

**City of Waterville  
DEPARTMENT OF PUBLIC WORKS  
6 Wentworth Court  
Waterville, Maine 04901-4892**

**TEL (207) 877-7530 FAX (207) 877-7532**

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**REQUEST FOR BIDS  
Mechanical Street Sweeper**

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**DATE: July 12, 2011**

**INSTRUCTIONS TO BIDDERS**

- 1. GENERAL:** The City of Waterville is accepting bids for a Mechanical Street Sweeper meeting the specifications accompanying this document.
- 2. BID SUBMITTAL:** Sealed bids will be accepted by the Office of the Director of Public Works, 6 Wentworth Court, Waterville, Maine 04901 up to and including 10:00 A.M. local time, July 28, 2011 at which time they will be publicly opened and read. All bids will be placed in a sealed envelope clearly marked "Bid – Mechanical Street Sweeper" in the center with the bidder's name and address in the upper left hand corner. Bids not dated and time stamped by the Office of the Director of Public Works prior to the specified date and time stated above will be returned unopened. *Facsimile bids* will only be accepted by arrangement with the Office of the Director of Public Works. *Arrangements may be made by contacting Frederick Dechaine at (207) 680-4746 or by faxing him directly at (207) 877-7532.*
- 3. WITHDRAWAL OR REVISION OF BID:** A bidder may withdraw or revise a bid after it has been received by the Office of the Director of Public Works, provided the request is made in writing or in person before the time set for bid opening.
- 4. BID AWARD:** Bid award, if the City determines to award, will be made within thirty (30) calendar days after bid opening, to the lowest responsible bidder whose bid fully complies with all the requirements specified contingent upon approval by the City Council. The City reserves the right to reject any and/or all bids without absorbing any liability against the City.
- 5. Evaluation of Bids:** For purposes of evaluating the bids, in the event of any discrepancies on a proposal between an amount written out in words verses the same amount expressed in numbers, the amount written in words shall govern (if applicable). Similarly, unit prices shall prevail over extended totals. In the event of Additive Bid Items, the "low bid" shall be based upon the least total for the highest combination of bid items which may be awarded within the Control Amount.

**SPECIFICATIONS**  
**Mechanical Street Sweeper**

The sweeper to be furnished under this proposal shall be a three or four wheel mechanical type, front wheel steer, single engine, high dump hopper, full hydrostatic drive, 5.6 cubic yard hopper capacity with dual gutter broom system. It shall be the manufacturer's latest model and design.

Current model demonstrators, that meet specifications, will be considered. Demonstrators being bid must have less than 100 hours of operation. These specifications shall be regarded as MINIMUM. Bidders must furnish all descriptive literature, manufacturer's compliance certificates and all other necessary data on the equipment proposed as required in the specification. Bidder must answer **YES** or **NO** to each specification line item except where asked to state specific data. Failure to answer correctly, or failure to respond will deem your bid as non-responsive. All line items with a "**NO**" response, shall be explained in detail on the "Exceptions to Bid Specification" pages provided at the end of this document.

(This specification contains twenty-seven bid components)

<b>1. HOPPER</b>	<b>YES / NO</b>
1.1 Hopper capacity shall be 5.6 cubic yards.	_____
1.2 Hopper shall have a lifting capacity of 12,000 lbs.	_____
1.3 Hopper rear and side panels shall be constructed of 12 GA. ribbed steel for strength and the floor and front aperture to elevator panels shall be constructed of grade 304 stainless steel	_____
1.4 Hopper dump system shall have a safety lockout system to prevent any forward or reverse movement of the sweeper with hopper in the raised position.	_____
1.5 Hopper shall be raised and lowered by means of two 4" diameter hydraulic cylinders.	_____
1.6 Hopper shall have a load discharge door which will open automatically when hopper is being raised and close automatically when hopper is being lowered.	_____
1.7 Hopper dump control shall be by means of a single cab dash mounted rocker switch.	_____
1.8 A seal shall be provided between the hopper and the elevator	_____

to prevent dirt and dust emission.

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**1.9** Hopper shall be a high dumping type, 114” minimum.

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**2. CAB**

**2.1** Cab shall be fully enclosed and of all steel construction.

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**2.2** Cab shall be mounted front and center of sweeper for safety and unobstructed, panoramic, operator vision.

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**2.3** Cab shall be attached to chassis frame by means of rubber mounts.

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**2.4** Cab shall be dust and weather sealed and be equipped with factory installed air conditioning, heater and defroster.

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**2.5** Grab handles shall be supplied on the front of the cab.

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**2.6** Cab interior shall be sound suppressed and insulated with an in cab noise level not exceeding 82 dBA.

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**2.7** Cab shall be furnished with two seats, one being the primary operator’s station and the other for the purpose of operator training.

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**2.8** Operator’s seat shall be single bucket suspension type with cloth upholstery, dual arm rests, and shock absorbers.

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**2.9** Both operator’s seat and “buddy” seat shall have three point safety seat belts with shoulder and lap harnesses.

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**2.10** For operator safety and comfort, the front of seat to the front wall of cab shall be a minimum of 23”, maximum 31”.

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**2.11** For operator safety and comfort, the cab rear wall to cab front wall shall be a minimum of 56 ½”.

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**2.12** For operator safety and comfort, the back seat to center line of steering column shall be a minimum of 17”, maximum 31”.

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**2.13** Cab shall have a single lever operated tilt and telescoping steering wheel.

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**2.14** Cab shall have sliding windows on both right and left sides.

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**2.15** Cab shall have adequate storage space for driver’s tool kit,

lunch box, hard hat, coffee cup, coat etc. \_\_\_\_\_

**2.16** Cab shall have dual west coast mirrors with extended frames and 12" convex sweeping mirrors on both sides. Sweepers that require a seat change during operation, must have remote power adjustable mirrors. \_\_\_\_\_

**2.17** Cab shall have tinted safety glass throughout and a single full width tinted sun visor. \_\_\_\_\_

**2.18** Cab shall be furnished with a full width interior ceiling shelf to accommodate a radio, documents and other equipment. \_\_\_\_\_

### **3. ENGINE**

**3.1** Sweeper shall be powered by a single John Deere 4045T, or equivalent, 4-cylinder, turbo charged four cycle diesel engine with a minimum horsepower rating of 115 HP @ 2500 engine RPM. Cubic inch displacement shall be 276 CID and net torque rating of 274 ft. lbs. at 1400 RPM or equal. All sweeper functions and drive systems shall be powered by this engine. \_\_\_\_\_

**3.2** Engine shall have a two stage dry type air cleaner with safety element and restriction indicator. Plus TURBO II pre-cleaner or equal. \_\_\_\_\_

**3.3** Engine shall be water cooled by aid of a radiator of swing-away design. \_\_\_\_\_

**3.4** Antifreeze protection for engine shall be not less than minus 34 degrees Fahrenheit. \_\_\_\_\_

**3.5** Engine shall automatically shut down and dispose itself from re-starting if any attempt is made to unlatch radiator away from its locked position. \_\_\_\_\_

**3.6** Engine shall be protected against damage by means of an anti-crank device which will prevent re-engagement of starter while the engine is running. \_\_\_\_\_

**3.7** Engine shall be fitted with a pusher fan with special "ejector" blades for centrifugal ejection of ambient dust particles from the engine compartment \_\_\_\_\_

#### **4. TRACTION SYSTEM**

**4.1** Traction system shall be fully hydrostatic and capable of variable speeds up to 23 MPH.

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**4.2** Direction and speed selection shall be controlled by means of a dash mounted four position quadrant shifter and vernier throttle control with integral quick release feature .

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**4.3** Engine mounted traction pump shall be variable displacement axial piston type.

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**4.4** Broom and elevator speed shall be independent of vehicle speed

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**4.5** The traction drive system shall be capable of being shifted from "LOW" to "HIGH" while the sweeper is in motion.

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**4.6** The traction pump and motors shall be relief valve protected.

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**4.7** Operational road speed control shall be by means of a single automotive type foot pedal.

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**4.8** The traction system shall provide braking assistance when control pedal is released.

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**4.9** The rear wheel motor and torque hub drive system shall be a carrier beam type with rubber spring and torque rod suspension.

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#### **5. ELEVATOR**

**5.1** Preferred elevator shall be 11 flight configuration with continuously molded rubber belts and replaceable corded rubber squeegee tips.

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**5.2** Elevator sprockets shall be of split flange type to enable replacement without having to remove belts and shafts.

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**5.3** Elevator sprockets shall have hardened teeth for longevity.

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**5.4** Elevator flight bars shall be constructed of 2" x 1/2" aluminum angle.

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**5.5** Elevator speed shall be variable and reversible.

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**5.6** Elevator belt shafts shall be of split design to facilitate easy belt replacement.

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**5.7** Elevator motor drive shall be direct hydraulic (no chain or sprockets) with relief cartridge protection.

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**5.8** Elevator shall have an adjustable floor and deflector system to ensure even hopper loading and prevent back spilling.

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## **6. HYDRAULIC SYSTEM**

**6.1** Hydraulic oil reservoir system shall consist of two frame mounted tower tanks, each with an oil capacity of 18 gallons. The residual oil capacity shall be an additional 5 gallons for a total system capacity of 41 gallons.

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**6.2** To provide dependable performance and reduce maintenance costs, the hydraulic system **MUST** include the following filtration elements:

**6.2.(1)** A 40 micron tank fill neck strainer in each tank

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**6.2.(2)** Each tank **MUST** have its own suction strainer rated at a minimum 100 mesh.

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**6.2.(3)** A suction filter with restriction gauge **MUST** be supplied with a minimum rating of 10 microns.

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**6.2.(4)** A high pressure filter complete with restriction status indicator shall be supplied.

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**6.2.(5)** A water / hydraulic oil separator / filter shall be installed in the return circuit.

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**6.3** Each hydraulic tank shall be provided with a 5 psi. pressurized fill cap.

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**6.4** Each hydraulic tank shall have rear mounted, accessible drain plugs.

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**6.5** Hydraulic manifolds, valves and solenoids shall be mounted in a separate dedicated, enclosed compartment, for protection and ease of access.

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**7. PICKUP BROOM**

7.1 Pickup broom shall be 32" diameter and 58" long minimum. \_\_\_\_\_

7.2 Pickup broom drive shall be direct hydraulic, variable speed with relief valve protection \_\_\_\_\_

7.3 Pickup broom shall be hydraulically raised and lowered by a single, in cab dash mounted rocker switch \_\_\_\_\_

7.4 Pickup broom shall be self adjusting for pressure and wear \_\_\_\_\_

7.5 Pickup broom motor shall have a shaft and seal protection device which will prevent the ingress of damaging wire, cassette tape, fishing line, etc. \_\_\_\_\_

**8. GUTTER BROOMS**

8.1 Gutter brooms (right & left sides) shall be a minimum of 47" in diameter and each shall contain twelve snap-in "Tuff Grip" disposable steel tine segments. \_\_\_\_\_

8.2 Gutter broom drive shall be completely hydraulic and relief valve protected. \_\_\_\_\_

8.3 Gutter brooms shall be hydraulically lowered and raised by means of an in-cab, dash mounted rocker switch \_\_\_\_\_

8.4 Provisions shall be made for gutter broom pressure adjustment by means of independent dash mounted switch gauges. \_\_\_\_\_

8.5 Gutter brooms shall be free floating both horizontally and vertically and shall be impact protected \_\_\_\_\_

8.6 Gutter broom curb angle adjustment shall be by simple multi hole and anchor pin arrangement. Adjustment shall be "wrench free". \_\_\_\_\_

8.7 Gutter broom support towers shall have adjustable travel "stop" mechanisms to limit inward travel of gutter brooms \_\_\_\_\_

8.8 Gutter broom motors shall have a shaft and seal protection device which will prevent the ingress of damaging wire, cassette tape, fishing line, etc. \_\_\_\_\_

**9. WATER SYSTEM**

9.1 Water tank capacity shall be 220 gallons minimum \_\_\_\_\_

9.2 Water tank shall be constructed of cross-linked corrosion proof material. \_\_\_\_\_

9.3 A low water indicator shall be dash mounted in cab \_\_\_\_\_

9.4 Individual, adjustable, variable flow, water delivery valves shall be installed in the sweeper cab to allow operator to control water sprays over main broom and both gutter brooms \_\_\_\_\_

9.5 Twin electric diaphragm pumps with total output rating of 4 gallons per minute @ 35 PSI shall be supplied. \_\_\_\_\_

9.6 An in line 20 mesh screen type filter shall be installed in an accessible area and shall be capable of being checked, cleaned or changed without the use of tools \_\_\_\_\_

9.7 A 15' hydrant hose, coupler and wrench shall be supplied. \_\_\_\_\_

9.8 A high/low water flow switch shall be installed in the cab for additional water flow control \_\_\_\_\_

**10. FUEL SYSTEM**

10.1 Vehicle fuel system must include a 35 gallon diesel fuel tank.(minimum) \_\_\_\_\_

10.2 Fuel system must incorporate a fuel and water separator with built in primary fuel filter \_\_\_\_\_

**11. DIRT SHOES**

11.1 Dirt shoes shall be of parallel arm design, polyethylene construction and be capable of floating over uneven surfaces, railroad tracks, raised manhole covers, etc. \_\_\_\_\_

**12. BRAKES**

12.1 Service brakes shall be internal expanding shoe and drum type on rear wheels. \_\_\_\_\_

12.2 Parking brake shall be mechanically applied and hydraulically released internal expanding type \_\_\_\_\_

12.3 Parking brake shall be automatically applied when sweeper is placed in "PARK" position

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12.4 Brake master cylinder shall have an auxiliary boost feature

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12.5 Standard braking system shall be assisted by vehicle's inherent dynamic braking when control pedal ("GO" Pedal) is released

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### 13. STEERING

13.1 Steering shall be hydrostatic type, by means of an engine driven gear pump through a hydraulic cylinder and shall be capable of operation in the event of engine shutdown

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### 14. FRONT (STEERING) AXLE / SPINDLE

14.1 Front axle assembly shall be spindle type, with dual wheels and tires.

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14.2 Front axle configuration shall be such that the standard front steering road wheels shall be not be closer than 40 inches to the curb line when sweeping, to avoid tire damage from broken bottles and other sharp debris.

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### 15. FRAME

15.1 Frame shall be constructed of 4 gauge, high strength low alloy steel (ASTM 607 or equivalent) with an RBM rating of 863,700 inch pounds and a minimum yield strength of not less than 50,000 psi

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15.2 Frame shall be 13" x 3" 'C' section channel

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15.3 Frame shall incorporate front tow points.

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15.4 A tool/storage compartment shall be built into right rear fender

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15.5 Frame attached gutter broom towers shall have reinforced cut outs to enable access to lower elevator bearings for ease of maintenance

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### 16. ELECTRICAL SYSTEM 12 VOLT

16.1 Battery shall be maintenance free and rated at 900 CCA

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**16.2** A heavy duty 120 amp dust shielded alternator shall be supplied \_\_\_\_\_

**16.3** All electrical connections shall be sealed and heat shrunk with epoxy resin connectors. No-splice wiring between connectors. \_\_\_\_\_

**16.4** A sealed electrical systems locker shall be provided to house all controlling electrical components and protect them from exposure to dirt, moisture, and inclement weather \_\_\_\_\_

**16.5** The system locker shall comprise of a sealed compartment to house both high amperage and low amperage components \_\_\_\_\_

**16.6** All components within the locker shall be easily replaceable with minimum effort \_\_\_\_\_

**16.7** All rocker switches in cab shall be sealed, back lit, and function identified \_\_\_\_\_

**16.8** All electrical system diodes shall be located within the systems locker \_\_\_\_\_

**16.9** A laminated electrical control unit diagram shall be attached to systems locker door for instant easy reference during troubleshooting or repair procedures \_\_\_\_\_

**16.10** Two sealed beam headlights with in-dash high beam indicator shall be standard \_\_\_\_\_

**16.11** Two speed windshield wiper shall be provided \_\_\_\_\_

**16.12** Sweeper shall be supplied with dual LED stop and tail light combinations, dual gutter broom lights, rear license plate light and bracket, back up lights and reflectors, self canceling turn signals with hazard flashers, electrical back up alarm (107 dBA minimum) and hopper dump alarm (107 dBA minimum). \_\_\_\_\_

**16.13** Solenoids for hydraulic manifolds shall be enclosed in rear fender compartment for protection and easy access. \_\_\_\_\_

**16.14** All electrical wiring shall be solid colored, numbered and function coded every 12 "for quick, easy identification purposes \_\_\_\_\_

**17 SWEEPER BODY**

**17.1** Sweeper body shall have hinged, swing out single latched

side panels for simple, easy access to elevator, fuel tank fill and water manifold components

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**17.2** Rear radiator grille and engine cover shall have stainless steel hinges to enhance longevity and eliminate rust.

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**17.3** A heavy duty front bumper shall be supplied.

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**17.4** A rust and corrosion proof front grille shall be supplied.

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**17.5** A two step cab entry ladder with anti-slip, positive grip feature shall be supplied.

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## **18. WHEELS AND TIRES**

**18.1** Front rims shall be 6.75 HC, 10 hole heavy duty steel disc type with 10R 17.5 G load range radial tires.

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**18.2** Rear rims shall be disc type 8.25 X 22.5 with 11R 22.5 G load range radial tires.

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**18.3** Spare Front and Rear Wheel and Tire

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## **19. CAB DASH & INSTRUMENTS**

**19.1** An automotive style, anti glare, wrap-around dash with easily removable fascia and instrument panel shall be supplied

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**19.2** All dash mounted equipment including instruments, gauges, switches and display panels shall have extra length wires to permit lifting of dash for internal component access

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**19.3** Dash panel shall have a light emitting diode panel system which will monitor and provide an alert to the following systems: OIL PRESSURE, SWEEPER in PARK, RIGHT HYDRAULIC TANK LEVEL, LEFT HYDRAULIC TANK LEVEL, RIGHT AND LEFT TURN SIGNALS and HIGH BEAM INDICATOR. The panel shall also be capable of accommodating additional monitoring systems if required.

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**19.4** The dash board shall be of low cut design for completely unobstructed vision

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**19.5** The dash panel shall incorporate high flow adjustable side and windshield defrost vents

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**19.6** The side instrument panel shall accommodate all sweeping

functions, heating and air conditioning controls \_\_\_\_\_

**20. SWEEPER DIMENSIONS**

**20.1** Sweeper shall meet the following minimum requirements

**20.2** Wheel Base..... 116 in. \_\_\_\_\_

**20.3** Turning Radius (Not to exceed)..... 12.5 ft. \_\_\_\_\_

**20.4** Overall Length (Not to exceed)..... 214 in. \_\_\_\_\_

**20.5** Maximum Height (Not to exceed)..... 118 in. \_\_\_\_\_

**20.6** Maximum Width (Not to exceed)..... 98 in. \_\_\_\_\_

**20.7** Sweeping Swath..... 125 in. \_\_\_\_\_

**20.8** Maximum Weight/Empty..... 14,440 lbs \_\_\_\_\_

**21 PAINT**

**21.1** All sweeper components, including but not limited to, CAB, HOPPER, FRAME, ELEVATOR, BODY PANELS, ENGINE COVER PANELS, BODY FLOOR PANELS, GENERAL BRACKETRY, shall be individually 100% powder coated BEFORE VEHICLE ASSEMBLY to protect the machine from the adversities of weather and the ravages of sweeping environments \_\_\_\_\_

**21.2** Sweeper color shall be Factory Standard \_\_\_\_\_

**22. QUALITY**

**22.1** ALL fasteners above 1/4" in thread size shall be grade #8 or better. \_\_\_\_\_

**22.2** ALL critical fasteners shall be torqued to manufacturer's quality requirements and a special torque striping paste shall be applied as witness to this procedure \_\_\_\_\_

**22.3** ALL hydraulic hose pressure fittings shall be torqued to manufacturer's requirements and a special torque striping paste shall be applied as witness to this procedure \_\_\_\_\_

**22.4** The sweeper shall be manufactured by a company with an internationally recognized and registered quality system which shall meet or exceed I.S.O. 9001 standards \_\_\_\_\_

**23. WARRANTY**

**23.1** Sweeper shall carry a one year warranty covering 100% parts and labor with all repairs to be carried out at customer's location. \_\_\_\_\_





**REQUEST FOR BIDS  
Mechanical Street Sweeper**

**DATE:** \_\_\_\_\_

To the Director of Public Works for the City of Waterville, Maine:

Please accept this bid submission from

\_\_\_\_\_  
(hereinafter called "Bidder"), a corporation\* organized under the laws of the  
State of \_\_\_\_\_ or a partnership/individual\*\* doing business as:

\_\_\_\_\_  
This bid is being submitted for a **Mechanical Street Sweeper** in compliance with your  
invitation for bids, having examined the specifications and conditions contained therein.  
Alternatives/Substitutions are as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<b>Mechanical Street Sweeper (Yr of Mfr _____)</b>	<b>\$ _____</b>
<b>Trade-In Allowance: 1991 Elgin Pelican Street Sweeper</b>	<b>\$ _____</b>
<b>Bid Option #2 - With out Trade in Allowance</b>	<b>\$ _____</b>
<b>Extended Warranty: Provide Description Summary</b>	<b>\$ _____</b>

**\*\*Delivery Guaranteed within \_\_\_\_\_ days of contract award and not beyond ninety (90) days of contract award.**

**NAME OF BIDDER:** \_\_\_\_\_

**BY:** \_\_\_\_\_

(Signature)

**NAME AND TITLE:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**TAX ID#** \_\_\_\_\_

\* Affix seal if by Corporation

\*\*Cross out word/phrases that do not apply