or equal cushion clamps.
- Hydraulic hoses will NOT be bundled together using wire ties. This shall be accomplished using the Beranger or equal clamps.
- Fittings shall be steel thirty-seven (37) degree flare type on all pressure lines where practical. Flat-faced "O" ring seal type fittings are acceptable.
- Hoses shall not be routed through holes or across sharp edges without protection from being chafed or cut.
- Hoses shall be of sufficient length to prevent stretching, distortion, and disconnecting.

Company Name: \_

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Pipe fittings shall not be used on the pressure side of any hydraulic circuit. A Teflon sealant shall be used on pipe threads. Sealant shall be used sparingly and shall not contaminate the hydraulic system.

All hydraulic components shall be rated for working pressures to exceed system operating pressures, and have a minimum burst of one and one half (1-1/2) times the system operating pressure.

All hydraulic quick disconnects shall be equipped with protective and retained covers.

#### ELECTRICAL WORKMANSHIP AND MATERIALS:

All wire shall be un-tinned stranded copper with cross-linked polyethylene insulation. Wires shall be color coded. Wire runs and color coding shall be continuous and terminate within a weatherproof junction box or weather pack connectors.

Unless otherwise specified and except for multi-terminal connectors, solderless terminals shall be used for all connections. Solder all ring terminals on ten (10) AWG and smaller wires shall be insulated.

Insulated ring terminals shall meet military specification. Military spec ring terminals have an extra copper sleeve around the terminal barrel that improves the holding force and reduces corrosion.

Butt splices shall have moisture barriers and integral polyolefin heat shrinkable sleeves. Heat shrink tubing over non-sealed butt splices is not acceptable.

Insulation-piercing connectors (scotch locks) shall not be used.

Wires shall be protected by looms, sleeving, and grommets. Wire bundles shall be routed away from moving parts and hot components. Wires shall not be bundled with any electrical wiring or components.

All chassis/body combination units shall have a separate grounding strap installed from the body to the chassis.

Wire routing shall ensure that the following requirements are met:

- Wires shall not be routed closer than six (6) inches to exhaust components or other heat sources, unless they are shielded.
- Wires shall not come in contact with moving parts.

Wires and wire harnesses shall not be routed through holes or across sharp edges without protection from being chafed or cut.

#### GENERAL WELDING REQUIREMENTS:

Distortion of assembled parts is not acceptable. All welds will have proper penetration and be relatively uniform in appearance. All welds shall provide a metal-to-metal bond using proper flux and/or welding materials. Continuous welds shall be used wherever possible and practical.

**Body Fillers:** The covering of welds with body fillers or similar practice is not acceptable.

#### OPERATOR(S) - EQUIPMENT INTERFACE:

**Control Locations:** The operator(s) stations(s), including safety devices, controls and gauges, shall be accessible, readable, and visible to the operator without distracting from the safe operational requirements of the equipment ordered.

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Supplier Specification Confirmation	Supplier Initials and Date
The supplier will ensure all of the annotated items listed below are inspected prior to delivery.	D.A. 6-5-2012
Supplier is 100 % compliant with the bid specification(s) as bid by the supplier.	D.A. 6-5-2012
The unit is clean inside/outside upon delivery to WSDOT	D.A. 6-5-2012
All required documentation as per the WSDOT and OSP bidding requirements are presented at time of delivery. Example:	D.A. 6-5-2012
1. MSO	D.A. 6-5-2012
2. Title Application	D.A. 6-5-2012
3. Axle weight slip (if required)	D.A. 6-5-2012
4. Supplier Confirmation of Specification Compliance (this form)	D.A. 6-5-2012
5. Invoice	D.A. 6-5-2012
All safety equipment is provided and in proper working condition. (Lights, reflectors, seatbelts, etc.)	D.A. 6-5-2012
All required publications are brought with the unit upon delivery.	D.A. 6-5-2012
Workmanship Issues:	
a) All hoses and wiring are protected from damage.	D.A. 6-5-2012
b) All fluid levels have been checked and are at the manufacturer's suggested levels.	D.A. 6-5-2012
c) All components are in proper working condition.	D.A. 6-5-2012
d) Welds are consistent and without cracks	D.A. 6-5-2012
e) No runs, cracks or chips in the paint.	D.A. 6-5-2012
Printed Vendor Name Equipment	
Vendor Signature	Date <u>6-5-12</u>

Company Name: \_

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**C.3 TECHNICAL SPECIFICATIONS – Revision 1**

**Item 1: Truck Mounted Catch Basin Cleaner, Tandem Axle**

**0817**

**Truck; Catch Basin Cleaner; Tandem Axle**

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
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<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	X	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	X	Engine & Transmission software & cables
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	X	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. a. 6431 Corson Ave Seattle WA 98108 b. 2830 Euclid Ave. Wenatchee WA 98807 c. 5720 Capitol Blvd. Tumwater WA 98501 d. 4200 Main St Vancouver WA 98668 e. 2809 Rudkin Rd Union Gap WA 98909 f. 221 E North Foothills Dr Spokane WA 99207	X	
<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body	X	

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manufacturer.			
2. Cab to Axle (CA) shall be determined by the body manufacturer.	X		
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	X		
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	X		
<b>III. Frame:</b>			
1. The entire length of the frame rails shall be full depth.	X		
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	X		
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	X		
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	X		
5. There shall be no holes or bolts in the top flange of the frame rails.	X		
<b>IV. Cab &amp; Related Equipment:</b>			
1. Shall be a premium cab to include the following. a. Molded header pockets for the driver and passenger. b. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side. c. Coaxial speakers.	X		
2. The unit shall be equipped with the following:			
a. Engine voltmeter	X		
b. Engine oil pressure gauge.	X		
c. Tachometer	X		
d. Hour-meter	X		
e. Engine coolant temperature gauge.	X		
f. Shall have a heater with a minimum output rating of 30,000 BTU to include both fresh	X		

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air and cab recirculation features.			
g. Factory installed air conditioning.	X		
h. Visual and audible low oil pressure and high coolant temperature warning system.	X		
3. Dual, heated, and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with a convex spot mirror.	X		
4. Shall be equipped with an air horn.	X		
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	X		
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	X		
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	X		
8. Shall be equipped with an AM/FM Radio with weather band.	X		
9. Shall have a steel front bumper.	X		
<b>V. Radio Installation:</b>			
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	X		
a. Width 7 3/16 inches.	X		
b. Length 8 5/16 inches.	X		
c. Thickness 2 1/8 inches.	X		
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	X		
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	X		
4. WSDOT will loan a radio to the successful bidder, as a production aid.	X		
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-provided radio. The radio shall have the ability to be removed and re-installed without removing the header panel.	X		

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6. To the left of the radio pocket and as close as possible to the radio, a grounded microphone-mounting clip shall be installed.	X		
7. On the exterior of the cab roof, there shall be a Larson NMO-K-DS-FME antenna base. The specific mounting location shall provide the antenna with at least 18 inches of clear area around the antenna base and at the tip of the antenna.	X		
8. The roof mount antenna base shall be sealed and capped with a protective cover for shipping.	X		
9. The antenna cable shall extend to the center radio pocket, and extend at least six inches outside of the radio pocket.	X		
10. Above the rear window and centered in the cab, shall be a factory installed and functional two-way radio speaker for the EF J radio.	X		
11. Shall have a dedicated and labeled 15-amp constant duty (fused) power circuit for the EFJ Radio.	X		
12. Connected to the 15amp EFJ circuit shall be a power wire with the same connectors, gauge, and length of the EFJ Part# 023-9750-010 with no splices. This wire shall extend up to a header pocket and extend at least twelve inches outside of the pocket.	X		
13. Shall have a sensing circuit for the EFJ radio. The circuit shall be a fused 3 amp switched through the ignition switch, and active in the run or accessory positions.	X		
14. Connected to the 3 amp EFJ circuit shall be a sense wire, with the same connectors, gauge, and length of the EFJ Part # 023-9750-011. This wire shall extend up to a header pocket, and extend at least six inches outside of the pocket	X		
15. All wiring associated with the EF Johnson radio will be continuous with no splices or wire gauge change.	X		
16. Each mirror bracket will be outfitted with a CB radio antenna base.	X		

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<b>VI. Seats:</b>			
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumber support and arm rest.	X		
<b>VII. Fuel Tank:</b>			
1. Shall have a 100 gallon aluminum fuel tank.	X		
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	X		
3. The tank shall have full encompassing rubber between the tank straps and the tank.	X		
<b>VIII. Electrical &amp; Lighting System:</b>			
1. All chassis lighting shall be conventional LED lighting.	X		
2. Shall be a 12-volt system.	X		
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	X		
4. Shall have a 160-amp alternator.	X		
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	X		
6. All battery cables exiting the battery box shall be routed through rubber grommets.	X		
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	X		
8. The chassis electronic control module and the Allison control module shall be located inside the cab and accessible for diagnostics.	X		
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	X		
10. Shall be equipped with halogen headlamps.	X		
11. Supplier splices into the factory wiring harness is unacceptable	X		

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<b>IX. Engine:</b>			
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.	X		
2. Shall be equipped with an engine compression brake.	X		
3. Electronic engine controls shall have the following settings:	X		
a. Maximum road speed to be governed at 65 mph.	X		
b. Shall have idle bump up/down feature.	X		
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.	X		
5. The engine shall have a zinc plated nickel alloy oil pan.	X		
<b>X. Air Cleaner:</b>			
1. Shall be a dual element, with fresh air intake	X		
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.	X		
<b>XI. Engine Cooling System:</b>			
1. Shall be equipped with a temperature controlled, fan clutch.	X		
2. Radiator shall be the manufacturers' standard to include a coolant filter.	X		
3. All coolant hose clamps shall be Constant Torque.	X		
<b>XII. Engine Exhaust System:</b>			
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 -5 inches behind the cab.	X		
2. Shall have an under cab mounted horizontal DPF and DOC.	X		
3. The end of the exhaust pipe shall have a 45 degree tip out, positioned approximately 118 inches from the ground to the highest point of the tip out when the truck is empty.	X		

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<b>XIII. Transmission:</b>			
1. Shall be a HD Allison 6 speed.	X		
<b>XIV. Steering System:</b>			
1. Shall have a dual power steering system.	X		
2. Steering wheel shall be 18 inches in diameter.	X		
3. Steering column shall be fully adjustable.	X		
<b>XV. Axles &amp; Suspension:</b>			
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	X		
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	X		HN suspension replaced with HMX
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	X		
4. Shall be equipped with a rear axle lube pump.	X		
<b>XVI. Wheels &amp; Tires:</b>			
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.	X		
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.	X		
<b>XVII. Brake System:</b>			
1. Shall be a Bendix anti-lock series air braking system.	X		
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.	X		
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.	X		

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4. All brake blocks shall be non-asbestos.	X	
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake chambers.	X	
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.	X	
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.	X	
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)	X	
<b>XVIII. Debris Body:</b>		
1. Shall be a minimum of 9 to 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.	X	10 yard
2. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.	X	
3. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)	X	
4. Debris body shall be capable of raising a minimum of 50 degrees.	X	
5. Shall have a splash shield to direct collected waste away from the machine located below the rear door.	X	
6. The unloading cycle controls shall be located on the curbside of the truck.	X	
7. The debris body shall have a high pressure flushing system, to clean the inside when unloading.	X	
8. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying debris and shall have screening to prevent debris from entering the valve. The decanting	X	

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valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.			
9. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.	X		
10. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.	X		
11. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.	X		
12. Shall be equipped with a replaceable rear door seal.	X		
13. The decanting system shall be flushable with the onboard fresh water.	X		
<b>XIX. Auxiliary Engine (If Required):</b>			
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	X		
2. Shall have dual element dry air filter with filter minder.	X		
3. The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	X		
a. Tachometer	X		
b. Hour meter	X		
c. High water temperature and low oil pressure shutdown.	X		
d. Aux. Engine start/stop ignition switch	X		
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	X		
f. An additional engine throttle shall be provided at the workstation.	X		
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	X		

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h. Shall have access to the auxiliary engine.	X		
i. The exhaust from the aux engine will be directed in such a manner that the exhaust does not discolor the boom.	X		
<b>XX. Vacuum System:</b>			
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	X		
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	X		
3. Shall be equipped with a cyclonic style separator.	X		
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>			
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be capable of rotating at least 160 degrees – 90 degrees right hand side and 70 degrees left hand side.	X		
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	X		
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	X		
4. The boom will have a minimum reach of 20 feet from centerline of the chassis.	X		
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	X		Adjustable via hydraulic valve located on boom turret
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendent with at least 35 feet of cable.	X		
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	X		
8. Shall have two boom mounted work lights.	X		

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<b>XXV. Hose Reel Assembly:</b>			
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.	X		
2. Hose reel shall be hydraulically powered in both forward and reverse.	X		
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.	X		
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.	X		
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.	X		
6. Shall have a manual level winding guide.	X		
7. Hose reel shall have an emergency hand crank.	X		
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.	X		
9. Shall have a footage counter in close proximity to the work station.	X		
<b>XXVI. Handgun System:</b>			
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.	X		
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.	X		
3. The water flow shall be adjustable from a stream, to a fine mist.	X		
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.	X		
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.	X		
6. A handgun shut off valve shall be located at each connection.	X		

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<b>XXVII. Operating Station Controls:</b>			
1. Operator station controls shall contain:			
a. Truck engine and aux. engine throttle, if required	X		
b. High-pressure water pump on/off switch.	X		
c. Hose reel forward-reverse valve.	X		
d. Adjustable hose reel speed control.	X		
e. Water pump over pressure warning light.	X		
f. Oil dampened water pressure gauge.	X		
g. Tachometer gauges for both truck engine and auxiliary engine (If required)	X		
h. Boom controls.	X		
i. Handgun control valve located at the operators workstation.	X		
<b>XXVIII. Hydraulic System:</b>			
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.	X		3 each hydraulic shut off valves provided
<b>XXIX. Electrical:</b>			
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.	X		
2. All lights shall be shock mounted in rubber grommets.	X		
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.	X		
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.	X		
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab controlled switch.	X		
6. All wiring shall be continuous with no splices.	X		

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<b>XXX. Tool Boxes &amp; Tube Storage:</b>			
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.	X		
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.	X		
<b>XXXI. Required Accessories:</b>			
1. The unit shall be delivered with all standard accessories to include the following:			
a. One aluminum storm nozzle with 8 replaceable stainless steel jets.	X		
b. One finned nozzle extension.	X		
c. One leader hose 1 ¼ inch x 10'	X		
d. One 8 inch to 6-inch reducer.	X		
e. One 8 inch x 3 feet fluidizer tube.	X		
f. One 6 inch x 7-foot vacuum tube w/steel ends.	X		
g. One 6-inch tube clamp.	X		
h. One 8-inch operator safety tube handle.	X		
i. One 6 inch x 3 feet steel catch basin tube	X		
j. One 6 inch x 3 feet fluidizer tube.	X		
k. One 6-inch operator safety tube handle.	X		
<b>XXXII. Exterior Finish:</b>			
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.			
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	X		
2. The unit shall be coated with at least 2 mils automotive epoxy primers, with an additional 2 mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).	X		

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3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	X	
<b>XXXIII. Publications:</b>		
1. Each unit that include \ sub assemblies shall be delivered with an operator's manual. (Aux Engine, Rodder, etc.)	X	
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each Parts Manual or CD's 2 each Service Manual or CD's	X	
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	X	
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	X	
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	X	
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	X	
<b>XXXII. Options:</b>		
1. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	X	Watson \$ 9,450
2. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	X	Watson \$ 9,841
3. All optional axles shall be cab controlled for deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.	X	
4. All optional axles shall rise when the transmission is in reverse.	X	

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5. When WSDOT chooses the additional rear mounted tag axle a chute shall be provided to ensure debris does not fall onto the axle or the unit.	X	\$ 3,500
6. Bidders shall provide a deduct amount for the WSDOT radio installation.	X	< \$ 500 >
7. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	X	< \$ 8,000 >
8. An 80 gallon fuel tank for the chassis	X	< \$ 50 >
9. Provide pricing for alternate Rodder hose reel locations.		N/A
10. Wireless controls for Boom and Rodder systems (Radio Controlled).	X	\$ 4,775
11. Add 500 gallons of water carrying capability.	X	\$ 4,180
12. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	X	< \$ 400 >
13. Shall provide a deduct amount for the entire high pressure Rodding Water System.	X	< \$ 18,000 >
14. Shall have a hose reel shield to protect the operator in case of hose failure.	X	\$ 1,186
15. Overweight debris-warning system with a light and audible alarm.	X	\$ 6,500 Digital read out w/ alarm & light \$ 12,000 Digital read out, vac-disable system with alarm and truck weights
16. The ability of the boom to reach 24 feet from the centerline of the chassis.	X	\$ 18,332- 5 x 5 boom
17. Shall provide a deduct amount for each set of diagnostic software.	X	< \$ 1,200 > = Allison < \$ 1,900 > = Navistar
18. Rear mounted hose reel in lieu of a front mounted reel.		N/A
19. Provide deduct pricing for each hour of required equipment training.	X	< \$ 80 >
20. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.		Level I = \$ 1,220 Level II = \$ 3,275 ( Fan unit only)
<b>XXXIII. Performance Test</b>		
Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel		
In order to continue to the test portion of the bid any unit, each bidder must first meet the written		

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<p><b>specification without exception</b></p>		
<p>The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.</p>		
<p>The test will consist of but not limited to the following.</p> <ul style="list-style-type: none"> <li>a. Extract all material from a catch basin(s) selected by WSDOT</li> <li>b. Ability to Decant</li> <li>c. High Pressure Rodding ability</li> <li>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</li> </ul> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>		

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## Item 2: Truck; Catch Basin Cleaner, Five Axle

0818

## Truck; Catch Basin Cleaner; Five Axle

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	X	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	X	
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	X	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. g. 6431 Corson Ave Seattle WA 98108 h. 2830 Euclid Ave Wenatchee WA 98807 i. 5720 Capitol Blvd. Tumwater WA 98501 j. 4200 Main St. Vancouver WA 98668 k. 2809 Rudkin Rd. Union Gap WA 98909 l. 221 E North Foothills Dr. Spokane WA 99207	X	
<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body manufacturer.	X	
2. Cab to Axle (CA) shall be determined by the body manufacturer.	X	
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	X	
<b>III. Frame:</b>		
1. The entire length of the frame rails shall be full depth.	X	
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	X	
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	X	
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	X	
5. There shall be no holes or bolts in the top flange of the frame rails.	X	
<b>IV. Cab &amp; Related Equipment:</b>		
1. Shall be a premium cab to include the following. d. Molded header pockets for the driver and passenger. e. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side. f. Coaxial speakers.	X	
2. The unit shall be equipped with the following:	X	
a. Engine voltmeter	X	
b. Engine oil pressure gauge.	X	
c. Tachometer	X	
d. Hour-meter	X	
e. Engine coolant temperature gauge.	X	
f. Shall have a heater with a minimum output rating of 30,000 BTU to include both fresh air and cab recirculation features.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
g. Factory installed air conditioning.	X	
h. Visual and audible low oil pressure and high coolant temperature warning system.	X	
3. Dual heated and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with an integral convex spot mirror.	X	
4. Shall be equipped with an air horn.	X	
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	X	
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	X	
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	X	
8. Shall be equipped with an AM/FM Radio with weather band.	X	
9. Shall have a steel front bumper.	X	
<b>V. Radio Installation:</b>		
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	X	
a. Width 7 3/16 inches.	X	
b. Length 8 5/16 inches.	X	
c. Thickness 2 1/8 inches.	X	
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	X	
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	X	
4. WSDOT will loan a radio to the successful bidder, as a production aid.	X	
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
16. Each mirror bracket will be outfitted with a CB radio antenna base.	X	
<b>VI. Seats:</b>		
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumber support and arm rest.	X	
<b>VII. Fuel Tank:</b>		
1. Shall have a 100-gallon aluminum fuel tank.	X	
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	X	
3. The tank shall have full encompassing rubber between the tank straps and the tank.	X	
<b>VIII. Electrical &amp; Lighting System:</b>		
1. All chassis lighting shall be conventional LED lighting.	X	
2. Shall be a 12-volt system.	X	
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	X	
4. Shall have a 160-amp alternator.	X	
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	X	
6. All battery cables exiting the battery box shall be routed through rubber grommets.	X	
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	X	
8. The chassis electronic control module and the Allison control module shall be located inside the cab.	X	
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
10. Shall be equipped with halogen headlamps.	X	
11. Supplier splices into the factory wiring harness is unacceptable	X	
<b>IX. Engine:</b>		
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.	X	
2. Shall be equipped with an engine compression brake.	X	
3. Electronic engine controls shall have the following settings:	X	
a. Maximum road speed to be governed at 65 mph.	X	
b. Shall have idle bump up/down feature.	X	
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.	X	
5. The engine shall have a zinc plated nickel alloy oil pan.	X	
<b>X. Air Cleaner:</b>		
1. Shall be a dual element, with fresh air intake	X	
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.	X	
<b>XI. Engine Cooling System:</b>		
1. Shall be equipped with a temperature controlled, fan clutch.	X	
2. Radiator shall be the manufacturers standard to include a coolant filter.	X	
3. All coolant hose clamps shall be Constant Torque.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>XII. Engine Exhaust System:</b>		
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 - 5 inches behind the cab.	X	
2. Shall have an under cab mounted horizontal DPF and DOC.	X	
3. The end of the exhaust pipe shall have a 45 degree tip out, positioned approximately 118 inches from the ground to the highest point of the tip out when the truck is empty.	X	
<b>XIII. Transmission:</b>		
1. Shall be a HD Allison 6 speed.	X	
<b>XIV. Steering System:</b>		
1. Shall have a dual power steering system.	X	
2. Steering wheel shall be 18 inches in diameter.	X	
3. Steering column shall be fully adjustable.	X	
<b>XV. Axles &amp; Suspension:</b>		
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	X	
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	X	HN REPLACED BY HMX
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	X	
4. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	X	
5. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
Model Para lift Ultra Light or equal. The tires shall be 255/70R 22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.		
6. The pusher and tag axles shall be cab controlled for deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.	X	
7. All optional axles shall raise when the transmission is in reverse	X	
8. Shall have an appropriately sized air compressor to operate the chassis braking system as well as the additional axles.	X	
9. A chute shall be provided to ensure debris does not fall onto the tag axle.	X	
10. Shall be equipped with a rear axle lube pump.	X	
<b>XVI. Wheels &amp; Tires:</b>		
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.	X	
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.	X	
<b>XVII. Brake System:</b>		
1. Shall be a Bendix anti-lock series air braking system.	X	
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.	X	
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.	X	
4. All brake blocks shall be non-asbestos.	X	
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake chambers.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.	X	
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.	X	
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)	X	
<b>XVIII. Debris Body:</b>		
1. Shall be a minimum of 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.	X	
2. The body shall have a top hinged, full width flat rear door.	X	
3. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.	X	
4. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)	X	
5. Debris body shall be capable of raising a minimum of 50 degrees.	X	
6. Shall have a splash shield to direct collected waste away from the machine and the tag axle located below the rear door.	X	
7. The unloading cycle controls shall be located on the curbside of the truck.	X	
8. The debris body shall have a high pressure flushing system, to clean the inside when unloading.	X	
9. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying debris and shall have screening to prevent debris from entering the valve. The decanting valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
10. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.	X	
11. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.	X	
12. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.	X	
13. Shall be equipped with a replaceable rear door seal.	X	
14. The decanting system shall be flushable with the onboard fresh water.	X	
<b>XIX. Auxiliary Engine (If Required):</b>		
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	X	
2. Shall have dual element dry air filter with filter minder.	X	
The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	X	
a. Tachometer.	X	
b. Hour meter.	X	
c. High water temperature and low oil pressure shutdown.	X	
d. Aux. Engine start/stop ignition switch	X	
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	X	
f. An additional engine throttle shall be provided at the workstation.	X	
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
h. Shall have access to the auxiliary engine.	X	
i. The exhaust from the aux engine will be directed in such a manner that the exhaust does not discolor the boom.	X	
<b>XX. Vacuum System:</b>		
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	X	
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	X	
3. Shall be equipped with a cyclonic style separator.	X	
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>		
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be capable of rotating at least 180 degrees – 90 degrees right hand side and 90 degrees left hand side.	X	
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	X	
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	X	
4. The boom will have a minimum reach of 23 feet from centerline of the chassis.	X	
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	X	Programmable from the Can Bus screen
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendent with at least 35 feet of cable.	X	
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
8. Shall have two boom mounted work lights.	X	
<b>XXII. Water Tank(s):</b>		
1. Water tanks shall have a metered capacity of 1,000 gallons fresh water.	X	
2. Water tanks shall not be an integral part of the debris body. The water tanks shall be located for the lowest possible center of gravity while providing 100% gravity flooded intake(s) to water pump.	X	
3. Tanks shall be manufactured from non-corrosive material; and shall carry a 10-year warranty against leaking or cracking.	X	
4. The water tanks shall be easily removed to provide complete access to the truck chassis for maintenance if applicable.	X	
5. The water tanks shall be adequately vented and connected to equalize water levels while filling.	X	
6. The water tanks shall be properly equipped to allow filling from standard fire hydrants. An anti-siphon device with a 6-inch air gap, 25 ft. of hydrant fill hose, with fittings and storage rack.	X	
7. Shall have a water level sight gauge, and a low water level warning light located at the operator's station.	X	
<b>XXIII. High Pressure Water System:</b>		
1. The high-pressure water pump shall be rated for 100gpm @ 2,500psi with continuous 80gpm @ 2,500psi. measured at the front hose reel.	X	
2. Controls for operating the high-pressure water system shall be located at the operator's workstation.	X	
3. Shall have a multi-flow water pump capable of operating simultaneously or independently of the vacuum pump.	X	
4. Shall be equipped with a 3 inch Y-type filter strainer prior to the pump inlet.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
5. Water pump location shall provide a constantly flooded gravity suction inlet due to the pump being mounted below 100% of the water supply.	X	
6. Water pump shall have forward pulsation with no flow or pressure drop as described above.	X	
<b>XXIV. High Pressure Jet Hose:</b>		
A one-piece 300 ft. hose shall be provided with the unit. The jet hose shall be 1 1/4 in. ID and have an operating pressure of 2,500 psi with a burst pressure of 6,250 psi.	X	
<b>XXV. Hose Reel Assembly:</b>		
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.	X	
2. Hose reel shall be hydraulically powered in both forward and reverse.	X	
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.	X	
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.	X	
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.	X	
6. Shall have a manual level winding guide.	X	
7. Hose reel shall have an emergency hand crank.	X	
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.	X	
9. Shall have a footage counter in close proximity to the work station.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>XXVI. Handgun System:</b>		
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.	X	
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.	X	
3. The water flow shall be adjustable from a stream, to a fine mist.	X	
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.	X	
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.	X	
6. A handgun shut off valve shall be located at each connection.	X	
<b>XXVII. Operating Station Controls:</b>		
1. Operator station controls shall contain:	X	
a. Truck engine and aux. engine throttle, if required	X	
b. High-pressure water pump on/off switch.		
c. Hose reel forward-reverse valve.	X	
d. Adjustable hose reel speed control.	X	
e. Water pump over pressure warning light.	X	
f. Oil dampened water pressure gauge.	X	
g. Tachometer gauges for both truck engine and auxiliary engine (if required)	X	
h. Boom controls.	X	
i. Handgun control valve located at the operators workstation.	X	
<b>XXVIII. Hydraulic System:</b>		
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>XXIX. Electrical:</b>		
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.	X	
2. All lights shall be shock mounted in rubber grommets.	X	
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.	X	
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.	X	
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab controlled switch.	X	
6. All wiring shall be continuous with no splices.	X	
<b>XXX. Tool Boxes &amp; Tube Storage:</b>		
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.	X	
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.	X	
<b>XXXI. Required Accessories:</b>		
1. The unit shall be delivered with all standard accessories to include the following:		
a. One aluminum storm nozzle with 8 replaceable stainless steel jets.	X	
b. One finned nozzle extension.	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
c. One leader hose 1 ¼ inch x 10'	X	
d. One 8 inch to 6-inch reducer.	X	
e. One 8 inch x 3 feet fluidizer tube.	X	
f. One 6 inch x 7-foot vacuum tube w/steel ends.	X	
g. One 6-inch tube clamp.	X	
h. One 8-inch operator safety tube handle.	X	
i. One 6 inch x 3 feet steel catch basin tube	X	
j. One 6 inch x 3 feet fluidizer tube.	X	
k. One 6-inch operator safety tube handle.	X	
<b>XXXII. Exterior Finish:</b>		
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.	X	
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	X	
2. The unit shall be coated with at least 2 mils automotive epoxy primers, with an additional 2 mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).	X	
3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	X	
<b>XXXIII. Publications:</b>		
1. Each unit that include \ sub assemblies shall be delivered with an operator's manual. (Aux Engine, Rodder, etc.)	X	
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each - Parts Manual or CD's 2 each - Service Manual or CD's	X	

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	X	
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	X	
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	X	
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	X	
<b>XXXIV. Options:</b>		
1. An 80 gallon fuel tank for the chassis.	X	< \$ 50>
2. Vendor shall provide pricing for alternate hose reel locations.		N/A
3. Wireless controls for Boom and Rodder systems (Radio Controlled).	X	\$ 4,775
4. Add 500 gallons of water carrying capability.	X	\$ 4,180
5. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	X	< \$ 400>
6. Shall provide a deduct amount for the entire high pressure Rodding Water System.	X	< \$ 18,000>
7. Shall have a hose reel shield to protect the operator in case of hose failure.	X	\$ 1,186
8. Overweight debris-warning system with a light and audible alarm.	X	\$ 6,500 Digital read out w/ alarm & light \$ 12,000 Digital read out, vac-disable system with alarm and truck weights
9. Bidders shall provide a deduct amount for the WSDOT radio installation	X	< \$ 500>
10. Provide pricing for alternate rodder hose reel locations.		N/A
11. Provide a deduct amount for each set of diagnostic software.	X	< \$ 1,200>=Allison < \$ 1,900> = Navistar
12. Provide deduct pricing for each hour of required equipment training.	X	< \$80>

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Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
13. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	X	< \$ 8,000>
14. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.	X	Level I = \$ 1,220 Level II = \$ 3,275 ( Fan unit only)
<b>XXXV. Performance Test</b>		
Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel		
In order to continue to the test portion of the bid any unit, each bidder must first meet the written specification without exception		
The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.		
<p>The test will consist of but not limited to the following.</p> <ul style="list-style-type: none"> <li>a. Extract all material from a catch basin(s) selected by WSDOT</li> <li>b. Ability to Decant</li> <li>c. High Pressure Rodding ability</li> <li>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</li> </ul> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>		

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Supplier Specification Confirmation	Supplier Initials and Date
The supplier will ensure all of the annotated items listed below are inspected prior to delivery.	
Supplier is 100 % compliant with the bid specification(s) as bid by the supplier.	
The unit is clean inside/outside upon delivery to WSDOT	
All required documentation as per the WSDOT and OSP bidding requirements are presented at time of delivery. Example:	
1. MSO	
2. Title Application	
3. Axle weight slip (if required)	
4. Supplier Confirmation of Specification Compliance (this form)	
5. Invoice	
All safety equipment is provided and in proper working condition. (Lights, reflectors, seatbelts, etc.)	
All required publications are brought with the unit upon delivery.	
Workmanship Issues:	
a) All hoses and wiring are protected from damage.	
b) All fluid levels have been checked and are at the manufacturer's suggested levels.	
c) All components are in proper working condition.	
d) Welds are consistent and without cracks	
e) No runs, cracks or chips in the paint.	
Printed Vendor Name	
Vendor Signature	Date 6/5/12

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**C.3 TECHNICAL SPECIFICATIONS – Revision 1**

**Item 1: Truck Mounted Catch Basin Cleaner, Tandem Axle**

**0817**

**Truck; Catch Basin Cleaner; Tandem Axle**

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	✓	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	✓	
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	✓	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. a. 6431 Corson Ave Seattle WA 98108 b. 2830 Euclid Ave. Wenatchee WA 98807 c. 5720 Capitol Blvd. Tumwater WA 98501 d. 4200 Main St Vancouver WA 98668 e. 2809 Rudkin Rd Union Gap WA 98909 f. 221 E North Foothills Dr Spokane WA 99207	✓ ✓ ✓ ✓ ✓ ✓	

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<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body manufacturer.	✓	
2. Cab to Axle (CA) shall be determined by the body manufacturer.	✓	
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	✓	
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	✓	
<b>III. Frame:</b>		
1. The entire length of the frame rails shall be full depth.	✓	
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	✓	
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	✓	
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	✓	
5. There shall be no holes or bolts in the top flange of the frame rails.	✓	
<b>IV. Cab &amp; Related Equipment:</b>		
1. Shall be a premium cab to include the following. <ul style="list-style-type: none"> <li>a. Molded header pockets for the driver and passenger.</li> <li>b. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side.</li> <li>c. Coaxial speakers.</li> </ul>	✓	
2. The unit shall be equipped with the following:	✓	
a. Engine voltmeter	✓	
b. Engine oil pressure gauge.	✓	
c. Tachometer	✓	
d. Hour-meter	✓	
e. Engine coolant temperature gauge.	✓	
f. Shall have a heater with a minimum output	✓	

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rating of 30,000 BTU to include both fresh air and cab recirculation features.			
g. Factory installed air conditioning.	✓		
h. Visual and audible low oil pressure and high coolant temperature warning system.	✓		
3. Dual, heated, and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with a convex spot mirror.	✓		
4. Shall be equipped with an air horn.	✓		
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	✓		
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	✓		
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	✓		
8. Shall be equipped with an AM/FM Radio with weather band.	✓		
9. Shall have a steel front bumper.	✓		
<b>V. Radio Installation:</b>			
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	✓		
a. Width 7 3/16 inches.	✓		
b. Length 8 5/16 inches.	✓		
c. Thickness 2 1/8 inches.	✓		
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	✓		
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	✓		
4. WSDOT will loan a radio to the successful bidder, as a production aid.	✓		
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-provided radio. The radio shall have the ability to be removed and re-installed without	✓		

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*Handwritten initials/signature*

removing the header panel.			
6. To the left of the radio pocket and as close as possible to the radio, a grounded microphone-mounting clip shall be installed.	✓		
7. On the exterior of the cab roof, there shall be a Larson NMO-K-DS-FME antenna base. The specific mounting location shall provide the antenna with at least 18 inches of clear area around the antenna base and at the tip of the antenna.	✓		
8. The roof mount antenna base shall be sealed and capped with a protective cover for shipping.	✓		
9. The antenna cable shall extend to the center radio pocket, and extend at least six inches outside of the radio pocket.	✓		
10. Above the rear window and centered in the cab, shall be a factory installed and functional two-way radio speaker for the EF J radio.	✓		
11. Shall have a dedicated and labeled 15-amp constant duty (fused) power circuit for the EFJ Radio.	✓		
12. Connected to the 15amp EFJ circuit shall be a power wire with the same connectors, gauge, and length of the EFJ Part# 023-9750-010 with no splices. This wire shall extend up to a header pocket and extend at least twelve inches outside of the pocket.	✓		
13. Shall have a sensing circuit for the EFJ radio. The circuit shall be a fused 3 amp switched through the ignition switch, and active in the run or accessory positions.	✓		
14. Connected to the 3 amp EFJ circuit shall be a sense wire, with the same connectors, gauge, and length of the EFJ Part # 023-9750-011. This wire shall extend up to a header pocket, and extend at least six inches outside of the pocket	✓		
15. All wiring associated with the EF Johnson radio will be continuous with no splices or wire gauge change.	✓		
16. Each mirror bracket will be outfitted with a CB radio antenna base.	✓		

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<b>VI. Seats:</b>			
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumber support and arm rest.	✓		
<b>VII. Fuel Tank:</b>			
1. Shall have a 100 gallon aluminum fuel tank.	✓		
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	✓		
3. The tank shall have full encompassing rubber between the tank straps and the tank.	✓		
<b>VIII. Electrical &amp; Lighting System:</b>			
1. All chassis lighting shall be conventional LED lighting.	✓		
2. Shall be a 12-volt system.	✓		
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	✓		
4. Shall have a 160-amp alternator.	✓		
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	✓		
6. All battery cables exiting the battery box shall be routed through rubber grommets.	✓		
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	✓		
8. The chassis electronic control module and the Allison control module shall be located inside the cab and accessible for diagnostics.	✓		
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	✓		
10. Shall be equipped with halogen headlamps.	✓		
11. Supplier splices into the factory wiring harness is unacceptable	✓		

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<b>IX. Engine:</b>			
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.	✓		
2. Shall be equipped with an engine compression brake.	✓		
3. Electronic engine controls shall have the following settings:	✓		
a. Maximum road speed to be governed at 65 mph.	✓		
b. Shall have idle bump up/down feature.	✓		
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.	✓		
5. The engine shall have a zinc plated nickel alloy oil pan.	✓		
<b>X. Air Cleaner:</b>			
1. Shall be a dual element, with fresh air intake	✓		
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.	✓		
<b>XI. Engine Cooling System:</b>			
1. Shall be equipped with a temperature controlled, fan clutch.	✓		
2. Radiator shall be the manufacturers' standard to include a coolant filter.	✓		
3. All coolant hose clamps shall be Constant Torque.	✓		
<b>XII. Engine Exhaust System:</b>			
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 -5 inches behind the cab.	✓		
2. Shall have an under cab mounted horizontal DPF and DOC.	✓		
3. The end of the exhaust pipe shall have a 45 degree tip out, positioned approximately 118	✓		

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inches from the ground to the highest point of the tip out when the truck is empty.			
<b>XIII. Transmission:</b>			
1. Shall be a HD Allison 6 speed.	✓		
<b>XIV. Steering System:</b>			
1. Shall have a dual power steering system.	✓		
2. Steering wheel shall be 18 inches in diameter.	✓		
3. Steering column shall be fully adjustable.	✓		
<b>XV. Axles &amp; Suspension:</b>			
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	✓		
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	✓		
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	✓		
4. Shall be equipped with a rear axle lube pump.	✓		
<b>XVI. Wheels &amp; Tires:</b>			
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.	✓		
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.	✓		
<b>XVII. Brake System:</b>			
1. Shall be a Bendix anti-lock series air braking system.	✓		
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.	✓		
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.	✓		

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4. All brake blocks shall be non-asbestos.	✓		
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake chambers.	✓		
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.	✓		
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.	✓		
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)	✓		
<b>XVIII. Debris Body:</b>			
1. Shall be a minimum of 9 to 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.	✓		
2. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.	✓		
3. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)	✓		
4. Debris body shall be capable of raising a minimum of 50 degrees.	✓		
5. Shall have a splash shield to direct collected waste away from the machine located below the rear door.	✓		
6. The unloading cycle controls shall be located on the curbside of the truck.	✓		
7. The debris body shall have a high pressure flushing system, to clean the inside when unloading.	✓		
8. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying debris and shall have screening to prevent debris from entering the valve. The decanting valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.	✓		

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9. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.	✓	
10. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.	✓	
11. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.	✓	
12. Shall be equipped with a replaceable rear door seal.	✓	
13. The decanting system shall be flushable with the onboard fresh water.	✓	
<b>XIX. Auxiliary Engine (If Required):</b>		
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	N/A	
2. Shall have dual element dry air filter with filter minder.	N/A	
3. The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	N/A	
a. Tachometer	N/A	
b. Hour meter	N/A	
c. High water temperature and low oil pressure shutdown.	N/A	
d. Aux. Engine start/stop ignition switch	N/A	
	N/A	
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	N/A	
f. An additional engine throttle shall be provided at the workstation.	N/A	
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	N/A	
h. Shall have access to the auxiliary engine.	N/A	
i. The exhaust from the aux engine will be directed in such a manner that the exhaust	N/A	

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does not discolor the boom.			
<b>XX. Vacuum System:</b>			
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	✓		
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	✓		
3. Shall be equipped with a cyclonic style separator.	✓		
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>			
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be capable of rotating at least 160 degrees – 90 degrees right hand side and 70 degrees left hand side.	✓		
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	✓		
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	✓		
4. The boom will have a minimum reach of 20 feet from centerline of the chassis.	✓		
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	✓		
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendent with at least 35 feet of cable.	✓		
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	✓		
8. Shall have two boom mounted work lights.	✓		
<b>XXII. Water Tank(s):</b>			
1. Water tanks shall have a metered capacity of 1,000 gallons fresh water.	✓		

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2. Water tanks shall not be an integral part of the debris body. The water tanks shall be located for the lowest possible center of gravity while providing 100% gravity flooded intake(s) to water pump.	✓	
3. Tanks shall be manufactured from non-corrosive material; and shall carry a 10-year warranty against leaking or cracking.	✓	
4. The water tanks shall be easily removed to provide complete access to the truck chassis for maintenance if applicable.	✓	
5. The water tanks shall be adequately vented and connected to equalize water levels while filling	✓	
6. The water tanks shall be properly equipped to allow filling from standard fire hydrants. An anti-siphon device with a 6-inch air gap, 25 ft. of hydrant fill hose, with fittings and storage rack.	✓	
7. Shall have a water level sight gauge, and a low water level warning light located at the operator's station.	✓	
<b>XXIII. High Pressure Water System:</b>		
1. The high-pressure water pump shall be rated for 100gpm @ 2,500psi with continuous 80gpm @ 2,500psi measured at the front hose reel.	✓	
2. Controls for operating the high-pressure water system shall be located at the operator's workstation.	✓	
3. The water pump shall be capable of either operating simultaneously or independently of the vacuum pump.	✓	
4. Shall be equipped with a 3 inch Y-type filter strainer prior to the pump inlet.	✓	
<b>XXIV. High Pressure Jet Hose:</b>		
A one-piece 300 ft. hose shall be provided with the unit. The jet hose shall be 1 1/4 in. ID and have an operating pressure of 2,500 psi with a burst pressure of 6,250 psi.	✓	

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<b>XXV. Hose Reel Assembly:</b>			
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.	✓		
2. Hose reel shall be hydraulically powered in both forward and reverse.	✓		
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.	✓		
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.	✓		
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.	✓		
6. Shall have a manual level winding guide.	✓		
7. Hose reel shall have an emergency hand crank.	✓		
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.	✓		
9. Shall have a footage counter in close proximity to the work station.	✓		
<b>XXVI. Handgun System:</b>			
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.	✓		
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.	✓		
3. The water flow shall be adjustable from a stream, to a fine mist.	✓		
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.	✓		
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.	✓		
6. A handgun shut off valve shall be located at each connection.	✓		

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<b>XXVII. Operating Station Controls:</b>			
1. Operator station controls shall contain:	✓		
a. Truck engine and aux. engine throttle, if required	✓		
b. High-pressure water pump on/off switch.	✓		
c. Hose reel forward-reverse valve.	✓		
d. Adjustable hose reel speed control.	✓		
e. Water pump over pressure warning light.	✓		
f. Oil dampened water pressure gauge.	✓		
g. Tachometer gauges for both truck engine and auxiliary engine (If required)	✓		
h. Boom controls.	✓		
i. Handgun control valve located at the operators workstation.	✓		
<b>XXVIII. Hydraulic System:</b>			
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.	✓		
<b>XXIX. Electrical:</b>			
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.	✓		
2. All lights shall be shock mounted in rubber grommets.	✓		
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.	✓		
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.	✓		
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab	✓		

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controlled switch.			
6. All wiring shall be continuous with no splices.	✓		
<b>XXX. Tool Boxes &amp; Tube Storage:</b>			
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.	✓		
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.	✓		
<b>XXXI. Required Accessories:</b>			
1. The unit shall be delivered with all standard accessories to include the following:	✓		
a. One aluminum storm nozzle with 8 replaceable stainless steel jets.	✓		
b. One finned nozzle extension.	✓		
c. One leader hose 1 ¼ inch x 10'	✓		
d. One 8 inch to 6-inch reducer.	✓		
e. One 8 inch x 3 feet fluidizer tube.	✓		
f. One 6 inch x 7-foot vacuum tube w/steel ends.	✓		
g. One 6-inch tube clamp.	✓		
h. One 8-inch operator safety tube handle.	✓		
i. One 6 inch x 3 feet steel catch basin tube	✓		
j. One 6 inch x 3 feet fluidizer tube.	✓		
k. One 6-inch operator safety tube handle.	✓		
<b>XXXII. Exterior Finish:</b>			
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.	✓		
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	✓		
2. The unit shall be coated with at least 2 mils	✓		

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automotive epoxy primers, with an additional 2 mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).		
3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	✓	
<b>XXXIII. Publications:</b>		
1. Each unit that include \ sub assemblies shall be delivered with an operator's manual. (Aux Engine, Rodder, etc.)	✓	
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each Parts Manual or CD's 2 each Service Manual or CD's	✓	
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	✓	
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	✓	
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	✓	
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	✓	
<b>XXXII. Options:</b>		
1. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	✓	Watson Chalin \$10,450.00
2. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	✓	Watson Chalin \$10,841.00
3. All optional axles shall be cab controlled for	✓	

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deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.		
4. All optional axles shall rise when the transmission is in reverse.	✓	
5. When WSDOT chooses the additional rear mounted tag axle a chute shall be provided to ensure debris does not fall onto the axle or the unit.	✓	\$1,000.00
6. Bidders shall provide a deduct amount for the WSDOT radio installation.	✓	Credit for radio installation: <\$500.00>
7. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	✓	Credit for transmission: <9250.00>
8. An 80 gallon fuel tank for the chassis	✓	Credit for 80 gallon fuel tank: <\$65.00>
9. Provide pricing for alternate Rodder hose reel locations.	✓	B10 in lieu of F10 <\$60,571.00>
10. Wireless controls for Boom and Rodder systems (Radio Controlled).	✓	Belly Pack \$9,999.00 OMNIX \$4,900.00
11. Add 500 gallons of water carrying capability.	✓	\$9610.00 (B10 1500 tank)
12. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	✓	N/C
13. Shall provide a deduct amount for the entire high pressure Rodding Water System.	✓	CB10 in lieu of F10 <\$78,313.00>
14. Shall have a hose reel shield to protect the operator in case of hose failure.	✓	\$1200.00
15. Overweight debris-warning system with a light and audible alarm.	✓	Vulcan Scales: \$13,000.00
16. The ability of the boom to reach 24 feet from the centerline of the chassis.	✓	N/C
17. Shall provide a deduct amount for each set of diagnostic software.	✓	Credit for Allison: <\$1450.00> Credit for Engine: <\$2200.00>
18. Rear mounted hose reel in lieu of a front mounted reel.	✓	B10 in lieu of F10 <\$60,571.00>
19. Provide deduct pricing for each hour of required equipment training.	✓	Training is provided at no cost to client
20. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.	✓	\$75,000.00

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<p>Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel</p>	<p>✓</p>	
<p>In order to continue to the test portion of the bid any unit, each bidder must first meet the written specification without exception</p>	<p>✓</p>	
<p>The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.</p>	<p>✓</p>	
<p>The test will consist of but not limited to the following.</p> <ul style="list-style-type: none"> <li>a. Extract all material from a catch basin(s) selected by WSDOT</li> <li>b. Ability to Decant</li> <li>c. High Pressure Rodding ability</li> <li>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</li> </ul> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>	<p>✓</p>	

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Item 2: Truck; Catch Basin Cleaner, Five Axle

**0818**

**Truck; Catch Basin Cleaner; Five Axle**

Specification Requirements		Describe Offered Alternatives
<b>I. General:</b>		
1. This specification describes Washington State Department of Transportation's requirements for a Catch Basin Cleaner.	✓	
2. Bidders shall include all components (less personal computer) of software and hardware (cabling) needed to perform a complete diagnostics of the major chassis components, (Engine, Transmission) and the Catch Basin Cleaner.	✓	
3. Bidders shall provide a detailed measured drawing of the unit bid, to include all compartment dimensions, and a weight distribution analysis at time of equipment order.	✓	
4. The successful bidder will be required to deliver the completed unit to one of the delivery locations annotated below. g. 6431 Corson Ave Seattle WA 98108 h. 2830 Euclid Ave Wenatchee WA 98807 i. 5720 Capitol Blvd. Tumwater WA 98501 j. 4200 Main St. Vancouver WA 98668 k. 2809 Rudkin Rd. Union Gap WA 98909 l. 221 E North Foothills Dr. Spokane WA 99207	✓ ✓ ✓ ✓ ✓ ✓ ✓	
<b>II. Chassis, Load Capacity and Measurements:</b>		
1. Wheel Base shall be determined by the body manufacturer.	✓	
2. Cab to Axle (CA) shall be determined by the	✓	

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Specification Requirements			Describe Offered Alternatives
body manufacturer.			
3. The unit shall meet all Washington State bridge laws while meeting the GVWR of the unit.	✓		
4. Bumper to Back of Cab (BBC) shall be determined by the body manufacturer.	✓		
<b>III. Frame:</b>			
1. The entire length of the frame rails shall be full depth.	✓		
2. Both frame rails, from front to rear, shall have a section modulus of 30.00 and a RBM of 3,300,000 in. lbs.	✓		
3. The section modulus at the engine cut outs shall be equal to or greater than 18.00 and a RBM of 2,000,000 in. lbs.	✓		
4. The frame rails will be treated with 2 mils of two part epoxy primer and 2 mils of top coat finish paint.	✓		
5. There shall be no holes or bolts in the top flange of the frame rails.	✓		
<b>IV. Cab &amp; Related Equipment:</b>			
1. Shall be a premium cab to include the following. d. Molded header pockets for the driver and passenger. e. Sun visors for both driver and passenger, with an auxiliary sun visor on driver's side. f. Coaxial speakers.	✓		
2. The unit shall be equipped with the following:	✓		
a. Engine voltmeter	✓		
b. Engine oil pressure gauge.	✓		
c. Tachometer	✓		
d. Hour-meter	✓		
e. Engine coolant temperature gauge.	✓		
f. Shall have a heater with a minimum output rating of 30,000 BTU to include both fresh air and cab recirculation features.	✓		
g. Factory installed air conditioning.	✓		

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Specification Requirements			Describe Offered Alternatives
h. Visual and audible low oil pressure and high coolant temperature warning system.	✓		
3. Dual heated and motorized 6 x 16 inch side mounted rearview mirrors. The mirrors shall be equipped with a convex spot mirror.	✓		
4. Shall be equipped with an air horn.	✓		
5. Shall be equipped with cowl mounted, electric, intermittent, windshield wipers.	✓		
6. The interior cab noise level shall meet or exceed FMVSS requirements during normal operating conditions.	✓		
7. Shall be equipped with both interior and exterior, egress / ingress assist handles. on the driver's side and interior grab handles on the passenger side	✓		
8. Shall be equipped with an AM/FM Radio with weather band.	✓		
9. Shall have a steel front bumper.	✓		
<b>V. Radio Installation:</b>			
1. The cab shall be outfitted with a header pocket to accommodate the WSDOT radio. The measurements of the radio are as follows:	✓		
a. Width 7 3/16 inches.	✓		
b. Length 8 5/16 inches.	✓		
c. Thickness 2 1/8 inches.	✓		
2. The radio shall be located in a manner that allows the operator to read the LCD without detracting from road visibility. The radio shall be accessible by the operator and be within arm's reach of an average person.	✓		
3. When installed; the face of the radio shall not extend further than one inch out of the pocket.	✓		
4. WSDOT will loan a radio to the successful bidder, as a production aid.	✓		
5. Within the radio pocket, there shall be a radio-mounting bracket, which will accept the state-provided radio. The radio shall have the ability to be removed and re-installed without removing the header panel.	✓		

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Specification Requirements			Describe Offered Alternatives
6. To the left of the radio pocket and as close as possible to the radio, a grounded microphone-mounting clip shall be installed.		√	
7. On the exterior of the cab roof, there shall be a Larson NMO-K-DS-FME antenna base. The specific mounting location shall provide the antenna with at least 18 inches of clear area around the antenna base and at the tip of the antenna.		√	
8. The roof mount antenna base shall be sealed and capped with a protective cover for shipping.		√	
9. The antenna cable shall extend to the center radio pocket, and extend at least six inches outside of the radio pocket.		√	
10. Above the rear window and centered in the cab, shall be a factory installed and functional two-way radio speaker for the EF J radio.		√	
11. Shall have a dedicated and labeled 15-amp constant duty (fused) power circuit for the EFJ Radio.		√	
12. Connected to the 15amp EFJ circuit shall be a power wire with the same connectors, gauge, and length of the EFJ Part# 023-9750-010 with no splices. This wire shall extend up to a header pocket and extend at least twelve inches outside of the pocket.		√	
13. Shall have a sensing circuit for the EFJ radio. The circuit shall be a fused 3 amp switched through the ignition switch, and active in the run or accessory positions.		√	
14. Connected to the 3 amp EFJ circuit shall be a sense wire, with the same connectors, gauge, and length of the EFJ Part # 023-9750-011. This wire shall extend up to a header pocket, and extend at least six inches outside of the pocket		√	
15. All wiring associated with the EF Johnson radio will be continuous with no splices or wire gauge change.		√	
16. Each mirror bracket will be outfitted with a CB radio antenna base.		√	

Specification Requirements		Describe Offered Alternatives
<b>VI. Seats:</b>		
Both Driver's and passenger seat shall be a vinyl covered high back air ride seats with lumbar support and arm rest.	✓	
<b>VII. Fuel Tank:</b>		
1. Shall have a 100-gallon aluminum fuel tank.	✓	
2. The tank shall be equipped with the required amount of entry steps as required by FMVSS.	✓	
3. The tank shall have full encompassing rubber between the tank straps and the tank.	✓	
<b>VIII. Electrical &amp; Lighting System:</b>		
1. All chassis lighting shall be conventional LED lighting.	✓	
2. Shall be a 12-volt system.	✓	
3. Batteries shall have at least 2,200 cold cranking amps (CCA) and be maintenance-free.	✓	
4. Shall have a 160-amp alternator.	✓	
5. The batteries shall be equipped with an additional ground cable, which will be attached to the frame rail. All cable ends shall be sealed, and equipped with rubber retainers and covers.	✓	
6. All battery cables exiting the battery box shall be routed through rubber grommets.	✓	
7. Shall have an additional OEM in dash 6 position switch panel powered by the ignition switch in both run and accessory positions. All switches shall be on/off and configured as follows: All 6 switches shall be on the same row.	✓	
8. The chassis electronic control module and the Allison control module shall be located inside the cab.	✓	
9. Bidder must ensure that the switches on all equipment associated with this purchase, are wired uniformly.	✓	
10. Shall be equipped with halogen headlamps.	✓	
11. Supplier splices into the factory wiring harness is unacceptable	✓	

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Specification Requirements			Describe Offered Alternatives
<b>IX. Engine:</b>			
1. Shall have at least 425 gross hp delivering 1550 ft lbs torque.		✓	
2. Shall be equipped with an engine compression brake.		✓	
3. Electronic engine controls shall have the following settings:		✓	
a. Maximum road speed to be governed at 65 mph.		✓	
b. Shall have idle bump up/down feature.		✓	
4. Shall be equipped with the manufacturers' standard 110 volt block heater, with the plug-in receptacle located on the left side under the driver's door.		✓	
5. The engine shall have a zinc plated nickel alloy oil pan.		✓	
<b>X. Air Cleaner:</b>			
1. Shall be a dual element, with fresh air intake		✓	
2. A filter minder restriction indicator shall be mounted in the cab; and it must indicate restriction for both elements.		✓	
<b>XI. Engine Cooling System:</b>			
1. Shall be equipped with a temperature controlled, fan clutch.		✓	
2. Radiator shall be the manufacturers standard to include a coolant filter.		✓	
3. All coolant hose clamps shall be Constant Torque.		✓	
<b>XII. Engine Exhaust System:</b>			
1. Shall be a single horizontal muffler and vertical pipe. The vertical pipe shall not protrude more than 3 - 5 inches behind the cab.		✓	
2. Shall have an under cab mounted horizontal DPF and DOC.		✓	
3. The end of the exhaust pipe shall have a 45		✓	

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Specification Requirements		Describe Offered Alternatives
degree tip out, positioned approximately 118 inches from the ground to the highest point of the tip out when the truck is empty.		
<b>XIII. Transmission:</b>		
1. Shall be a HD Allison 6 speed.	✓	
<b>XIV. Steering System:</b>		
1. Shall have a dual power steering system.	✓	
2. Steering wheel shall be 18 inches in diameter.	✓	
3. Steering column shall be fully adjustable.	✓	
<b>XV. Axles &amp; Suspension:</b>		
1. <i>Front Axle</i> shall be 20,000 lbs. with oil filled hub, with sight glass and double acting shock absorbers.	✓	
2. <i>Rear Axle</i> shall have a 46,000 lbs. MFGR rating with the Hendrickson HN suspension, rubber bushings, and a gear ratio to allow 65 MPH.	✓	
3. The rear axle shall be equipped with an air activated power divider lock with indicator light.	✓	
4. Pusher Axle with a 13,500# rating will be located in front of the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	✓	
5. Tag Axle with a 13,500# rating and will be located behind the drive axles. Hendrickson Model Para lift Ultra Light or equal. The tires shall be 255/70R 22.5 mounted on 8.25x22.5" hub piloted wheels. Fender to be included.	✓	
6. The pusher and tag axles shall be cab controlled for deployment only. All adjustment controls will be located outside, directly behind the cab on the street side.	✓	
7. All optional axles shall raise when the transmission is in reverse	✓	
8. Shall have an appropriately sized air compressor to operate the chassis braking system as well as the additional axles.	✓	

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Specification Requirements			Describe Offered Alternatives
9. A chute shall be provided to ensure debris does not fall onto the tag axle.		✓	
10. Shall be equipped with a rear axle lube pump.		✓	
<b>XVI. Wheels &amp; Tires:</b>			
1. <i>Front wheels</i> shall be Hub Pilot steel wheels with 425/65R 22.5 LRJ steel belted radial tires.		✓	
2. <i>Rear wheels</i> shall be Hub Pilot steel wheels with 11R 22.5 LRJ steel belted radial tires.		✓	
<b>XVII. Brake System:</b>			
1. Shall be a Bendix anti-lock series air braking system.		✓	
2. Shall have self-adjusting "S" cam air brakes front and rear, with shields installed.		✓	
3. Shall have outboard mounted brake drums, and the size of the drums will accommodate the manufacturers GVWR of the chassis. WSDOT will accept power disc brakes if offered.		✓	
4. All brake blocks shall be non-asbestos.		✓	
5. In the event the chassis supplier is providing drum brakes. The chassis shall be equipped with 30 sq. in. MGM TR-T series rear brake chambers.		✓	
6. Shall have the manufacturers standard air compressor, with the intake plumbed to the filtered side of the air cleaner.		✓	
7. The air dryer, shall be mounted in a serviceable location and the filter will be a spin on style.		✓	
8. Shall be equipped with a lanyard style air drain located in an accessible location. If applicable, located near the driver's door (Under chassis configuration is unacceptable)		✓	
<b>XVIII. Debris Body:</b>			
1. Shall be a minimum of 10 cu. yd; and constructed of the manufacturers standard corrosion and abrasion resistant steel.		✓	
2. The body shall have a top hinged, full width		✓	

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Specification Requirements			Describe Offered Alternatives
rear door.			
3. The body shall have a top hinged, full width rear door. The rear door shall be opened and closed hydraulically.		√	
4. The rear door shall be locked and unlocked with the manufacturer's standard locking mechanism. (Manual Locks are unacceptable)		√	
5. Debris body shall be capable of raising a minimum of 50 degrees.		√	
6. Shall have a splash shield to direct collected waste away from the machine and the tag axle located below the rear door.		√	
7. The unloading cycle controls shall be located on the curbside of the truck.		√	
8. The debris body shall have a high pressure flushing system, to clean the inside when unloading.		√	
9. There shall be a 6-inch diameter decanting butterfly valve located on the debris body door. The valve shall be installed at a location to allow for the maximum decanting of material. The decant valve shall be protected from flying debris and shall have screening to prevent debris from entering the valve. The decanting valve lever shall open and close by a vertical pull. A horizontal pull is not acceptable.		√	
10. If required, there shall be a 6 inch diameter standpipe attached to the inside of the decant valve. The standpipe shall be installed in such a manner to allow maximum water to be decanted.		√	
11. There shall be 25 feet of lay flat decanting hose, to include hose storage rack.		√	
12. The decanting system shall be constructed in such a manner, as to allow water drain off, without draining debris.		√	
13. Shall be equipped with a replaceable rear door seal.		√	
14. The decanting system shall be flushable with the onboard fresh water.		√	

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Specification Requirements			Describe Offered Alternatives
<b>XIX. Auxiliary Engine (If Required):</b>			
1. Shall have an auxiliary diesel engine appropriately sized to operate all of the auxiliary engine powered components.	✓		
2. Shall have dual element dry air filter with filter minder.	✓		
The Auxiliary engine control panel shall be located in such a manner to allow the operator to utilize the controls from various operating positions, and shall include the following.	✓		
a. Tachometer.	✓		
b. Hour meter.	✓		
c. High water temperature and low oil pressure shutdown.	✓		
d. Aux. Engine start/stop ignition switch	✓		
e. A manually adjustable auxiliary engine throttle to include idle, mid, and full range.	✓		
f. An additional engine throttle shall be provided at the workstation.	✓		
g. Noise level at the auxiliary engine control panel, shall not exceed 85 db (A) with the engine at normal operating RPM.	✓		
h. Shall have access to the auxiliary engine.	✓		
i. The exhaust from the aux engine will be directed in such a manner that the exhaust does not discolor the boom.	✓		
<b>XX. Vacuum System:</b>			
1. The manufacturer's standard vacuum system shall be provided to meet the performance criteria of 0 - 8000 CFM and 0 - 200 inches of negative water pressure.	✓		
2. Noise level at the operators workstation, shall be 85 dB (A) or less.	✓		
3. Shall be equipped with a cyclonic style separator.	✓		
<b>XXI. Hydraulic Boom &amp; Vacuum Hose:</b>			
1. Shall have an 8 inch diameter suction hose, mounted on a telescopic boom. Boom shall be	✓		

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Specification Requirements		Describe Offered Alternatives
capable of rotating at least 180 degrees – 90 degrees right hand side and 90 degrees left hand side.		
2. At any location where the boom has an elbow, there shall be a Hard Ox or equal, material welded to the inside of the boom to protect the interior portion from abrasion.	✓	
3. Shall have a lift capacity of at least 500 lbs at the front bumper.	✓	
4. The boom will have a minimum reach of 23 feet from centerline of the chassis.	✓	
5. The boom shall have hydraulic up/down, in/out and left/right capability. The boom shall have adjustable or variable speed controls.	✓	
6. Power boom controls shall be located at the operator's station. The workstation shall include a weatherproof remote control pendent with at least 35 feet of cable.	✓	
7. The suction hose and boom shall have a travel lock to prevent movement during transit.	✓	
8. Shall have two boom mounted work lights.	✓	
<b>XXII. Water Tank(s):</b>		
1. Water tanks shall have a metered capacity of 1,000 gallons fresh water.	✓	
2. Water tanks shall not be an integral part of the debris body. The water tanks shall be located for the lowest possible center of gravity while providing 100% gravity flooded intake(s) to water pump.	✓	
3. Tanks shall be manufactured from non-corrosive material; and shall carry a 10-year warranty against leaking or cracking.	✓	
4. The water tanks shall be easily removed to provide complete access to the truck chassis for maintenance if applicable.	✓	
5. The water tanks shall be adequately vented and connected to equalize water levels while filling.	✓	
6. The water tanks shall be properly equipped to allow filling from standard fire hydrants. An anti-siphon device with a 6-inch air gap, 25 ft. of hydrant fill hose, with fittings and storage rack.	✓	

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Specification Requirements			Describe Offered Alternatives
7. Shall have a water level sight gauge, and a low water level warning light located at the operator's station.		√	
<b>XXIII. High Pressure Water System:</b>			
1. The high-pressure water pump shall be rated for 100gpm @ 2,500psi with continuous 80gpm @ 2,500psi. measured at the front hose reel.		√	
2. Controls for operating the high-pressure water system shall be located at the operator's workstation.		√	
3. Shall have a multi-flow water pump capable of operating simultaneously or independently of the vacuum pump.		√	
4. Shall be equipped with a 3 inch Y-type filter strainer prior to the pump inlet.		√	
5. Water pump location shall provide a constantly flooded gravity suction inlet due to the pump being mounted below 100% of the water supply.		√	
6. Water pump shall have forward pulsation with no flow or pressure drop as described above.		√	
<b>XXIV. High Pressure Jet Hose:</b>			
A one-piece 300 ft. hose shall be provided with the unit. The jet hose shall be 1 1/4 in. ID and have an operating pressure of 2,500 psi with a burst pressure of 6,250 psi.		√	
<b>XXV. Hose Reel Assembly:</b>			
1. Shall have a self supporting hose reel assembly, capable of storing 300 feet of 1 1/4 inch hose. The hose reel shall be mounted on the front of the truck chassis.		√	
2. Hose reel shall be hydraulically powered in both forward and reverse.		√	
3. Controls for the hose reel shall be located on the control panel. They shall include a hose reel speed control and a hose reel directional control.		√	

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Specification Requirements			Describe Offered Alternatives
4. The hose reel shall be capable of allowing the hood of the chassis to open and close without hindrance from the hose reel.		✓	
5. The hose reel shall rotate a minimum of 180 degrees from the center of chassis and lock in any position.		✓	
6. Shall have a manual level winding guide.		✓	
7. Hose reel shall have an emergency hand crank.		✓	
8. The hose reel shall be equipped with a tension mechanism to supply tension to the hose while re-winding onto the reel.		✓	
9. Shall have a footage counter in close proximity to the work station.		✓	
<b>XXVI. Handgun System:</b>			
1. Shall have a handgun system with at least 10 GPM at approximately 600 psi.		✓	
2. Shall have a 1-foot extension, replaceable tip and a dead man trigger.		✓	
3. The water flow shall be adjustable from a stream, to a fine mist.		✓	
4. Shall have 25 feet of 1/2-inch high-pressure hose with quick disconnect ends. Bursting pressure to be 1600 psi and mounted on a retractable hose reel.		✓	
5. Shall have handgun connection points located on each side of the front bumper and at the curbside rear of the vehicle.		✓	
6. A handgun shut off valve shall be located at each connection.		✓	
<b>XXVII. Operating Station Controls:</b>			
1. Operator station controls shall contain:		✓	
a. Truck engine and aux. engine throttle, if required		✓	
b. High-pressure water pump on/off switch.		✓	
c. Hose reel forward-reverse valve.		✓	
d. Adjustable hose reel speed control.		✓	
e. Water pump over pressure warning light.		✓	

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Specification Requirements			Describe Offered Alternatives
f. Oil dampened water pressure gauge.		✓	
g. Tachometer gauges for both truck engine and auxiliary engine (if required)		✓	
h. Boom controls.		✓	
i. Handgun control valve located at the operators workstation.		✓	
<b>XXVIII. Hydraulic System:</b>			
The hydraulic system filters shall be replaceable without the loss of hydraulic fluid.		✓	
<b>XXIX. Electrical:</b>			
1. All electrical connections shall have no exposed wires or terminals. All wiring to be NEMA 4 compliant. Weather pack connectors will be used on all non-chassis related electrical connections.		✓	
2. All lights shall be shock mounted in rubber grommets.		✓	
3. All wiring shall be placed in wire loom, color-coded and number coded every 6 inches and run to sealed terminal boxes.		✓	
4. Shall have two (2) electrical plugs (one front, one rear of unit) to accommodate a hand held spotlight. A hand held work light with one million candle power and a 25 ft. retractable cord.		✓	
5. Complete unit shall have all lights and reflectors required by FMVSS 108. The front and rear of the debris body shall have provisions for two (2) strobe lights; with a cab controlled switch.		✓	
6. All wiring shall be continuous with no splices.		✓	
<b>XXX. Tool Boxes &amp; Tube Storage:</b>			
1. The unit shall have a minimum 20 cu ft of toolboxes. All toolboxes shall have weather tight doors, twist lock latches, and keyed alike.		✓	
2. Unit shall have a tube storage rack for 40 feet of vacuum tube mounted on the debris body. The hose storage rack shall have the ability to fold downward to within 4 to 5 feet of the ground.		✓	

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Specification Requirements		Describe Offered Alternatives
<b>XXXI. Required Accessories:</b>		
1. The unit shall be delivered with all standard accessories to include the following:	✓	
a. One aluminum storm nozzle with 8 replaceable stainless steel jets.	✓	
b. One finned nozzle extension.	✓	
c. One leader hose 1 ¼ inch x 10'	✓	
d. One 8 inch to 6-inch reducer.	✓	
e. One 8 inch x 3 feet fluidizer tube.	✓	
f. One 6 inch x 7-foot vacuum tube w/steel ends.	✓	
g. One 6-inch tube clamp.	✓	
h. One 8-inch operator safety tube handle.	✓	
i. One 6 inch x 3 feet steel catch basin tube	✓	
j. One 6 inch x 3 feet fluidizer tube.	✓	
k. One 6-inch operator safety tube handle.	✓	
<b>XXXII. Exterior Finish:</b>		
WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.	✓	
1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.	✓	
2. The unit shall be coated with at least 2 mils automotive epoxy primers, with an additional 2 mils of finish paint. The unit shall be National Safety Yellow (Sikkens 4039/Dupont 7044).	✓	
3. The body paint shall be warranted against peeling, flaking, and fading for five years. Paint overspray on wiring and hoses is not acceptable.	✓	
<b>XXXIII. Publications:</b>		
1. Each unit that include \ sub assemblies shall be	✓	

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Specification Requirements		Describe Offered Alternatives
delivered with an operator's manual. (Aux Engine, Rodder, etc.)		
2. Bidders shall provide the Service, and Parts Manuals for the body and chassis, and associated subassemblies as annotated below. 2 each - Parts Manual or CD's 2 each - Service Manual or CD's	✓	
3. Shall provide a complete set of wiring schematics for the Catch Basin Cleaner.	✓	
4. Supplier shall provide an axle load, stability and weight distribution analysis for the specified carrier vehicle	✓	
5. Shall have a laminated lube chart mounted in the chassis cab showing all the operators lubing requirements to meet a before, during, and after operation check. (Operators Maintenance)	✓	
6. Shall provide a Cad drawing of this specified unit. The drawing will show all electrical, hydraulic, and mechanical components, as they will be installed on the chassis.	✓	
<b>XXXIV. Options:</b>		
1. An 80 gallon fuel tank for the chassis.	✓	Credit for 80 gallon fuel tank: <\$65.00>
2. Vendor shall provide pricing for alternate hose reel locations.	✓	B10 in lieu of F10 <\$60,571.00>
3. Wireless controls for Boom and Rodder systems (Radio Controlled).	✓	Belly Pack \$10,000 OMNIX \$4,900.00
4. Add 500 gallons of water carrying capability.	✓	\$9610.00 (B10 1500 tank)
5. 300 feet of 1-inch high-pressure hose in lieu of the 1 ¼ inch hose.	✓	N/C
6. Shall provide a deduct amount for the entire high pressure Rodding Water System.	✓	CB10 in lieu of F10 <\$78,313.00>
7. Shall have a hose reel shield to protect the operator in case of hose failure.	✓	\$1200.00
8. Overweight debris-warning system with a light and audible alarm.	✓	Vulcan Scales: \$13,000.00
9. Bidders shall provide a deduct amount for the WSDOT radio installation	✓	Credit for radio installation: <\$500.00>
10. Provide pricing for alternate rodder hose reel locations.	✓	B10 in lieu of F10 <\$60,571.00>

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Specification Requirements		Describe Offered Alternatives
11. Provide a deduct amount for each set of diagnostic software.	✓	Credit for Allison: <\$1450.00> Credit for engine: <\$2200.00>
12. Provide deduct pricing for each hour of required equipment training.	✓	Training is provided at no cost to clients
13. Fuller 18 Speed manual transmission, with an Easy Pedal Plus clutch and a two-piece clutch brake.	✓	Credit for transmission: <\$9250.00>
14. Option for suck on the go capability to include a fully functional boom and water flow to the hand gun. The unit shall have the specified vacuum capability during this style of operation.	✓	\$75,000.00
<b>XXXV. Performance Test</b>		
Each supplier choosing to bid will be required to demonstrate and be tested on the operational capabilities of their respective unit to a team of WSDOT personnel	✓	
In order to continue to the test portion of the bid any unit, each bidder must first meet the written specification without exception	✓	
The test will take place at a WSDOT location in the Seattle Area. The specific location will be published by WSDOT when the successful bidders are identified.	✓	
<p>The test will consist of but not limited to the following.</p> <p>a. Extract all material from a catch basin(s) selected by WSDOT</p> <p>b. Ability to Decant</p> <p>c. High Pressure Rodding ability</p> <p>d. Weight distribution in a fully loaded condition. (Quantity of material in pounds, the unit can carry while meeting the Washington State vehicle weight regulations)</p> <p>Allow WSDOT personnel to operate the Catch Basin Cleaner in all modes of operation.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	

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