State of Rhode Island

Department of Administration
Division of Purchases
One Capitol Hill
Providence, RI 02908

REQUEST FOR PROPOSAL (RFP) – BID# 7548460

TEN WHEEL TANDOM AXLE DUMP TRUCKS

SUBMISSION DEADLINE: Monday, March 03, 2014 at 2:30 PM (ET)

PRE-BID CONFERENCE: ☐ NO
☒ YES **Tuesday, February 18, 2014 at 10:00 AM (ET)**

Mandatory: ☐ NO
☒ **YES:** Any vendor who intends to submit a bid proposal in response to this solicitation must have its designated representative attend the mandatory pre-bid conference. The representative must register at the pre-bid conference and disclose the identity of the vendor whom he/she represents. Because attendance at the pre-bid conference is mandatory, a vendor's failure to attend and register at the pre-bid conference shall result in disqualification of the vendor's bid proposal as non-responsive to the solicitation.

Location: **RI DEPARTMENT OF TRANSPORTATION-MAINTENANCE HEADQUARTERS**
360 LINCOLN AVENUE (2ND FLOOR)
WARWICK, RI

Buyer Name: **LISA HILL**
Title: **CHIEF BUYER**

QUESTIONS concerning this solicitation must be received by the Division of Purchases at (lisa.hill@purchasing.ri.gov) no later than (Thursday, February 20, 2014, 2:00 PM (ET)). Questions should be submitted in a *Microsoft Word attachment*. Please reference the bid number (Bid #7548460) on all correspondence. Questions received, if any, will be posted on the Rhode Island Division of Purchases website as an addendum to this solicitation. It is the responsibility of all interested parties to download this information.

SURETY REQUIRED: **NO**

BOND REQUIRED: **NO**

DISK BASED BID: **NO**

NOTE TO VENDORS:
Vendors must register on-line at the Rhode Island Division of Purchases website at www.purchasing.ri.gov. Offers received without the completed four-page Rhode Island Vendor Information Program (RIVIP) Generated Bidder Certification Cover Form attached may result in disqualification.

THIS IS NOT A BIDDER CERTIFICATION FORM

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SECTION 1: INTRODUCTION

The Rhode Island Department of Administration/Division of Purchases, on behalf of the Rhode Island Department of Transportation (TRANSPORTATION), is soliciting proposals from qualified firms for the purchase of **Five (5) Ten-Wheel Dump Trucks** as described elsewhere herein, in accordance with the terms of this Request for Proposals and the State's General Conditions of Purchase, which may be obtained at the Rhode Island Division of Purchases Home Page by Internet at **www.purchasing.ri.gov**. The successful offerer must be an Authorized Manufacturer or Authorized Manufacturer Representative located within a one hundred (100) mile radius of the Department of Transportation "DOT" Highway & Bridge Maintenance Facility, 360 Lincoln Avenue, Warwick, RI 02888.

The Authorized Manufacturer or Authorized Manufacturer Representative will be responsible for the maintenance of the entire vehicle and all optional equipment.

No alternatives to the specifications will be accepted. All proposals must meet or exceed specifications. Only one (1) set of specifications will be accepted per offerer. Specifications must be submitted in triplicate (3 complete sets).

Delivery must be completed within one hundred eighty (180) days of the successful proposal.

This is a Request for Proposals, not an Invitation for Proposal. Responses will be evaluated on the basis of the relative merits of the proposal, in addition to price; there will be no public opening and reading of responses received by the Division of Purchases pursuant to this Request, other than to name those offerors who have submitted proposals.

INSTRUCTIONS AND NOTIFICATIONS TO OFFERORS:

1. Potential vendors are advised to review all sections of this RFP carefully and to follow instructions completely, as failure to make a complete submission as described elsewhere herein may result in rejection of the proposal.

2. Alternative approaches and/or methodologies to accomplish the desired or intended results of this procurement are solicited. However, proposals which depart from or materially alter the terms, requirements, or scope of work defined by this RFP will be rejected as being non-responsive.

3. All costs associated with developing or submitting a proposal in response to this RFP, or to provide oral or written clarification of its content shall be borne by the vendor. The State assumes no responsibility for these costs.

4. Proposals are considered to be irrevocable for a period of not less than **60 d**ays following the opening date, and may not be withdrawn, except with the express written permission of the State Purchasing Agent.

5. All pricing submitted will be considered to be firm and fixed unless otherwise indicated herein.

6. Proposals misdirected to other state locations, or which are otherwise not present in the Division at the time of opening for any cause will be determined to be late and will not be considered. For the purposes of this requirement, the official time and date shall be that of the time clock in the reception area of the Division.

7. It is intended that an award pursuant to this RFP will be made to a prime vendor, who will assume responsibility for all aspects of the work. Joint venture and cooperative proposals will not be considered. Subcontracts are permitted, provided that their use is clearly indicated in the vendor's proposal and the subcontractor(s) to be used is identified in the proposal.

8. All proposals should include the vendor's FEIN or Social Security number as evidenced by a W9, downloadable from the Division's website at www.purchasing.ri.gov.

9. The purchase of goods/services under an award made pursuant to this RFP will be contingent on the availability of funds.

10. Vendors are advised that all materials submitted to the State for consideration in response to this RFP will be considered to be Public Records as defined in Title 38, Chapter 2 of the General Laws of Rhode Island, without exception, and will be released for inspection immediately upon request once an award has been made.

11. Interested parties are instructed to peruse the Division of Purchases website on a regular basis, as additional information relating to this solicitation may be released in the form of an addendum to this RFP.

12. Equal Employment Opportunity (G.L. 1956 § 28-5.1-1, et seq.) – § 28-5.1-1 Declaration of policy – (a) Equal opportunity and affirmative action toward its achievement is the policy of all units of Rhode Island state government, including all public and quasi-public agencies, commissions, boards and authorities, and in the classified, unclassified, and non-classified services of state employment. This policy applies to all areas where State dollars are spent, in employment, public services, grants and financial assistance, and in state licensing and regulation. For further information, contact the Rhode Island Equal Opportunity Office at (401) 222-3090.

13. In accordance with Title 7, Chapter 1.2 of the General Laws of Rhode Island, no foreign corporation, a corporation without a Rhode Island business address, shall have the right to transact business in the State until it shall have procured a Certificate of Authority to do so from the Rhode Island Secretary of State (401-222-3040). This is a requirement only of the successful vendor(s).

SECTION 2: BACKGROUND

The Rhode Island Department of Transportation is seeking to contract with a vendor with demonstrated proficiency in Ten-Wheel Dump Trucks.

The Department expects to contract for a minimum of five (5) units. The vendor cost proposal will represent one total cost, not itemized.

Although cost is a significant consideration, warranty/warranty resolution; availability of parts; delivery schedule/significant milestones and overall quality of the work plan; and experience, capability, capacity, and qualifications of the offeror are also critical to the procurement of the ten-wheel dump trucks.

SECTION 3: SCOPE OF WORK (SPECIFICATIONS)

General Scope of Work

The following specifications and dimensions shall apply to purchases of HEAVY DUTY TANDEM DUMP TRUCK (10-WHEELER) for the Rhode Island Department of Transportation. The State reserves the right to waive minor technicalities under this specification. Federal and State laws supersede any conflicting part of this specification.

RIDOT desires to purchase five (5) units through this RFP, subject to availability of funds.

The unit shall be a current model, new and unused, under standard production by the manufacturer, and of which parts are stocked at one or more locations in Rhode Island and/or Southern New England region. All parts utilized on the unit shall be new and unused.

The bidder agrees, if his proposal is accepted, to guarantee the design, material and workmanship of the unit bid according to the standard factory warranty, or detailed in the following specification, whichever is greater. A copy of the warranty shall accompany the bid. Warranty coverage shall include costs of transporting the unit to and from servicing shop, when outside a 50 mile radius of the delivery point. The bidder shall be responsible for pickup and delivery (including fuel) of any units that are found to have defects within the first three (3) weeks of delivery to RIDOT and have to return to dealer for repairs.

Complete specifications and literature on the unit bid shall accompany the bid. Any exceptions to these specifications shall be indicated on the bid or on a separate attachment to the bid, labeled as such.

Any "or equal" or "equivalent" items for brand specified components shall be listed with the bid package. Complete description and literature on the "or equal" components shall be supplied for consideration by the RIDOT. The burden of proof regarding "or equal" items will be upon the vendor.

GENERAL: This specification is intended to allow competitive bids on the following trucks or approved equal: International Workstar, Freightliner 114SD, Peterbilt 348, and Mack Granite.

PRIMARY PURPOSE: Units are utilized primarily for Winter Operations and must be suitable to be outfitted with Dump Body, V- Sander, saddle tanks, front plow, wing plow.

MANDATORY PRE-BID CONFERENCE Date to be determined

PRE-DELIVERY SERVICE: The unit shall be delivered complete and fully operational. It shall be properly serviced, free of leaks, with all mechanical adjustments made prior to delivery. A copy of the line set ticket shall accompany the vehicles. A minimum of three days notice prior to delivery shall be given to the person to whom the unit is to be shipped. Upon award of the bid the successful bidder shall supply a completed RIDOT "Equipment Information" sheet listing all the pertinent details that are specific to the units being purchased. Failure to do so will result in 2% retention of the total order.

All units must be inspected prior to delivery with a focus on functionality, consistency, and quality assurance. **The body installation company must develop an inspection check sheet that is detailed and includes all major components of each dump truck.** Each inspection item must be initialed and a copy of the inspection sheet shall be placed in the document holder of the truck prior to delivery. The inspection check sheet shall be developed and presented at the body company prototype meeting for review and input from RIDOT. The inspection check sheet shall be developed and presented at the final prototype meeting for review and input from RIDOT.

All units must be inspected prior to delivery with a focus on functionality, consistency, and quality assurance just before final delivery. **The bidder must develop an inspection check sheet that is detailed and includes all required pre delivery inspection and service items required by the chassis supplier.** This inspection check list should also include checking items that may have loosened or have been missed by the body company such as hydraulic leaks and body components shaking loose. Each inspection item must be initialed and a copy of the inspection sheet shall be placed in the document holder of the truck prior to delivery.

TRUCK DELIVERY SCHEDULE

All bidders shall provide as part of their bid a schedule for the delivery of all trucks to RIDOT. This date shall be listed as the number of days following issuance of a Notice to Proceed, that the bidder shall successfully deliver all units to the Rhode Island Department of Transportation. Failure to submit a schedule will result in the bid being considered non-responsive. Failure to meet the schedule will result in 3% retention on the total order.

All trucks ordered shall be delivered to RIDOT, ready for immediate use, no later than October 1, 2014 without exception.

2014 MODEL YEAR CAB & CHASSIS 10-WHEEL TRUCK

A. Dimensions/G.V.W
GVW rating – 77,000 pounds minimum
GCW rating – 80,000 pounds minimum
Wheelbase – 230" minimum
CA – 145", must be verified with the body installer
Platform – 207" LP, 62"AF, verify with bodybuilder

B. Frames
Double rail, full inside channel, RBM- 3,580,000 inch-pounds per rail
Frame rails treated w/ Tectyl 185GW Pigmented 2.8 VOC for rust resistance
20" ft frame extension, continuation of parent rail (not bolted)
Clear outside frame rail RH side back of cab for wing plow installation
I-beam crossmembers
Swept back steel bumper
Front tow hooks
Two rear tow hooks
All fuel tanks, air tanks, air drier, etc. shall be located either under the cab or on the inside of the frame rails. It is the responsibility of the vendor to coordinate with the body company to ensure that all equipment mounted on the frame rails (battery box, air tanks, hydraulic tank, tool box, shovel box, etc.)will fit in such a matter as to be functional, serviceable, and give adequate clearance for body/chassis movement and wheel travel in all normal conditions.

C. Engine Diesel/Engine Equipment
Minimum 360 HP at 1500-1900 RPM, 1340 lb ft torque
Engine to utilize current SCR emission technology
Inside/outside air intake w/in-cab controls
Alternator – Delco 12V 160 amp
Batteries – (3) 12V 1000/3000 CCA
Engine block heater 120 volt/1500 watt includes block heater socket receptacle
Air compressor, 18.7 cfm
Bug screen, radiator mounted
Engine hoses and tubing, silicone
DPF and SCR mounted RH side under cab
Exhaust after-treatment system, diesel particulate filter ceramic passive regulator
Fuel-Water Separator – Davco 382 with fluid heat and 120 volt heater wired with engine block heater
Oil pan – corrosion resistant
Engine compression brake with selector switch
Exhaust, clear BOC, single RH vertical stack, cab mounted, turned end

D. Transmission and Equipment/Drivelines
Allison 4500RDS 6 six-speed automatic with PTO gear, level oil sensor,
Synthetic lube

Driveline – Main, Meritor 18 MXL "XTENDED LUBE"
Driveline – Interaxle, Meritor 17 MXL "XTENDED LUBE"

E. Axles
Front axle – I-Beam type 20,000 pound capacity
Steering – Sheppard SD110 + HD94
Rear axle- 58,000 pound capacity
Automatic power divider

F. Suspension
Front, multi-leaf, shackle type, 20,000 pound capacity
Front RH spring build-up for wing plow to level chassis
Rear, 58,000 pound multi-leaf, to articulate w/bronze center bushing

G. Brakes
Front-S-cam 16.5" x 6" Q+
Rear-S-cam 18"x 7"
Brake system shall include:
- Air dryer
- Brake chambers, type 30/30 rear
- Dust shields front and rear
- Brake lines color-coded nylon
- Slack adjusters automatic front and rear
- Anti-lock brake system w/traction control, includes dash mounted mud/snow switch
- Full trailer connections including air lines and seven wire cable and plug routed to rear of chassis
- Hand control valve for trailer brakes
- All rear brake chamber clevis pins shall be lubricated with an anti-seize lubricant
- All rear brake shoe anchor pins shall be grease-able with grease fittings

H. Tires
Front (2) 315/80R22.5 Goodyear G287
Rear (8) 12R24.5 Goodyear G177
One front and two rear spare tires and rims matching above
Front and rear - Wheels shall be powder coated white.

I. Wheels
The unit shall be equipped with 10 bolt disc-type wheels and 315/80R22.5 tubeless type low profile steel belted radial truck tires front and 12R24.5 tandem dual rear.
Front tires shall be load range L and rear shall be load range H, minimum and be rated for 65 mph.
Front tires shall be mounted on 9.0" drop center rims and rear mounted on 8.25" drop center rims. All wheels must be equipped with the same type rim. Rims shall be hub-piloted, 5 hand hole design.
Rear tires shall have a G177 tread.

J. Electrical System
Twelve-volt negative ground electrical system consisting of the following components:
- Wiring schematic shall be supplied illustrating the wiring system
- Battery box mounting – LH rail back of fuel tank
- "Bodylink" III w/cab pass-thru

All lights (LED) and reflectors shall conform to the motor vehicle laws of the State of Rhode Island.

K. Fuel System
Fuel tank - LH, 93 gallon aluminum
Aluminum fuel tank steps/straps
8.7 gallon DEF tank

L. Cab
Conventional Cab, air suspended (welded steel galvanized shell) to include rust preventative procedures.
Approximatley 116" BBC (front of flush bumper to back of cab), engine to sit front of firewall
Hood and fenders, fiberglass – tiltable with frame mounted fender splash shield section and engine inspection hatches
Identification/clearance lights (5)
Mirrors, stainless exterior west coast RH and LH
Convex spot mirrors
Single air horn
Radio – AM/FM w/weatherband

M. Cab Interior
Seat belts with shoulder strap shall be installed for driver and passenger positions which meet latest SAE Specifications and Federal Highway Safety Standards.
Unit must comply with Federal Motor Carrier Safety Regulations.
Steering wheel, tilt/telescopic
Floor covering rubber, black
Gauge package to include exhaust pyrometer, air restriction monitor, hour meter, engine oil temperature, and transmission oil temperature.
(6) Dash mounted miscellaneous switches - (2) 15A ign, (1) 20A ign, (1) 10A ign, (1) 15A bat, and (1) 20A bat
Dash control/power supply for local install of plow lamps w/lead at grill
PTO – control, switch and light w/wiring and piping factory installed
Keyed alike chassis
Seat driver, Bostrom Talledaga 915 air suspension
Air conditioning with integral heater/defroster
Power Windows

N. Paint
Cab shall be White over proper primer for cab and sheet metal. No other color will be accepted by RIDOT, chassis and running gear shall be black. Wheels shall be powder coated white.

2" Diamond Grade 3-M conspicuity tape with 6" alternating red and white blocks shall be used to outline the perimeter of the tailgates and the dump body sides.

A minimum of 68 feet of tape shall be used on each 15 foot dump body and spreader. Exact mounting pattern shall be coordinated through the RIDOT Maintenance Administrator.

O. Accessories
Two wheel chocks
Fire extinguisher - #5 ABC
Three safety triangles
Three sets keys
Fender extensions for front tires
Textured Poly Tandem Fenders
Back up alarm
In cab power source
Air conditioning
Driver side air ride seat
One First-Aid Kit
One Spill Response Kit
800 mHz digitial radio (See attached specifications for ONLY ACCEPTABLE Motorola Astro XTL 1500)
Ignition keyed synonymously with all vehicles
Floor Mats

An infrared pavement temperature sensor shall be properly mounted per the manufacturer's recommendations. The gauge shall be mounted in a visible location integrated into the dash layout or as part of spreader control and shall display both air and pavement temperature simultaneously. To be a Sprague Roadwatch (800 441-2048) or Quixote Transportation Technologies Surface Patrol or approved equal.

A lockable weatherproof toolbox with T-handle latches shall be mounted to the frame on the curb side, under the body. The toolbox shall be approximately 36 inches long by 18 inches high by 18 inches wide. To be constructed of 12 gauge 201 Stainless Steel minimum, with curbside opening stainless steel door with stainless steel piano hinge. Front panel shall have exterior jam lip designed to deflect water away from the door opening. Edges of door shall seal tightly against weather stripping and chain door retainer. Two keys shall be provided with each unit. The unit shall be bolted to the frame using cradle type mounting brackets.

P. Warranties
Engine - Please provide warranty information (complete engine including injectors, turbocharger, electrical harnesses, lines and tubes – 100% parts and labor). Exceptions are:

aftertreatment system components and related sensors and EA harnesses which shall be covered under separate warranties.

Engine Aftertreatment system and EA Harness and sensors – 60 months/100,000 miles – 100% parts and labor

Chassis - "Bumper to bumper" - 60 months/100,000 miles – 100% parts and labor - including components (but not limited to) such as radiators, cab, suspension, and electrical.

Allison Transmission – 60 months/no mileage limits – 100% parts and labor

No engine hour limitation in above warranties

A breakdown of the standard manufacturer's warranty when it is in excess of the 2 years requested shall be listed for each component of the cab and chassis and included in the manual set.

Q. Training

A 3 day, "hands on" technician training session shall be provided at RIDOT Division of Highway & Bridge Maintenance Headquarters. The training session topics will be coordinated through RIDOT Motor Pool section and may include but are not limited to diesel engine tune-up and maintenance, multiplex systems, and use of purchased software. The training session shall accommodate at least 12 RIDOT employees at each session. Training shall be provided approximately 3 weeks after delivery of the first unit.

There shall be a one day (1) seminar, to instruct RIDOT personnel on the operation, servicing and repair of the hydraulic system, at each delivery location. 1/2 of the day shall be for operator training and the other ½ for mechanics. This seminar is separate from the training required on above covering the truck package excluding the hydraulics. A web broadcast shall be an allowed method of conducting this seminar.

A follow up session is required for operators after the trucks have been used one winter season. These sessions are to be held Division of Highway & Bridge Maintenance Headquarters. The operator's session is to be approximately 4 to 6 hours.

All training sessions shall be scheduled on a date mutually agreed upon by RIDOT and the hydraulics supplier. All training sessions shall be performed by competent technician thoroughly trained in the use, service, and operation of the unit.

R. Hydraulics

If the hydraulic component supplier is different than the supplier of the spreader controller, the truck equipment company (body installer) shall take responsibility for coordinating efforts of the two suppliers. It will be the responsibility of the truck equipment company to ensure that the total hydraulic package functions as intended.

The control valve system shall be enclosed in a stainless steel box with side opening weather resistant lid, mounted behind the cab on the left side frame rail in a location where the manual overrides can be accessed. The lid shall be removable without the use of tools and shall provide for maximum access to the valve. A legend describing each valves operation shall be stuck on the inside of the lid. Enclosure shall be integrated with the hydraulic reservoir.

S. Software, Manuals, Laptop

Vendor shall provide current editions of all relevant cab and chassis manuals. This must include but not be limited to overhaul and tune-up manuals, diagnostic, wiring, troubleshooting, and parts manuals for engine, transmission, differential and all components.

One (1) Panasonic "Toughbook" lap-top/tablet computer, Windows 7 compatible shall be provided with the capability to interface with the vehicle.

Chassis manufacturer's diagnostic software shall be loaded in computer and licensed to the Rhode Island Department of Transportation. Electronic media shall include annual subscription renewals for five (5) year. Electronic media shall be capable of being moved to new computer or reloaded in the event of hard drive crash without additional charges. An example of engine software required would be Cummins Insite Lite, Navistar Service Maxx Fleet Pro, or approved equal.

One operator's manual detailing the recommended operating procedure shall be delivered with each unit.

Sets shall consist of the following: shop manual, parts manual including exploded views of major components with their part numbers, wiring diagram, operator's manual, and a summary of warranties offered in excess of the standard one year.

The manuals shall fully and clearly cover all components of the unit, including the pump, valves, controls, tanks, etc. Manuals shall also include comprehensive trouble shooting and diagnosis information for all functions.

Shop manual shall explain, in detail, procedures for overhauling all major components.
Failure to provide manuals may result in 5 percent of total bid.

The content of the set will be evaluated for approval at the prototype approval meeting.

Complete shop drawings for the hydraulic oil supply, control valve box, and control box in the cab, and a complete system schematic shall be submitted to the RIDOT Division of Highway & Bridge Maintenance Administrator for review and approval prior to construction of any of the units.

Manuals shall also cover all allied equipment and components installed on chassis provided by body installer.

Any deviations from this system must be noted on the bid and approved by the RIDOT Division of Highway & Bridge Maintenance Administration. A complete system description and product literature for major components shall accompany the bid.

POWER TILT CUSTOM TRUCK PLOW ATTACHMENT SPECIFICATIONS
The custom truck/plow attachment shall be manufactured by a recognized snowplow manufacturer and shall include 1/2" side plates reinforced and bolted as far back on the truck frame as feasible.

The upper and lower horizontal support members shall be fabricated from not less than 7" x 4" x 3/8" (upper) and 4" x 4" x 3/8" (lower) wall square and rectangular structural tubing. The cylinder base angle shall be fabricated from 4" x 4" x 3/ 8" tube with ½" cylinder connecting lugs. The attachment shall provide a selection of four (4) push heights, two on 30 1/2" and two on 21" hole centers for connection of the plow.

The plow lift cylinder shall be double acting with a 4" bore, 10" stroke, chrome plated piston rod and a polypack seal with a rubber return wiper to clean the piston as it retracts into the cylinder barrel. The base of the cylinder shall attach to the aforementioned horizontal member, while the cylinder rod attaches to a horizontal pivoting lift yoke weldment.

It shall be possible to lockout plow lift action and instead hydraulically tilt the entire center portion of the plow attachment (and any applicable side wing appurtenances) forward so to accommodate a tilt hood truck chassis This function shall utilize the same cylinder noted above.

In addition, it shall be possible with the removal of four (4) pins to expediently detach the plow lift device (and any applicable side wing appurtenances) from the custom truck attachment for summer truck application.

HARDWARE PLATING: All nuts, bolts and chain shall be zinc plated.

PAINT: All snowplow components shall be shot blasted and painted with one (1) coat of primer and one (l) coat of finish paint.

CYLINDER RODS: All snow plow hydraulic cylinder rods shall be induction hardened and chrome plate to a minimum of 1.0 mm thickness.

PLOW LIGHTS: The upper horizontal member shall be fitted with a set of LED elevated 12 volt, hi-low beam plow lights, with quick-disconnect harness.

BACK UP CAMERA: Provide rear view camera that can be incorporated with spreader control monitor. Monitor shall give priority to backup camera when truck is in reverse.

HEAVY DUTY TRIP EDGE WING:
Wing: Shall have an overall length of 12 feet, a nose height of 29" and a discharge height of 40 ¼". The moldboard shall be fabricated from 8 gauge HRMS, the top of which shall incorporate an integral channel shaped continuation of the same so to enhance rigidity. The bottom moldboard reinforcement shall be from not less than 5" x 5" x 1/2" structural angle.

Moldboard: Shall be provided with not less than five vertical reinforcing ribs from 1/2" thick plate. Located between the two (2) outside vertical ribs, at the discharge end of the moldboard, shall be foul (4) horizontal ribs also from 1/2" thick plate (two upper and two lower): all with a series of vertically punched holes so to provide a selection of attachment points for the upper and lower stand-off arms.

Additionally, the front nose portion of the wing shall include a selection of two (2) 1-9/16"diameter holes for attachment with an l ½" hex head bolt at the front mast hinge.

Carbide Cutting Edge: It shall be (3) piece ¾" x 6" carbide sections, and shall be bolted to the plow for easy replacement with 5/8" x 2 ½" Grade 5 carriage bolts and locknuts on 12" centers. Included at the discharge end shall be 10 degree moldboard shoe and shall include a carbon steel backer blade.

The cutting edge reinforcement shall not be less than 4" x 4" x 3/4" angle with ½" steel plate reinforcing gussets, welded along its entire length.

The trip mechanism shall be of the single section trip edge type. It shall consist of five (5) 7/8" alloy wire torsion springs with sixteen (16) active coils 17 3/8" long It shall have two (2) hinge rods made from 1/2" HR steel which slide through the springs and hinge lugs to support the trip edge mechanism. Each spring shall have provision for pre-load adjustment.

Standoff Arm: The standoff arms shall be ruggedly designed with the inner arms fabricated from 2 1/8" solid bar stock, and the outer arms fabricated from 2 1/2" schedule 80 pipe.

The upper arm shall be equipped with a swivel with grease fitting so to prevent damage to the arms when the wing is lifted to the carry position. The lower arm shall be equipped with a compression spring so to provide a shock absorber. Both arms shall be adjustable in length from 61" to 76", offering three (3) positions of adjustment.

Hardware Plating: All nuts, bolts and chain shall be zinc plated.

Paint: All wing components shall be shot blasted and painted with one (l) coat of primer and one (l) coast of finish paint.

SPECIFICATIONS FOR RIGHT HAND MOUNT AND POWER HYDRAULIC CONTROLS

General: The rear mast arrangement shall be located behind the cab and in front of the dump body.

Rear Mast Arrangement: The rear mast vertical beam shall be fabricated from a 10" channel. This vertical beam shall be integrally welded to and supported by a second horizontal 10" channel, which spans the width of the frame. A 1/2" frame plate, two vertical stabilizing ribs and a diagonal member from 10" channel shall further connect these vertical and horizontal members. In addition, there shall be two (2) cylinders provided to control the rear of the wing.

Rear of Wing Cylinder: Shall not be less than a 3" diameter x 14 7/8" stroke double acting type. It shall attach between the rear mast slide and a sliding collar at the upper stand off arm. Adjustable flow restrictors shall be installed between the hydraulic control valve and this cylinder to provide for variation of speed. The cylinder shall be fitted with an integral counter-balance valve at its base to protect against impact load and the possibility of the wing dropping due to pressure line failure.

Rear Slide Cylinder: Shall not be less than a 3" diameter x 33" stroke double acting, which shall be located at the outside of the rear mast vertical support beam.

Wing plow must not interfere with the functionality of the side view mirror.

Front of Wing Cylinder: Shall not be less than a 3" diameter x 33" stroke double acting type, which shall be located integrally at the front post, the travel of the front slide shall be 66". All cylinders shall have chrome-plated piston rods, or nitride cylinder, packing and a rod wiper to clean its piston rod as it retracts into the cylinder tube.

The front mast shall be bolted to and supported by a lower 7" x 4" x 3/8" rectangular structural tube member extending from the truck hitch.

TRIP EDGE POWER REVERSIBLE PLOW SPECIFICATIONS

Moldboard: Shall be 11" long, 42" high inside and shall extend at least 12" out over the cutting edge. The moldboard shall be formed from one piece of 3/8" thick UHMV polymer sheet. The upper portion of the polymer sheet shall be bolted to and sandwiched between 3" x 3"x ¼" and 3½" x 3½" x ¼" angles to form a rigid structure at the top. The bottom of the moldboard shall be reinforced by not less than a 5" x 5" x ½" angle. It shall be provided with eight one piece ½" plate vertical ribs, and shall be equipped with two 10-degree moldboard shoes.

The moldboard shall be equipped with a ½" x 18" rubber flap bolted across the top of the moldboard to prevent snow from blowing over.

Carbide Cutting Edge: It shall be (3) piece ¾" x 6" carbide sections, and shall be bolted to the plow for easy replacement with 5/8" Grade 5 carriage bolts and locknuts on 12" centers. Shall be equipped with a carbon steel backer blade.

Cutting Edge Reinforcement: Shall be at least 4" x 4" x ¾" steel angle with ½" steel plate gussets electrically welded to the framework.

Shoes: Replaceable wear parts shall include two (2) moldboard shoes and two (2) cast chilled malleable iron curb shoes.

Trip Mechanism: The trip mechanism shall be of the single section trip edge type. It shall consist of five (5) 7/8" alloy wire torsion springs with sixteen coils 17 3/8" long. It shall have two hinge rods made from 1½" HR steel which slide through springs and hinge lugs to support the trip edge mechanism. Each spring shall have provision for pre-load adjustment.

Reversing Frame: The reversing frame shall be fabricated from 4" x 4" x 3/8" square tubing and 4" x 3" x ¼" rectangular structural tubing gusseted at key stress points. Three (3) sets of ½" thick reinforced connecting lugs spanning 80" shall be welded to the 4" x 4" x 3/8" member of the reversing circle. These lugs shall serve as connection points to the moldboard.

"A" Frame: Shall include a weldment consisting of two (2) pieces of 4" x 3" x ¼" rectangular tubing spaced so to accommodate a sliding member from 7" x 4" x 3/8" rectangular tubing. This weldment shall have top and bottom members from 3/8" thick plate, and rear plate not less than 1" thick x 10" wide The rear plate shall be fitted with an oscillating bar from ¾" plate, which incorporates 1 ¼" drive ears on 30 ½" centers.

The oscillating bar shall revolve about an 1 ½" Grade 5 bolt so to allow the plow to follow road contour.

The sliding member, as noted above in the "A" Frame section, shall include a 1-15/16" diameter CRS pivot pin for attachment to the Reversing Frame. It shall sit inside the "A" Frame weldment where it shall be secured in position by a 9/16" diameter wire extension spring.

This spring retained sliding member shall provide moldboard locking/unlocking action when the reversing cylinders are activated.

Reversing & Locking Mechanism **NO EXCEPTIONS**: The hydraulic reversible push frame shall offer nine (9) plowing positions: four (4) on either side of center to a maximum of 37 degrees for discharge to the right or left Reversing actuation shall be via two (2) 3" diameter x 18" stroke single acting cylinders.

Cylinder protection shall be provided by the aforementioned spring retained sliding mechanism, which pulls a 1 ¼" Nicroloy locking pin located at the rear underside of the "A" Frame into a ¾" thick indexed locking plate at the Reversing Frame .

Locking force is provided by the combination of spring tension and forward plows movement, while unlocking force is provided by the reversing cylinders.

Hardware Plating: All nuts, bolts and chain shall be zinc plated

Plow lift to include dead sheave leveling device with stainless steel cable.

Paint: All snowplow components shall be shot blasted and painted with one (1) coat of primer and one (1) coat of finish paint.

Cylinder Rods: All snow plow hydraulic cylinder rods shall be induction hardened and chrome plated to a minimum of 04" (1 mm) thickness.

Wrap-A-Round Bumper: An additional bumper shall be supplied at each end of the moldboard (quantity 2). They shall be from a minimum of 5/8" thick steel, shall bolt at the cutting edge face and shall project outward beyond the cutting edge where they shall terminate with a 2 1/8" diameter round bar.

DUMP BODY AND HOIST PACKAGE

General: The specifications describe a "Heavy Duty" conventional dump with a monoshell design, the material used for the floor/sides and gate will be HARDOX 450, Finish paint will be white to match the truck cab.

Body length: 14'
Side Height: 54"
Tailgate Height: 60"

Floor: One piece ¼" material with 45 degree ramps to the sides and front.

Sides: 3/16" Smooth side with dirt shedding lower rub rails, boxed top rail with inverted angle the full length for dirt shedding, board pockets capped.

Gate: ¼" two panel with air controlled tailgate latch, two manual asphalt chute doors installed in the left and right of the gate.

Cab Shield: 42" Full seam welded

Lift Cylinder: 35 Ton Capacity designed for salt application, cylinder shall not protrude past the front body panel, and cylinder shall not protrude more than 14" into the load space area.

Flaps: Installed front and rear of the rear axle.

Reflective Tape: Installed on body sides and tailgate.

Tool box: An aluminum tool box, approximately 18"x 18" x 36" shall be installed.

Lighting:

Betts LED ICC and rear light modules #A5ROJ0139 mounted to body per RIDOT direction
Two sanding lights mounted to the spreader per RIDOT direction
One wing spot light installed per RIDOT direction (LED preferred)
One wing strobe light Whelen model WPLOWIA installed per RIDOT direction (LED preferred)
Two Whelen model L-31 lights mounted to the front of the body cab shield per RIDOT direction
Two oval grommet mounted LED flashers and two LED S/T/T mounted in the body rear corner post
All wiring will be sealed and run thru junction boxes, PVC pipe routed inside chassis frame

Towing:

Chassis mounted ¾" pintle plate with a 25-ton swivel hook, Two "D" rings, electrical socket, and pintle.

Hook height and electrical socket type per RIDOT direction.

MATERIAL SPREADER
Length: 13'
Width: 82"
Height: 62"

12 gauge stainless steel sides and ends with a 45degree side slope, 7 Gauge stainless steel longitudinal with slotted ends for gearbox and drive shaft removal, 25:1 gearbox with 1 ½" drive shaft and 1 ¼" idler shaft, spring loaded chain take up, 6 tooth sprockets, pintle type. Conveyor chain with 1 ½"x ¼" double welded cross bars; tip up style spinner assembly with Poly disc, Top screen, stainless steel light bar with flashers/ICC and S/T/T mounted to the top rear of the spreader, installed in the dump body with a tailgate latch bar and four tie downs.

Pre-Wetting System: (2) 160 gallon poly tanks mounted to the spreader with stainless steel hardware, Hydraulic powered calcium pump mounted in a stainless steel enclosure, all required hoses/spray bar and nozzles to make the system fully functional and controlled by the CS550 controller.

GROUND SPEED ORIENTED CENTRAL HYDRAULIC SYSTEM
NO EXCEPTIONS

Power take off will be transmission mounted and will be hot shift design with no less than 100% of engine speed, the PTO will accept a variable displacement pump via direct mount. Controls for engage/disengage of the PTO shall be a CS 105. The CS 105 controller shall monitor hydraulic reservoir oil level via the reservoir oil level float switch, once the oil level drops below a safe operating level, this switch will disengage the PTO. The controller shall be compatible with CS550 design.

The direct PTO mounted hydraulic pump shall be a piston type, variable displacement, pressure compensating design.

The pump shall be a Rexroth A 10V060 52 series.

Hydraulic valves shall be Rexroth load sense M4-12 series to control all hydraulic functions. The valve shall be installed in a frame mounted stainless steel enclosure.

Controls for all valves shall be Del pneumatic equipped with an adjustable filter/lubricator/regulator assembly plumbed inline with all controls mounted in the cab per RIDOT direction.

The spreader control shall be a Compu-Spread CS550 with all the latest updates and shall be compatible with RIDOT existing units. This unit shall control the pre-wet and application rate of all materials and monitor the road and air temperature. Shall include software required to transfer data to RIDOT account with Interfleet Inc. a division of Webtech Wireless in the same manner as RIDOT existing trucks.

The location and mounting of all controls shall be pre-approved by RIDOT.

All hose ends and fittings shall be compatible with the hose on which they are used. Suction and return lines shall meet or exceed a rating of SAE100R4. Pressure lines shall meet or exceed a rating of 100R2 and shall be of double wire braid construction.

All hoses shall be sized to pump and cylinder requirements and shall be routed in such a way as to avoid contact with the exhaust system, driveshaft, and/or the chassis. Hoses shall be wrapped with protective hose wrap in potential wear spots and shall be securely anchored to the frame rails. All hydraulic lines from the control valve area to the front of the truck shall be custom formed. Stainless steel tubing, bulkhead mounted at both ends and supported by cushion type clamps. All hydraulic lines from the control valve area to the rear of the chassis shall be stainless steel tubing supported by cushion type clamps.

The spreader control shall be constructed with a "digital" type electronic circuit. Features will include night time vision display for viewing by the operator and used in calibration. Display shall also inform operator of service problems. The light shall illuminate when spreader is in operating mode. The display shall indicate if the spreader is in operating mode or stand-by

mode. A backlit minimum 7" color LCD shall be mounted in clear view of the operator, location in cab to be approved by RIDOT. Display shall show granular set rate, actual spread rate, spinner spread width, and pre-wet set rate. For Anti-Icing application, display shall show set rate, actual rate, and lanes that are active. Controller shall be able to switch from pre-wet to anti-ice with a flip of a switch and without going into set-up or calibration mode.

Controller shall be capable of adjusting granular material rates, pre-wet rates, and anti-icing rates on the fly without pause or interruption of spreader output while driving. Adjustment shall be accomplished with a straightforward, single hand operation without entering setup or calibration mode.

It shall not be possible for an operator to select manual mode unless the proper clearance password has been entered into calibration. If a feedback error occurs, the controller shall default into Open Loop Mode.

There shall be a ground speed sensor that will signal the control box to speed up or slow down the conveyor as the truck ground speed changes. All spreader functions shall stop when the truck stops, and shall resume immediately when the truck starts to move. There shall be a programmable jump start feature to provide immediate material flow at one MPH.

Spreader speed sensor wire cable shall be of the same material and integral to the main spreader control cable. Spreader cable wire shall be 18 gauge, minimum.

The system shall include all necessary wiring and switching required to be fully operational.

The electrical harness from the control console to connector #1 and from the control console to the valve bank box shall be shielded and be solvent and oil resistant. Wiring from the control console to connector #1 and from the control console to the valve solenoids shall be enclosed in a sealed, dry system with no external splices.

COVER SYSTEM SPECIFICATIONS MODEL DT-2000 CH

-·1/2" STEEL POWER MOUNTS WITH Teflon sealed spherical bearing
Grade 8 bolts and nuts
The in-cab power cover control lever shall be in line with other control levers
- A spool sectional valve is stacked with the existing sectional valves. A built -in check valve in the sectional valve safety locks the system in both directions. 25/3000 PSI hydraulic hose with #4 JIC fitting
Hydraulic cylinders have a W-bore 16, stroke with an l" chrome plated piston rod
Side arm wall tubing (2" x l ½"x 11 gauge) with steel welded ends and cylinder mounts
- 3 ½" galvanized steel tube roll assembly
- 18 oz Armor Guard Cover (wear resistant and asphalt approved) (UHMW) self-lubricating wedges (high density polypropylene)
- Full 100% warranty on parts and labor for one year (excludes cover)

SECTION 4: TECHNICAL PROPOSAL

Each offerer must include a separately sealed Technical Proposal, so marked, appropriate labeled with the RFP # and vendor name and must address the following which will be the basis for the technical evaluation:

Warranty/Warranty Resolution – Specify the period of time that the manufacturer will make any repairs or replace defective parts free of charge. Please provide a detailed description regarding the process for resolution of product issues.

Availability of Parts – Please describe the logistics regarding the availability of parts and the time frame for delivery.

Quality of Work Plan/Delivery Schedule/Significant Milestones - Please describe in detail, the framework within which the requested trucks will be produced. The following elements must be included: 1) Date when significant milestones are achieved 2) Specifically, the date when delivery can be expected. Anticipated delivery of trucks must be included (see Truck Delivery schedule on Page 6).

Experience, Capability, Capacity, and Qualifications – Please provide a detailed description of the Vendor's experience as a heavy equipment provider. A list of relevant client references must be provided, to include client names, addresses, phone numbers, dates of service and type(s) of service(s) provided.

SECTION 5: COST PROPOSAL

Each proposal must include a separately sealed cost proposal, so marked, appropriately labeled with RFP # and vendor name and must include both a per unit cost and a total cost for the required Ten-Wheel Dump Trucks outlined in this proposal.

SECTION 6: EVALUATION AND SELECTION

Proposals will be reviewed by a Technical Review Committee comprised of staff from The Department of Transportation. To advance to the Cost Evaluation phase, the Technical Proposal must receive a minimum of 60 (85.7%) out of a maximum of 70 technical points. Any technical proposals scoring less than 60 points will not have the cost component opened and evaluated. The proposal will be dropped from further consideration.

Proposals scoring 60 technical points or higher will be evaluated for cost and assigned up to a maximum of 30 points in cost category, bringing the potential maximum score to 100 points.

The Department of Transportation reserves the exclusive right to select the vendor that it deems to be in its best interest to accomplish the project as specified herein; and conversely, reserves the right not to fund any proposal(s).

Proposals will be reviewed and scored based upon the following criteria:

Criteria	Possible Points
Warranty/Warranty Resolution	5 Points
Availability of Parts	10 Points
Quality of the Work plan/Schedule/Milestones	25 Points
Experience, Capability, Capacity, and Qualifications of the Offeror	30 Points
Total Possible Technical Points	70 Points
Cost calculated as lowest responsive cost proposal divided by (this cost proposal) times 30 points *	30 Points
Total Possible Points	100 Points

*The respondent offering the lowest cost proposal will receive one hundred percent (100%) of the available points for cost. All other offerers will be awarded cost points based upon the following formula:

(low proposal / vendors proposal) * available points

For example: If the low offerer (Vendor A) proposals $65,000 and Vendor B proposals $100,000 for monthly cost and service fee and the total points available are Thirty (30), vendor B's cost points are calculated as follows:

$65,000 / $100,000 * 30= 19.5

Points will be assigned based on the offeror's clear demonstration of his/her abilities to complete the work, apply appropriate methods to complete the work, create innovative solutions and quality of past performance in similar projects.

Applicants may be required to submit additional written information or be asked to make an oral presentation before the technical review committee to clarify statements made in their proposal. Applicants may be required to submit additional written information or be asked to make an oral presentation before the Technical Review Committee to clarify statements made in their proposal.

SECTION 7: PROPOSAL SUBMISSION

Questions concerning this solicitation may be e-mailed to the Division of Purchases to Lisa Hill [lisa.hill@purchasing.ri.gov] no later than the date and time indicated on page one of this solicitation. Please reference RFP # on all correspondence. Questions should be submitted in a Microsoft Word attachment. Answers to questions received, if any, will be posted on the Internet as an addendum to this solicitation. It is the responsibility of all interested parties to download this information. If technical assistance is required to download, call the Help Desk at (401) 574-9709.

Offerors are encouraged to submit written questions to the Division of Purchases. No other contact with State parties will be permitted. Interested offerors may submit proposals to provide the services covered by this Request on or before the date and time listed on the cover page of this solicitation. Responses received after this date and time, as registered by the official time clock in the reception area of the Division of Purchases will not be considered.

Responses (an original plus three (3) copies) should be mailed or hand-delivered in a sealed envelope marked "RFP#" to:

RI Dept. of Administration
Division of Purchases, 2nd floor
One Capitol Hill
Providence, RI 02908-5855

NOTE: Proposals received after the above-referenced due date and time will not be considered. Proposals misdirected to other State locations or those not presented to the Division of Purchases by the scheduled due date and time will be determined to be late and will not be considered. Proposals faxed, or emailed, to the Division of Purchases will not be considered. The official time clock is in the reception area of the Division of Purchases.

RESPONSE CONTENTS
Responses shall include the following:

1. A completed and signed four-page R.I.V.I.P generated offerer certification cover sheet downloaded from the RI Division of Purchases Internet home page at www.purchasing.ri.gov.

2. A completed and signed W-9 downloaded from the RI Division of Purchases Internet home page at www.purchasing.ri.gov.

3. **A separate Technical Proposal** describing the , warranty/warranty resolution; availability of parts; delivery schedule/significant milestones and overall quality of the work plan; and experience, capability, capacity, and qualifications of the offeror and background of the applicant and experience with similar projects, and all information described earlier in this solicitation. The Technical Proposal is limited to six (6) pages (this excludes any appendices) .

4. **A separate, signed and sealed Cost Proposal** reflecting the total cost of this procurement.

5. In addition to the multiple hard copies of proposals required, Respondents are requested to provide their proposal in **electronic format (CD-Rom, disc, or flash drive)**. Microsoft Word / Excel OR PDF format is preferable. Only 1 electronic copy is requested and it should be placed in the proposal marked "original".

CONCLUDING STATEMENTS

Notwithstanding the above, the State reserves the right not to award this contract or to award on the basis of cost alone, to accept or reject any or all proposals, and to award in its best interest.

Proposals found to be technically or substantially non-responsive at any point in the evaluation process will be rejected and not considered further.

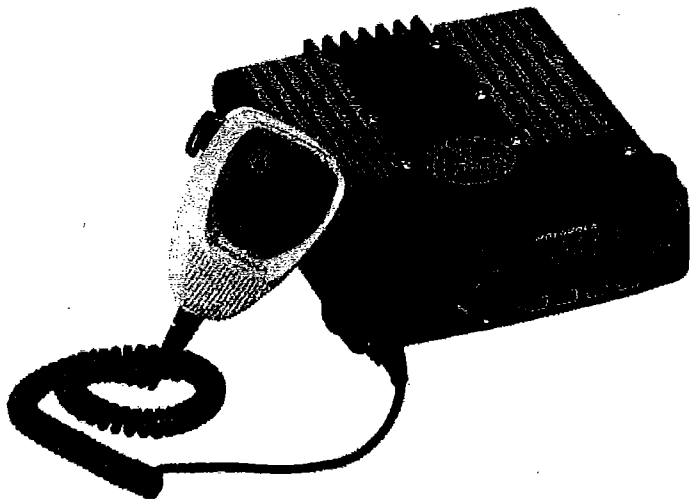
The State may, at its sole option, elect to require presentation(s) by offerors clearly in consideration for award.

SPECIFICATION SHEET

MOTOROLA

ASTRO® XTL™ 1500

Digital Mobile Radio



MODEL FEATURES

Frequency Bands
- 136-174 MHz
- 380-470 MHz
- 450-520 MHz
- 764-870 MHz

Power Levels
- 10-50 Watt (136-174 MHz)
- 10-40 Watt (380-470 MHz)
- 10-45 Watt (450-520 MHz)
- 10-35 Watt (764-870 MHz)

48 Channels (Standard)

Dual mode operation (ASTRO Digital and Analog)

9600 or 3600 Baud features

Project 25 capability on Conventional and Trunking systems

Project 25 compliance interoperable voice signaling features

Bandwidth Receiver
- 12.5/25/30 kHz (analog) – 136-174 MHz
- 12.5/25 kHz (analog) – 380-470 MHz and 450-520 MHz
- 12.5/20/25 kHz (analog) – 764-870 MHz

12.5 kHz bandwidth receiver (digital)

4 Programmable buttons

Emergency button

Dash mount

Meets Military Specs 810 (C,D, E and F)

Utilizes Windows®-based customer programming software

Built in FLASHport™ support

Optional Keypad microphone

Internal Speaker

Text Messaging

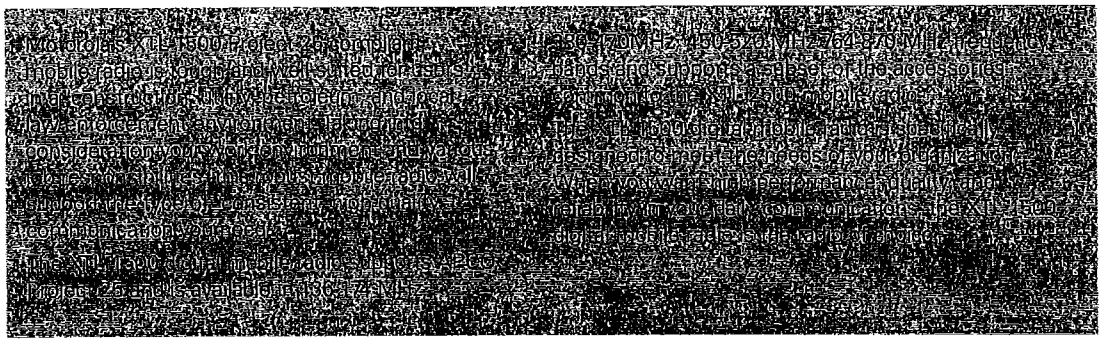
OTAP (Over the air programming)

AVAILABLE WITH SOFTWARE ENHANCEMENT PACKAGE

512 Channels

Encryption capability (ADP)

Integrated voice and data capable



SPECIFICATION SHEET

ASTRO® XTL™ 1500
Digital Mobile Radio

GENERAL PERFORMANCE SPECIFICATIONS

Frequency range	136-174 MHz 380-470 MHz 450-520 MHz 764-870 MHz
Modulation	C4FM of QPSK-C family (Compatible 4-Level Frequency Modulation and Compatible Quadrature Phase Shift Keying)
Protocol	
Project 25-CAI	4.4 kbps IMBE, 2.8 kbs Error Correction Coding, 2.4 kbps Embedded Signaling
Channel Bandwidth	
Analog	12.5/25/30 kHz (136-174 MHz) 12.5/25 kHz (380-470 MHz and 450-520 MHz); 12.5/20/25 kHz (764-870 MHz)
Digital	12.5 kHz

VOICE CODER

Voice Coding Method IMBE (CAI)	Improved Multi Band Excitation (IMBE)
Voice Truncation	None
Frame Re-sync Interval	180 mSec (Clear Digital Mode)
Forward Error Correction	Golay code
Error Mitigation Project 25-CAI (IMBE)	
Dual Level	Level 1: Extrapolates and replaces 20 mSec voice frames that exceed the error correction algorithm tolerance. Level 2: Progressive muting of 20 mSec voice frames that are too severely damaged for Level 1 replacement.
Code Book Structure	APCO Project 25 (IMBE): No code book

SIGNALLING (ASTRO MODE)

Signalling Rate	9.6 kbps
Digital ID Capacity	10,000,000 Conventional / 48,000 Trunking
Digital Network Access Codes	4,096 network site addresses
ASTRO Digital User Group Addresses	4,096 network site addresses
Project 25 – CAI Digital User Group Addresses	65,000 Conventional / 4,094 Trunking
Error Correction Techniques	Golay, BCH, Reed-Solomon codes
Data Access Control	Slotted CSMA: Utilizes infrastructure-sourced data status bits embedded in both voice and data transmissions.

SPEAKER

Dimensions	5.5" x 5.5" x 2.5" (139.7 x 139.7 x 63.5 mm) (Excluding mounting bracket)
Weight	1.5 lbs (0.7 kg)

MOBILE

Dimensions	Radio Transceiver 2" x 7" x 7.8" (51 x 179 x 197 mm) Control Head 2.6" x 7.3" x 2.7" (65 x 185 x 69 mm) Radio Transceiver and Control Head 2.6" x 7.3" x 9.8" (65 x 185 x 248 mm)
Weight	Radio Transceiver and Control Head 5.2 lbs (2.34 kg) (764-870 MHz and 136-174 MHz) 5.2 lbs (2.32 kg) (380-470 MHz and 450-520 MHz)

SPECIFICATION SHEET

ASTRO® XTL™ 1500
Digital Mobile Radio

TRANSMITTER

Frequency	764-776 MHz 794-806 MHz 806-825 MHz 851-870 MHz	380-470 MHz (Range 1) and 450-520 MHz (Range 2)	136-174 MHz
RF Power	10-30W (764-806 MHz) 10-35W (806-870 MHz)	10-45W (450-500 MHz) 10-40W (500-512 MHz) 10-25W (512-520 MHz)	10-50W
Max Freq Separation	Full Bandsplit	Ref Above Bandsplit	Full Bandsplit
Freq Stability Operating Freq Accuracy (–30°C to +60°C;+25°C Ref) - 700/800 & UHF (± 2 ppm (–30°C to +60°C) - VHF	1.5 ppm	2 ppm	2 ppm
Modulation Limiting			
25/20 kHz, 25 kHz, 25/30 kHz channel	±5 kHz, +/-4 kHz (NPSPAC)	±5 kHz	±5 kHz
12.5 kHz channel	±2.5 kHz	±2.5 kHz	±2.5 kHz
Modulation Fidelity (C4FM) 12.5 kHz digital channel	±2.8 kHz	±2.8 kHz	±2.8 kHz
Channel Spacing Analog	12.5/20/25 kHz	12.5/25 kHz	12.5/25/30 kHz
FM Hum and Noise			
20/25 kHz, 25 kHz, 20/25 kHz	40 dB	45 dB	45 dB
12.5 kHz	34 dB	40 dB	40 dB
Emissions (GNSS=Global Navigation Satellite System)	Conducted: –70 dBc; –85 dBc (GNSS) / Radiated: –20 dBm; –40 dBm (GNSS)	Conducted: –85 dBc / Radiated: –20 dBm	Conducted: –85 dBc / Radiated: –20 dBm
Audio Response (6 dB/Octave Pre-emphasis from 300 to 3000 Hz)	+1, –3 dB (EIA)	+1, –3 dB (EIA)	+1, –3 dB (EIA)
Audio Distortion per EIA	3%	3%	3%

POWER AND BATTERY DRAIN

Model Type	136-174 MHz 380-470 MHz 450-520 MHz 764-870 MHz
Minimum RF Power Output	10-50 Watt (136-174 MHz) 10-40 Watt (380-470 MHz) 10-45 Watt (450-520 MHz) 10-35 Watt (764-870 MHz) 25-110 Watt (136-174 MHz) 25-110 Watt (380-470 MHz)
Operation	13.8V DC ±20% Negative Ground
Standby at 13.8V	
136-174 MHz (10-50 Watt)	0.85A
380-470 MHz (10-40 Watt)	0.85A
450-520 MHz (10-45 Watt)	0.85A
764-870 MHz (10-35 Watt)	0.85A
Receive at Rate Audio at 13.8V	
136-174 MHz (10-50 Watt)	3.2A
380-470 MHz (10-40 Watt)	3.2A
450-520 MHz (10-45 Watt)	3.2A
764-870 MHz (10-35 Watt)	3.2A
Transmit Current (A) at Rated Power (W)	
136-174 MHz (10-50 Watt)	13A (50W)
380-470 MHz (10-40 Watt)	11A (40W)
450-520 MHz (10-45 Watt)	11A (45W)
764-870 MHz (10-35 Watt)	12A (35W)

FCC TYPE ACCEPTANCE ID

Band	Output Power	Transmitter Number
136-174 MHz	10-50 W	AZ492FT3806
380-470MHz	10-40 W	AZ492FT4862
450-520 MHz	10-45 W	AZ492FT4867
764-870 MHz	10-35 W	AZ492FT5823

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–30°C / +60°C
Storage Temperature	–55°C / +85°C
Ingress Protection	IP54 certified

SPECIFICATION SHEET

ASTRO® XTL™ 1500
Digital Mobile Radio

RECEIVER

Frequency	764-776 MHz 794-806 MHz 806-825 MHz 851-870 MHz	380-470 MHz (Range 1) and 450-520 MHz (Range 2)	136-174 MHz
Channel Spacing	12.5 / 20 / 25 kHz	12.5 / 25 kHz	12.5 / 25 / 30 kHz
Maximum Frequency Separation	Full Bandsplit	Full Bandsplit	Full Bandsplit
Option Pre-Amp	No	No	No
Analog Sensitivity			
20 dB Quieting	.30 µV	0.40 µV	0.40 µV
12 dB SINAD per EIA	.25 µV	0.30 µV	0.30 µV
Digital Sensitivity			
1% BER (12.5 kHz channel)	.30 µV	0.40 µV	0.40 µV
5% BER (12.5 kHz channel)	.25 µV	0.30 µV	0.30 µV
Intermodulation Distortion	80 dB	85 dB	85 dB
Spurious Response Rejection	90 dB	90 dB	90 dB
Audio Output Power at 3% distortion (External/Internal Speaker)	7.5 W (8 Ω ext. speaker) 3 W (int. speaker)	7.5 W (8 Ω ext. speaker) 3 W (int. speaker)	7.5 W (8 Ω ext. speaker) 3 W (int. speaker)
Adjacent Channel Rejection Selectivity (12.5 kHz/25 kHz)	65 dB / 80 dB	75 dB / 82 dB	75 dB / 82 dB
Audio Response (6 dB/Octave De-emphasis from 300 to 3000 Hz)	+1, –3 dB (EIA)	+1, –3 dB (EIA)	+1, –3 dB (EIA)

MILITARY STANDARDS 810 C, D, E, & F

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temperature Storage	501.1	I	501.2	I/A1	501.3	I/A1	501.4	I/Hot
High Temperature Operational	501.1	II	501.2	II/A1	501.3	II/A1	501.4	I/Hot
Low Temperature Storage	502.1	I	502.2	I/C3	502.3	I/C3	502.4	I/C3
Low Temperature Operational	502.1	I	502.2	II/C1	502.3	II/C1	502.4	II/C1
Temperature Shock	503.1	-	503.2	I/A1-C3	503.3	I/A1-C3	503.4	I/Hot-C3
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I
Rain Blowing	506.1	I	506.2	I	506.3	I	506.4	I
Rain Steady	506.1	II	506.2	II	506.3	II	506.4	III
Humidity	507.1	II	507.2	II	507.3	II	507.4	-
Salt Fog	509.1	-	509.2	-	509.3	-	509.4	-
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I
Blowing Sand			510.2	II	510.3	II	510.4	II
Vibration Minimum Integrity	514.2	VIII/F, Curve-W	514.3	I/10	514.4	I/10	514.5	I/24
Vibration Loose Cargo			514.3	II/3	514.4	II/3	514.5	II/5
Shock Functional	516.2	I	516.3	I	516.4	I	516.5	I
Shock Crash Hazard	516.2	III	516.3	V	516.4	V	516.5	V
Shock Bench Handling	516.2	V	516.3	VI	516.4	VI	516.5	VI

MOTOROLA

Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A. www.motorola.com/governmentandenterprise 1-800-367-2346

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R3-1-2027E

Trade-Ins

Department:	RIDOT		
Division:	Maintenance		
RI-FANS Requisition No.:			
Date:	1-28-2014		
Contact Person:	Richard Dowding	Phone No.:	401-734-4875

No.	Year	Make	Model	VIN No.	Mileage	State Veh No.	State Plate No.
1.	99	Int'l	6 wheeler	1HTGEATR1XH662216		22616	260
2.	99	Int'l	6 wheeler	1HTGEATR3XH662198		22615	274
3.	99	Int'l	6 wheeler	1HTGEATR3XH662217		22614	275
4.	99	Int'l	6 wheeler	1HTGEATR0XH662207		22624	293
5.	99	Int'l	6 wheeler	1HTGEATR5XH677009		22527	298
6.	99	Int'l	6 wheeler	1HTGEATR1XH662197		22611	301
7.	99	Int'l	6 wheeler	1HTGEATR5XH662204		22622	320
8.	99	Int'l	6 wheeler	1HTGEATR0XH662210		22633	351
9.	99	Int'l	6 wheeler	1HTGEATR4XH662209		22612	205
10.	99	Int'l	6 wheeler	1HTGEATR8XH662200		22625	368
11.	99	Int'l	6 wheeler	1HTGEATRXXH662201		22619	399
12.	99	Int'l	6 wheeler	1HTGEATR5XH662199		22620	400
13.	99	Int'l	6 wheeler	1HTGEATR7XH662205		22623	307
14.	99	Int'l	6 wheeler	1HTGEATR3XH662203		22630	1424
15.	99	Int'l	6 wheeler	1HTGEATR2YH324101		22901	1663
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STATE OF RHODE ISLAND
DIVISION OF PURCHASES
RFP #7548460 - TEN-WHEEL TANDEM AXLE DUMP TRUCKS - R.I.D.O.T.

COST PROPOSAL

(To be returned in duplicate in a separately sealed envelope labeled as "cost proposal" with RFP# and company name)

QUANTITY		UNIT PRICE		EXTENDED PRICE
5 each	X	$_____	=	$_____

Unit cost must be inclusive of the following:

1. Current model year cab and chassis (Specification A-S) Note: Section O requirements identify the need for each the accessories listed to be included for EACH truck. Radio must be per the specification attached;

2. Power Tilt Custom Truck Plow attachments identified (Pages 14-15);

3. Right Hand Mount and Power Hydraulic Controls (Page 16);

4. Trip Edge Power reversible plow (Pages 17-18);

5. Dump body and hoist package/Material spreader (Pages 19-20);

6. Groundspeed oriented central hydraulic system (Pages 21-22);

7. Cover system Model DT-2000CH (Page 22);

8. Motorola Astro XTL 1500 Digital Mobile Radio;

9. Delivery in the timeframe specified

Company Name: Signature:

_____ _____