



**Request for Bids
Plow Equipment and Truck Bodies
Bid No.: B16-001**

**Purchasing Department
73 Harlow Street
Bangor, Maine 04401
207-992-4282**

Issue Date: June 30, 2015

I. Introduction

The City of Bangor requests bids for the purchase and installation of two (2) heavy duty plow and wing assemblies, catch basin/ dump bodies, and hydraulic systems to operate on single axle plow truck. The complete unit will be used for construction work and plowing snow as well as cleaning catch basins.

II. General Information

General information is available on the City's website at the following web address: www.bangormaine.gov/bids/proposals. By submitting a response to this solicitation, the bidder accepts the responsibility for downloading, reading and bidding by the terms and conditions set forth in the City's "General Information for Vendors".

III. Submission

To be considered, return pages 4-18 of this Request for Bids in an envelope clearly marked "**Bid No.: B16-001: Plow Equipment & Truck Bodies**" by **2:00 PM, Wednesday, July 22, 2015** to the Purchasing department, City Hall, 73 Harlow Street, Bangor, Maine 04401.

Bids may also be submitted via email by using the link at the top of this page or by sending to: bids@bangormaine.gov. If emailing bid, please reference "**Bid No.: B16-001: Plow Equipment & Truck Bodies**" in the subject line. Bids will be publicly opened at the time stated above.

A tabulation of all bids received will be available after 3:00 PM on the date of opening. Bid results may be viewed by visiting the City's website at www.bangormaine.gov, Bids/Proposals/Results.

IV. Mandatory Pre-Bid Meeting

There will be a mandatory pre-bid meeting at the Public Services Department, 530 Maine Avenue, Bangor, Maine on **Tuesday, July 7, 2015 at 1 PM**. This will be the only opportunity for bidders to receive answers to questions or clarification of the specifications. All bidders must

be present and will not be relieved of any obligation due to his/her failure to acquaint him/herself with the specifications. All bidders must attend this meeting in order to bid this equipment.

V. Late Bids

It is the responsibility of the Bidder(s) to see that their bids have sufficient time to be received by the Purchasing Department before the submittal deadline.

Any bid, portion of a bid, or unrequested bid revision received at the City of Bangor Purchasing Department after the time and date specified, will be return to the Bidder(s) unopened.

VI. Withdrawal of Bids

No Bidder may withdraw his/her bid for a period of ninety (90) days from the date of opening. All bids shall be subject to acceptance by the City during this period.

To withdraw a bid prior to the opening, the bidder shall request the withdrawal in writing. All costs associated with the withdrawal (i.e. mailing fees) will be borne by the Bidder.

VII. Questions

Any questions must be directed in writing to bids@bangormaine.gov no later than 4:30 pm, Monday, July 13rd.

The City will issue a response to any questions or inquiries submitted in writing by the date above, on or before 4:30 PM, Wednesday, July 15th. The response will be in the form of an addendum, which will be available on the City's website.

VIII. Award

The bid award will be based on the following:

1. Price and equipment and cost of replacement parts;
2. Quality and performance of equipment proposed;
3. Availability of equipment;
4. Prior history of experience with the Bidder; and prior history or experience with equipment offered; and
5. Evaluation team assessment; The evaluation team will consist of the Equipment Direct, Service Manager, Lead Mechanic, Forman, and Public Services Department representatives.

IX. Rejection

The City of Bangor reserves the right to reject any and all bids, to waive any informalities or defects in bids, or to accept a higher cost bid if it is deemed to be in the best interest of the City of Bangor. The City also reserves the right to negotiate with the lowest responsive Bidder.

X. Information for Bidders

1. After most sections in this Request for Bids, a space is provided for the Bidder to answer whether they comply with the referenced section. Each bidder must declare at the end of each section of the specifications whether their bid complies with the requested specifications. If the bid does not comply, the exception form on the final page of this bid request must be completed. Failure to do so may result in disqualification of bid.
2. All bids must include a comprehensive list of any exceptions to the requested specifications for each component. If any unapproved exceptions are found in the delivered equipment, payment will be withheld until the exception is rectified.
3. Pages four (4) through eighteen (13) of this request must be completed and returned with all questions answered in order to be considered. This includes indicating whether or not you comply with each spec.
4. The entire units and all equipment must be thoroughly inspected, serviced and ready for use upon delivery to Fleet Maintenance at the time stated on the bid. To be accepted, all work performed must meet established industry standards of quality. Any unacceptable work must be corrected before the City will issue payment.
5. The City and the successful Bidder must meet prior to ordering any equipment in order to ensure that all proposed specifications will be met. A second meeting will also be held after the completion of the first truck prior to delivery in order to ensure that the equipment meets all specifications. Meetings will be held at the successful Bidder's location.
6. All Federal and State taxes must be excluded from the bid price. A tax exemption certificate for the City of Bangor shall be furnished to the successful Bidder upon request.

Vendor Name: _____

Catch Basin Cleaner

INTENT: The intent of this specification is to describe a fully hydraulically operated catch basin cleaning unit, Stetco 950 or equal, to be mounted on a new truck chassis of suitable size and specification. The catch basin cleaner must not weigh more than 3,900 lb.

Any and all deviations from specifications must be so noted on a separate sheet so named "exceptions". This sheet must be submitted along with bid proposal.

All steel used in catch basin cleaner shall meet or exceed ASTM A656 gr. 50. Certain components may be made from ASTM A656 gr. 80. All weldments shall be in accordance with ANSI/AWS O14.3 standards. Rotoblast stress relief/prep steel shot process shall be used on all plate and tubular material at the piece part level. Catch basin cleaner shall be designed with solid modeling design software to ensure proper tolerances and fit. Finite element analysis shall be employed with strain gauge testing to verify load and stress points on all structural components.

All applicable ANSI B30 standards shall be met as well as applicable ANSI standards or wire rope and components.

- 1. Base:** The base must be designed so it may be mounted in a space between the cab and body of not more than 36". The base itself shall have internal reinforcing plates manufactured of no less than .375" plate and welded in place for added strength. The base of the unit shall have a 3-point suspension design to absorb stresses from operation on uneven ground.
- 2. Rotation:** The boom shall swing hydraulically throughout not less than 370°. The swing assembly must be of the rack and pinion type equipped with two relief valves to protect the unit from damage due to overload. Heavy duty rack and pinion must function in presence of contamination such as sand and salt. Ball or roller bearing rotation system is **NOT** acceptable. The swing assembly must be located at the base of the unit to enable the operator to have an unobstructed visibility for safe operation and to keep the center of weight low for good stability. A grease manifold shall be located on the driver's side of base to facilitate complete lubrication of base rotation systems.
- 3. Mast:** The main mast and boom assemblies shall rotate as a unit in socket with a single 12"x 7" bronze bushing affording approximately 260 sq. in. of bearing surface for extended long life and stability. The mast must be centrally located on the truck chassis to assure equal boom reach on both sides of the truck and also to assure proper and equal weight distribution. The mast must be manufactured of two .750" side plates and one 0.5" end plate and welded together. Both operating stations must be visible to an operator on either side of the chassis for safe operation.

- 4. Boom Assembly and Extender Cylinder:** The boom must be of the telescoping type (articulating type not acceptable), not less than 13' in length, including main boom with jib extended. The main boom must be manufactured of not less than 8"x6" x.250" rectangular stock. The jib extender section must extend and retract hydraulically from approximately 8' to 13' by means of a double acting cylinder assembly. This cylinder assembly must be located externally for ease of service and to permit the addition of manual boom extensions at the end of the boom a bronze bushed pivoting front piece must be furnished to prevent excessive cable wear and sharp bends in cable itself. A 4' manual boom extension shall be furnished.
- 5. Winch:** A hydraulic planetary winch shall be mounted as an integral part of the main boom reinforcing side plates at the heel of the rear boom to provide protection from overhead obstructions. It shall be of cantilever design to prevent possible binding. The winch must be equipped with a hydraulically released spring applied brake and counter-balance valve for fail safe operation. At a lifting speed of approximately 200 FPM the winch shall have a single line lifting capacity of no less than 1800 lbs. There shall be no less than 125' of .375" of spin resistant cable on the winch drum and a full steel winch drum cover for operator safety and protection.
- 6. Hose Reels:** Two hose reels, each containing not less than 55' of 1/2" I.D. two wire braid rubber covered hose with wear cuff. Drip-less .1/2" quick disconnect fittings shall also be supplied. The hose reels must be capable of providing operation of not less than 35' below ground level.
- 7. Cylinders:** The main lift cylinder must be no less than 5" in diameter and equipped with safety valves to prevent the boom and load from dropping suddenly in the event of hydraulic line failure. The rod cylinder ends of the main lift assembly must be equipped with self-aligning ball bushings to prevent excessive side loading of the piston and gland nut. All cylinders must have a minimum wall thickness of .250". All piston rods must have a hard-chrome polished finish and O-ring and wear ring seals to assure long life and prevent sudden failure. Each cylinder rod must be equipped with a scrapper-wiper to prevent foreign matter from entering the cylinder assembly. The I.D. of the cylinders must be honed and the hydraulic seals must be capable of withstanding pressures of not less than 5,000 PSI.
- 8. Controls:** Two sets of separate levers for identical operation of sectional control valves for each individual unit function such as the winch, main boom, extender section, dump body, swing, and bucket operation must be provided. These controls must be vertically arranged and within easy reach of the operator for comfortable and safe operation. The control valve must be of open-center design and have built-in safety by-pass valves to limit the pressure for lifting, swinging, extender, etc. and a separate by-pass valve to limit the pressure for opening and closing the bucket. The control valve must be suitable for pressures up to 2,500 PSI and not less than 14 GPM oil flow. The sectional control valves must be designed so that two functions can be operated simultaneously, without any appreciable loss in power or speed, such as bucket and

winch-"squeeze & lift".

9. Reservoir and Filtration: A 37- 40 gallon oil tank manufactured of not less than 12 gauge hot rolled steel shall be furnished and installed. The tank shall have a baffle between the suction and the discharge ports to prevent the by-passing of oil and to produce a good cooling effect. The tank shall have a minimum of 5 ½" diameter clean out opening that will also house a 10 micron immersed return filter with 25 PSI bypass. The tank shall also come equipped with a ½ *tum* filler breather cap and wire basket strainer, a sight level gauge and a magnetic drain plug with sump in the bottom of the tank.

11. Bucket: The bucket for the catch basin cleaning unit shall be of the double acting orange peel type. Bucket must be so constructed that the opening motion, not exceeding 63°, will cause full discharge of material. All bushings to be hardened steel and all the pins to be a minimum of .625" in diameter. The construction of the bucket must be of an open design to minimize weight and to assure optimum upright stability. Blades shall be die stamped, not step formed or cast. The following bucket shall be furnished:

Closed outside dimension: 15"
Maximum blade opening: 36"
Closed height: 48"
Open height: 44"
Capacity: 1.3 cu.ft.
Weight: 265 lbs.

12. Body Dumping Safety Device: A mechanical-hydraulic body dumping safety device must be furnished and installed that will prevent body dumping until after the boom has been swung approximately 90 degrees to either side of the vehicle or over the front of the truck chassis.

13. Boom-Up Alarm: A red light must glow in the dashboard when the unit boom is elevated above a safe travel height of approximately 12 feet above ground level.

14. Loader Capacity: The unit must have the following capacities (when boom itself is used for lifting):

5' Radius 8,260 lbs.
10' Radius 4,130 lbs.
13' Radius 2,850 lbs.

15. Performance: At a maximum of 1,200 RPM the unit must be able to safely perform one (1) cycle in a period of time not to exceed 25 seconds. One cycle shall consist of the following functions:

A. Lifting an open bucket from inside the dump body to a minimum height of approximately 9' above the ground.

- B. Closing the bucket.
- C. Swinging the boom not less than 45 degrees from the center line of the unit.
- D. Lowering the bucket to ground level.
- E. Opening and closing bucket 2 to 3 times to simulate loading of bucket.
- F. Raising the bucket back to approximately 9' above the ground.
- G. Swinging the boom back over the center of the body.
- H. Lowering the bucket to 2' above the body.
- I. Opening the bucket to simulate discharge of material from the bucket.
- J. Setting the open bucket in the original starting position within the body.

16. Paint: Stetco 950 painted choice of single stage Imron color.

17. Removability: Stetco 950 shall be installed with provision for annual dismounting, including appropriate quick connect fittings and electrical connections. A lifting eye on top of boom shall be provided to facilitate handling.

Meets Spec. Yes_____ No _____

Specifications for Reversing Plow, Wing Assembly, Body and Hydraulics

Plow Equipment: Shall be a power reversing trip edge snow plow with polymer moldboard.

1. Cutting width: 11 ft. @ 0° and 9'6" @ 30°;
2. Overall width: No greater than 11 ft.;
3. Cutting edge shall have an option to be one or more trip edges;
4. There shall be two (2) moldboard shoes and two (2) curb shoes;
5. Shall be one turn adjustable crank jack;
6. The moldboard shall not be less than 39" in height and shall be made of new polymer material (not recycled). It shall be color impregnated to an orange color;
7. There shall be a rubber deflector mounted at the top of the blade, minimum 8 inches;
8. The reversing shall be achieved with two (2) double acting cylinders. These cylinders shall have nitrated rods and must carry a minimum three (3) year warranty. A cushion valve must be built into these cylinders for protection;
9. The plow shall be a standard design, no dealer modifications;
10. All cutting edges shall be 12" standard punch, 5/8" x 8" center punch; and
11. Both cutting edges shall be carbide steel backed with a steel edge.

Meets Spec. Yes_____ No _____

Front Hitch

1. The front hitch shall be power tilting by the plow lift cylinder;

2. Hitch must be fully removable with pins;
3. 31" plow pin centers with three (3) adjustable setting heights;
4. Four (4) 1-1/4" diameter pins attaching hitch to truck;
5. Unit shall have a 48" front hydraulic wing post, bolted to frame;
6. Control valve to powertilt must be external, mounted at LF corner of hitch; and
7. Front upright supports must be constructed from 1/4" tubing.

Meets Spec. Yes_____ No _____

Patrol Wing Unit

1. Under slung hydraulic wing lift, low profile front post with cylinder. Unit shall be low mount patrol type with fixed bracket and weldment on rear;
2. Overall length shall be 11 ft. with two (2) 120" x 8" x 5/8" reversible cutting edges;
3. Front height shall be a minimum of 32" at opening and a minimum of 38" at the rear;
4. Wing shall trip by means of a front trip block, using a rubber "timbren" bushing, allowing the wing to trip upward and forward when an obstacle is encountered, approximately 30°;
5. Two (2) moldboard shoes are required;
6. Rear of wing shall incorporate an integral float;
7. Moldboard skin shall be 3/16" steel;
8. Wing's rear sliding support shall have a removable pin to allow for detaching the rear slide hydraulically by use of the rear lift cylinder;
9. The three point attachment shall have a rollaway cart to allow the attachment to stand when detached; heavy duty design mandatory.
10. Wing must have the ability to be held up to prevent falling from the upright position. All necessary equipment must accompany the completed truck;
11. The wing end of the push arms shall mount into a mechanical float system;
12. There shall be a work light mounted so as to see the rear of the wing; and
13. The wing push arms shall be mechanically restricted so as to not allow the wing the capability of striking the cab mirror or door, and adjustable in length to provide varied clearing path widths.

Meets Spec. Yes_____ No _____

Dump Body

1. Shall be a dump body 10 feet long, minimum 84" wide and water tight. 30" side and 32" end height.
2. Hold approximately 7 cubic yards at minimum and have a tailgate sealed by a gasket.

3. The body shall be fabricated using 201 Stainless steel 7 gauge sheet, having a crossmember frame style.
4. The floor of the body shall be ¼ AR400 plate” and have a full perimeter Splash shield, so as to minimize splashing and loss of wet material.
5. Shall have rear corner-post and rear apron fabricated with stainless with light cutouts.
6. A fold down ladder shall be provided and located at the outside on the left front side of the body with a shovel holder on the left front corner;
7. The tailgate shall have an air trip release mechanism with heavy duty spreader chains and pin type plates to secure tailgate.
A “body up” warning light must be mounted in dash;
8. Control valve mounted with plow controls;
9. An OSHA approved safety prop rod shall be mounted;
10. Shall be a Class 50 underbody hoist with OSHA safety prop
11. Two sets separate levers for identical operation of sectional control valve for body hoist, located on both sides of body.
12. All lights mounted either on or in the body must be LED type lights. There shall be four (4) strobe lights, stop, tail, turn and back up lights mounted in the rear corner posts of the body.
13. All grease fittings needed for body and hoist shall be in a central location.

Meets Spec. Yes_____ No _____

Hydraulics System: This system will be used to operate a plow and wing assembly and a dump body.

1. PTO mounted hydraulic pump mounted to an Allison 3000RDS Automatic transmission with a “hot-shift” PTO so it may be engaged with truck moving with “engaged” light on dash.
2. The hydraulic tank capacity shall be 40 gallons and be equipped with a sight gauge, spin-on hydraulic filter, and a swing valve shut-off in both inlet and outlet lines. A return manifold is preferred in place of a series of pipe fittings connected directly to the tank. The tank shall be mounted on the truck frame so it can be both filled and drained easily. The tank shall have an electric low oil level indicator, as well as an in tank heater.

Meets Spec. Yes_____ No _____

Hydraulic Valving:

1. Central hydraulic system valving shall be the mobile design to withstand exposure to anti/deicing chemicals and severe weather conditions. It shall be cast iron construction, horizontally stackable and serviceable without disassembly and mounted in a weather tight enclosure;
2. Each section must have a built-in flow and pressure compensator to allow simultaneous operation regardless of any other system function;

3. These valves must be cable controlled type. All valving shall be mounted in one main valve assembly in a weather tight enclosure;
4. The operator controls shall be stainless steel, ball bearing sealed cables of the highest quality;
5. The hydraulic system shall be plumbed using stainless steel piping to both the front and rear of the chassis. Short pieces of hosing shall be utilized at junction points. All pins shall be secured by use of padded brackets and shock mount clamps;
6. All hoses will have male pipe thread connections on both ends. The attachment points will have a female swivel fitting;
7. **All removable attachments shall have hydraulic couplers (4000 series Parker, "AG" style). A drain manifold shall be utilized at each quick coupler point to relieve hydraulic pressure during coupling Operations;**
8. There shall be a front remote to operate the lift cylinder on the front hitch and two rear post remotes to operate the rear post slide and wing arms.

Meets Spec. Yes____ No ____

Pintle Hitch and Trailer Hook Up

1. 24 ton swivel style pintle hitch, centerline mounted - approximately 29 inches above level ground. Mounted on a plate with D-rings;
2. Trailer connectors shall hook to the air brake system provided by the chassis manufacturer and be connected with glad hand connections; and
3. Electrical connector for trailer shall be a seven wire Pollack connector.

Meets Spec. Yes____ No ____

Lights and Wiring

1. All emergency lighting and plow lights must be operable from a main control panel and be protected by circuit breakers;
2. Emergency lighting shall consist of: (all lighting shall be Federal Signal numbers):
 - a. Two (2) – No. 212650-02 Pulsator LED Beacon, mounted on each mirror;
 - b. Four (4) – No. 607101-02 Oval LED heads 2 each side rear corners of body;
 - c. Two (2) – No. 607105-04 Signaltech – Stop/Turn/Tail;
 - d. Two (2) – Clear LED Back up lights; and
 - e. All body lights must be round LED lights
 - f. Two (2), one each side for LED work lights for Catch basin cleaner
3. All wiring shall be color coded;
4. All wiring shall be in an easily replaceable wiring harness and a jacketed wire cable must be used whenever possible;

5. All wiring must terminate in a weather tight junction box with each terminal clearly marked;
6. All exterior light terminals must be heat sealed or use Deutsch connectors;
7. All wiring must be protected by circuit breakers;
8. Any switches used in the cab must be clearly marked and backlit;
9. All wiring must be protected by wire loom or conduit supported with ties or clamps every 12 inches;
10. A complete wiring diagram of all work done by successful Bidder must be supplied;
11. All clearance lights mounted in body shall be LED lamps and recessed mounted; and
12. All wiring up into cab must be neatly supported off the floor.

Meets Spec. Yes_____ No _____

General

1. Minimum two – coat, rustproof LEAD-FREE primer throughout;
2. Finish coat LEAD-FREE paint to match color of truck;
3. Parts and repair manuals for each component must be provided. Including wiring performed by the vendor for each piece of equipment; as well as hydraulic piping; and
4. Any computer related hardware or software available for any component shall accompany this unit (price included).

Meets Spec. Yes_____ No _____

Warranty

1. The complete package shall have a minimum two (2) year parts and labor warranty;
2. Specific manufacturer warranties will be executed and provided at delivery; and
3. All hydraulic cylinders shall carry a two (2) year warranty except hoist cylinder, which may be two (2) years.

Meets Spec. Yes_____ No _____

Installation

1. All components listed shall be installed on the chassis provided. Installation shall be consistent with all Federal, State and local regulations, and guidelines;
2. All systems shall be checked after installation and a checklist shall be provided at time of delivery;
3. The completed vehicle shall be delivered FOB Destination to the City of Bangor, Fleet Maintenance Department, 481 Maine Ave. Bangor, ME 04401.

Meets Spec. Yes_____ No _____

Training

There will be training for both Operators from the Public Works and Fleet Services as well as training for Technicians from Fleet Services for maintenance and safety repairs of both units. This training may have to be performed for both Day and Night Shifts at Fleet Services.

Meets Spec. Yes____ No ____

ON BOARD GREASE SYSTEM:

1. Timken – Interlube AC-3 onboard grease system
2. To be designed at a later date, to include all systems.

Meets Spec. Yes____ No ____



Bid Form
Plow Equipment and Truck Bodies
Bid No.: B16-001

Bid Deadline:
2:00 PM, Wednesday
July 22, 2015

Note: Equipment must be bid by using this bid form and the exception form on the following page. Failure to do so may result in disqualification.

Please note manufacturer, model, and year manufactured for each major component of the proposed equipment. Please attach brochures for the proposed equipment.

<u>Item</u>	<u>Description</u>	<u>Qty.</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total Price</u>
Plow Equipment & Truck Bodies		2	Ea	\$ _____	\$ _____
	Plow: _____				
	Body: _____				
	Hydraulics: _____				
	Catch Basin Cleaner: _____				
	Onboard Grease system: _____				
Total Bid Amount:					\$ _____

Does the proposed equipment meet the requested specifications? Yes No

Was the Bidder present at pre-bid meeting? Yes No

Address where equipment will be serviced: _____

Please list a detailed explanation for each exception to the requested specifications on last page of this request. Attach additional sheets, if needed.

Vendor: _____ Signature: _____

Print Name: _____ Title: _____

Address: _____ City, State, Zip: _____

Phone: _____ Fax: _____

Email Address: _____

Receipt of the following Addenda to this request is herein acknowledged:

Addendum No. _____ Dated _____ Signature _____

**Exceptions and Deviations
(list by category)**

Plow Equipment: _____

Dump Body: _____

Hydraulic System: _____

Hitch, Lights, Wiring, General, Warranty and Installation: _____

Catch Basin Cleaner:

