

CITY OF SAULT STE. MARIE
REQUEST FOR PROPOSAL
STREET SWEEPER – STREET DEPARTMENT
B-46-23

The City of Sault Ste. Marie will receive sealed bids in the office of the City Clerk, City Hall - 225 East Portage Ave., Sault Ste. Marie, Michigan 49783, for a street sweeper.

Sealed bids will be publicly opened on **Thursday, October 19, 2023, at 3:00 PM** in the City Clerk's office.

To order bid documents or for questions regarding the bidding process please contact the City Clerk's Office at (906) 632-5715 or visit www.saultcity.com .

The City reserves the right to reject any and all bids and to waive irregularities in bids and to accept any bids which in the opinion of the City Commission may be most advantageous to the City of Sault Ste. Marie and in accordance with the City's "Award Process" and other bidding documents.

ROBIN R. TROYER MMC, DEPUTY CITY MANAGER

REQUEST FOR PROPOSAL
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1. **Sound Control** (Bidders MUST furnish compliance certificate)
- 1.1 The external sound pressure level shall be 79 dB(A) average at 16 meters per noise test code ISO 3746:1996, while the impeller fan is rotating at 3,400 RPM. _____
- 1.2 The In-Cab sound level shall not exceed 68 dB(A) max per noise test code ISO 3746:1996 while the impeller fan is rotating at 3,400 RPM in sweeping mode. _____
2. **Truck Cab & Chassis**
- 2.1. Chassis Make: _____
- 2.2. Chassis Model: _____
- 2.3. Sweeper Make: _____
- 2.4. Sweeper Model: _____

3. Vehicle Weight

- 3.1. GVWR: 33,000 lbs. minimum. _____
- 3.2. Wheelbase maximum 178 inches. _____
- 3.3. Cab shall be conventional type. _____
- 3.4. State G.V.W.R of chassis bid. _____
- 3.5. State empty weight of chassis bid. _____
- 3.6. State empty weight of sweep equipment. _____

4. Axles

- 4.1. Front axle shall be 12,000 lbs. minimum. _____
- 4.2. Rear axle shall be a two-speed Meritor RS-21-230, 21,000 lbs. Capacity with ratio of 5.86 / 8.17:1. _____
- 4.3. Front & Rear oil seals shall be provided. _____
- 4.4. Front & Rear dust shields shall be provided _____

5. Suspension

- 5.1. Front suspension shall be 12,000 lbs. minimum at ground load rating. _____
- 5.2. Front shock absorbers shall be supplied. _____
- 5.2. Rear suspension shall be 23,000 lbs. minimum with multi-leaf springs _____

6. Brake System – ABS

- 6.1. To ensure brake system performance, safety, and service life of chassis a WABCO 4S/4M ABS brake system will be supplied. _____
- 6.2. Front & Rear service brakes shall be “full air” “S” cam type. Front with 15”x4” and back with 16.5”x7” brake linings. _____
- 6.3. Automatic slack adjusters shall be supplied on the front and rear brakes. _____
- 6.4. Parking brake shall be spring set on rear axle and cab controlled. _____
- 6.5. Low air warning indicator shall be supplied. _____
- 6.6. To provide clean, dry air to the chassis brake system, increase life of and reduce maintenance costs, a Wabco SS 1200 Plus Brake Line Air dryer with heater will be provided. _____
- 6.7. A Cummins 18.7 CFM air compressor shall be supplied. _____

7. Steering

- 7.1. Complete OEM dual cross-over power steering system with complete dual gauges at each operator's position shall be furnished to permit operation from either side of cab. Steering wheels shall include tilt feature. _____
- 7.2. The following gauges and controls shall be furnished at the LEFT-SIDE operator's position: oil pressure gauge, water temperature gauge, tachometer voltage digital display, speedometer, odometer, dual air pressure gauges, transmission oil temperature gauge, fuel gauge, hour meter, DEF gauge, and centrally located ignition switch. _____
- 7.3. The following gauges and controls shall be furnished at the RIGHT-SIDE operator's position: oil pressure gauge, water temperature gauge, tachometer speedometer, dual air pressure gauges, transmission oil temperature gauge, fuel gauge, DEF gauge, and centrally located ignition switch. _____

8. Engine

- 8.1. Engine shall be a four-cycle diesel, turbo-charged and after-cooled. _____
- 8.2. Engine shall be rated at 200 H.P. @ 2400 RPM with 6.7 liters of displacement minimum. _____
- 8.3. Engine shall have a torque rating of 520 ft lbs. at 1,600 RPM. _____
- 8.4. Engine shall be water cooled with antifreeze protection to -34 degrees Fahrenheit. _____
- 8.5. Engine shall have vertical muffler and exhaust pipe and be equipped with a Diesel Particulate Filter & SCR system for current EPA emission requirements. _____
- 8.6. Integral electronic protection shutdown system for low oil pressure and high-water temperature. _____

9. Transmission

- 9.1. Transmission shall be an Allison 2500 Series automatic with return line filtration. _____
- 9.2. Transmission shall come installed with synthetic transmission fluid. _____

10. Engine Equipment

- 10.1. 12-volt alternator shall have a minimum of 160-amp output rating. _____
- 10.2. Two (2) batteries shall be maintenance free, Group 31 12-volt and each rated at 1,125 CCA (2,250 total) with an in-cab master battery disconnect. _____
- 10.3. A heavy-duty dry air cleaner with dash mounted in-cab restriction indicator with graduations shall be supplied. _____
- 10.4. A Horton HT650 frontal air on/off clutch engine fan shall be supplied with automatic controls. _____
- 10.5. A full-flow oil filter shall be supplied. _____

11. Cab

- 11.1. Cabs shall have two (2) air suspension fully adjustable bucket seats with approved seat belts. _____
- 11.2. Seats shall be high-back, air suspension with mechanical lumbar/integrated cushion extension. _____
- 11.3. Sun visors shall be supplied on both sides. _____
- 11.4. Door armrests shall be supplied on both sides. _____
- 11.5. Heater with full width defrosters, fresh air ducts and two-speed fan shall be supplied. _____
- 11.6. Dual, two speed electric intermittent windshield wipers with washers, operable from either side, shall be supplied. _____
- 11.7. Two (2) bright finish heated and remote West Coast type mirrors, 7" x 16" and 8" convex mirrors shall be supplied. _____
- 11.8. Two (2) 8-inch stainless steel fender mounted convex mirrors shall be supplied to allow a full view of sweeping equipment. _____
- 11.9. Factory A/C shall be supplied and mounted in a cab. _____
- 11.10. AM/FM/WB radio with Blue Tooth shall be supplied. _____
- 11.11. Two (2) independent accelerator pedals shall be installed in cab to facilitate operation from either side. _____
- 11.12. A full 'cross-over' system to change steering control, throttle, and all gauges, from left to right hand side and vice versa shall be supplied. _____
- 11.13. All cross-over functions shall be controlled by a single switch on the central console. This circuit shall be inter-locked to the parking brake and shall only be capable of being activated with the parking brake applied. _____
- 11.14. A backup camera shall be provided w/in-cab monitor. _____

12. Fuel Tank

- 12.1. A minimum 50-gallon fuel tank shall supply chassis engine. Tank shall be manufactured from aluminum and located under LH side of the cab. _____
- 12.2. SCR system tank shall be 6 gallons and located to the rear of the chassis fuel tank. _____

13. Lights

- 13.1. All lamps and reflectors shall comply with federal regulations. _____
- 13.2. Four-way hazard warning lights shall be supplied. _____
- 13.3. The following lights to be LED type: stop/tail/turn/back-up/marker. _____

13.4. An LED split arrow stick shall be included. _____

14. Frame

14.1. Heavy Duty frame with a minimum RBM of 1,015,000 lb/in. _____

14.2. Frame Section Modulus of 12.69 minimum. _____

14.3. The frame shall be tensile steel, 120,000 psi, minimum. _____

14.4. Front tow hooks shall be supplied. _____

14.5. Steel front & rear bumpers shall be supplied (front shall have flexible plastic ends). _____

14.6. A weight load indicator shall be installed on the frame. _____

15. Wheels & Tires

15.1. All wheel rims shall be disc type 22.5 X 8.25. _____

15.2. Tires: two (2) front and four (4) rear premium radial tires; type 11.00R 22.5-14 ply rated. _____

15.3. Rear tire sets to be protected by heavy-duty replaceable plastic fenders. _____

16. Warranty

16.1. The basic truck chassis & drive train shall be warranted by the manufacturer for two (2) years, unlimited miles unless otherwise specified. _____

SWEEPER

17. Power Pack

17.1. Power shall be supplied by a heavy-duty turbo charged industrial diesel engine and fuel supplied from a minimum 50-gallon molded high strength composite fuel tank. _____

17.2. The engine shall be a four cylinder, four-cycle, water cooled, and antifreeze protected to -40 degrees Fahrenheit. _____

17.3. The engine shall be 125HP, 4.5-liter (269 cubic inches) displacement with 295 ft-lb of torque @ 1250 RPM minimum. Lower HP engines will not be accepted due to power requirements. _____

17.4. The engine must conform minimally to EPA Tier 4 regulations. _____

17.5. The unit shall be capable of operating within a temperature range of -40 degrees to +126 degrees Fahrenheit with the manufacturer's full warranty approval. _____

17.6. Separate heavy duty, dry dual element air filtration with restriction indicator and Turbo III pre cleaner to be provided. _____

17.7. Fuel system will have a primary filter & sediment bowl as first stage filtration from the fuel tank. _____

- 17.8 All daily engine inspections of oil level, coolant level and air filter restriction to be checked and monitored from inside the cab. _____
- 17.9 Engine water pump shall be a direct drive to eliminate possibility of engine damage due to drive belt breakage. _____
- 17.10 A 12-volt 55-amp alternator shall be furnished. _____
- 17.11 High coolant temperature and low oil pressure shutdown system shall be supplied. _____
- 17.12 The engine shall be sound suppressed, and pod mounted in a low-profile tub with a bolt-on heavy duty cowling liner and seal for maximum sound attenuation. _____
- 17.13 The engine tub shall be separately mounted from the body and shall be capable of being removed from the entire sweeper framework by four (4) bolts. _____
- 17.14 To reduce vibration & sound, ONLY the engine, transmission and turbine shall be "live" mounted and free floating. _____
- 17.15 The engine compartment shall be completely sealed with a bolt-on sound suppressing liner of 1.25 inches thick to reduce noise levels and protect against dust contaminants. _____
- 17.16 The engine shall have four (4) remote fluid drains accessible from ground level for coolant, hydraulic oil, engine oil and gearbox oil to allow for easy and cleaner maintenance. _____
- 17.17 For greater corrosion protection the engine muffler and exhaust pipe must be stainless steel. _____
- 17.18 Auxiliary engine fuel consumption shall not exceed 5.04 GPH (gallons per hour) while producing a continuous impeller fan speed of 3,400 RPM. State GPH _____ GPH
- 17.19 Bidder shall state engine RPM required to generate an impeller fan speed of 3,400 RPM. _____ RPM
- 17.20 Throttle control of power output shall be adjusted by means of an electronic, infinitely variable actuator. _____
- 17.21 In-cab tachometer and hour meter shall be supplied. _____
- 17.22 Radiator shall have a sealed and dedicated air intake duct to ensure the air is the cleanest possible the air intake duct shall be located in the roof of sweeper cowling. _____
- 17.23 Both a keyless start with integral cold weather start aids and an anti-crank device to prevent re-engagement of starter while engine is running shall be furnished. _____
- 17.24 All sweeping controls shall be easily accessible to the operator from either side driving position. _____
- 17.25 Gutter Brooms, Nozzles and Main Broom controls are to be incorporated into a convenient door post mounted module with Joystick. _____
- 17.26 Warning lights shall be furnished for low oil pressure, high water temperature, low voltage, body weight limit, low hydraulic oil level and low sweeper water tank level. _____

17.27 All of the above controls in addition to the chassis engine ignition, parking brake control, and gutter broom speed control shall be conveniently mounted in-cab center or on door post. _____

18. Sweeper Hopper Body

- 18.1 The **entire** hopper body shall be fabricated from (9) gauge high content chromium stainless steel. All seams shall be continuously welded. To permit longer life and lower the cost of operation, the entire debris hopper, excluding inlet wear plates and exhaust screens, shall carry a **LIFETIME WARRANTY** as long as the customer owns the sweeper. The warranty shall include, but not be limited to, the floor, sides, roof, air tunnel and rear door. The warranty shall cover rust, corrosion, and abrasion perforation, including normal wear and tear. Vendors will be financially responsible for all repairs, parts, and labor, including protective coatings for the life of the sweeper. 100% parts and labor with no pro-rating or hour limitations. Vendors shall include with their bids, warranty statements from the manufacturer in complete compliance with the published warranty specifications. Failure to do so will deem your bid as non-responsive. Liner systems will NOT be considered an acceptable alternative. _____
- 18.2 Body volume capacity shall be not less than 8.5 cubic yards with payload capacity of not less than 7.5 cubic yards. _____
- 18.3 A hydraulically operated, fully sealed, full width, top hinged rear door with 6-inch-long rear discharge chute with side splash guards. _____
- 18.4 The door shall be opened, closed, and latched hydraulically. _____
- 18.5 To prevent damage to the door and door seal, when dumping, the door must open a minimum of 125 degrees. _____
- 18.6 The door cylinder shall incorporate a counterbalance valve to prevent accidental closing in the event of a hydraulic hose or cylinder failure. _____
- 18.7 To prevent physical injury, the sweeper hopper body prop shall automatically engage when the hopper is raised. The prop is to be the same width as the frame to provide full and even support. Disengagement of the hopper body safety prop is to be initiated by the use of the pendant control, not requiring the operator to reach under the raised hopper. _____
- 18.8 To prevent physical injury, the sweeper shall incorporate a warning beeper anytime the debris hopper or rear door is being raised or lowered. _____
- 18.9 To prevent physical injury due to unintentional operation, a master safety switch must be depressed and simultaneously held while the operator activates the controls to raise/lower the debris hopper or rear door. _____
- 18.10 For maximum abrasion resistance the body intake tube(s) shall be constructed of (10) gauge Corten Steel and have bolt-in seals. _____
- 18.11 To prevent the body from being stuck in the raised position, the raise/lower cylinder shall be power up and power down. _____
- 18.12 To ensure complete emptying of the debris hopper, the hopper discharge angle must be 55 degrees minimum. _____

- 18.13 The hopper body shall incorporate an inter-connecting transfer port to the water tank that will enable the machine to additionally function as either a water tanker or flusher with a total water capacity of 1,717 gallons. _____
- 18.14 Body intake tubes shall have “pre-drilled” equal distant mounting holes to permit quarter, half or three-quarter turn rotation for extended life and even wear compensation. _____
- 18.15 To permit cleaning of the rear screens, and placement of large objects in the hopper, two (2) heavy-duty inspection doors with heavy-duty lever lock handles and recessed seals that fit snugly over a raised flange on the body, providing a positive seal against leaking shall be provided on each side of the hopper with step and handle for operator safety. _____
- 18.16 The body shall have full width Stainless Steel mesh filter screens which are at least 60 inches away from suction inlet tubes to allow for adequate material separation and reduce carryover into main fan air tunnel. _____
- 18.17 The Stainless-Steel screens shall be “one-handed” operation removable from ground level without entering the hopper and without the use of tools. _____
- 18.18 A pneumatically powered screen vibrator shall be included. _____
- 18.19 The body roof shall incorporate an externally mounted, removable plate to permit inspection and cleaning of the upper air tunnel area. _____
- 18.20 Catch Basin/Wander hose – 8-inch diameter includes two (2) aluminum 4 feet crowned and 6 feet flanged extensions. Top Mounted Hydraulic Assisted. Turntable mounted; easy handling self-supported counter balanced rigid boom type with flexible extension. Manual isolation valve for control of water injection within the boom. Boom to be hydraulically powered raise/lower with a working radius of up to 11 feet through 280 degrees of rotary movement with 6.5 feet of rise and fall movement. Remote greasers are provided to enable the wander hose turntable to be greased from ground level. _____
- 18.21 The rear door shall have two (2) drain ports at staggered heights to enable water to be drained off. One 3-inch located in upper left with a hose stowed on its own storage bracket and one located in middle bottom of rear door with a 1-1/2-inch ball valve. _____
- 18.22 The hopper shall include a two-nozzle body flush out system whereby the user may clean the inside of the hopper by hooking the flush out system to a fire hydrant. _____

19. Vacuum Impeller Fan

- 19.1 Shall be single stage centrifugal type, direct drive, dynamically balanced. And capable of producing 59 inches of negative water column at the suction nozzle. _____
- 19.2 Impeller shall be 31.5-inch diameter, 3.15-inch wide and of stainless-steel construction. _____
- 19.3 Impeller shall incorporate eight (8) hardened stainless steel vanes with built-in “wear safe” characteristics. _____
- 19.4 Impeller housing shall have a port for inspection and be constructed of A/R steel. _____
- 19.5 The connection of blower to drive system and engine via fluid coupler shall permit the blower to freely spin within its housing. _____

- 19.6 The impeller shall be driven via an adjustment free 'step-up' gearbox. (BELTS ARE NOT ACCEPTABLE.)
Step-up gearbox ratio shall be a minimum of 1:1.79 permitting higher impeller speeds at low engine RPM.

- 19.7 The purchaser has demonstrated various types of vacuum sweepers and has determined that a minimum impeller fan speed of 3,400 RPM is required to effectively convey the bulk of material into the debris hopper. State engine RPM required to generate an impeller fan speed of 3,400 RPM.

Engine speed _____ RPM

Impeller speed _____ RPM

Step up ratio _____

- 19.9 **Blower Drive System:** To permit longer life and lower cost of operation, the entire blower drive system, excluding the auxiliary engine and impeller, **shall be guaranteed for 5 years.** The warranty shall include all components between the engine flywheel and the blower. The warranty shall cover all components, including normal wear items, such as, but not limited to, belts, pulleys, bearings, shafts, fluid couplings, clutches, seals, etc. Warranty shall include all parts and labor for a period of 5 years. 100% parts and labor. No pro-rating or hour limitations acceptable. Vendors shall submit warranty statements from the manufacturer with their bids, in strict compliance with the published warranty specifications. Failure to do so will deem your bid as non-responsive.

- 19.10 Blower exhaust port is to be sealed and air is to be exhausted rearwards over full width of the body through a sound suppressed roof tunnel vent on top of hopper.

20. Intake System

- 20.1 The intake system shall be a minimum of 10-inch I.D. diameter featuring straight inlet tubes (no bends or curves) into the debris hopper to maximize air speed up to 300 mph.

- 20.2 To permit cleaning and removal of blockages the intake system shall separate when the debris hopper is raised. The make break inlet point shall be no more than 57 inches off of ground.

20.1. Gutter Broom - Right and Left Side

- 21.1 Gutter broom(s) shall be one piece of steel tine construction, and 28-inch diameter.

- 21.2 Gutter broom(s) shall be direct hydraulic drive type and relief valve protected.

- 21.3 Gutter broom(s) shall have variable speed from within the cab. Rotational speed from 0 -140 RPM independent of engine RPM.

- 21.4 Gutter broom(s) shall pneumatically raise/lower.

- 21.5 Gutter broom(s) shall incorporate a lock for transport activated automatically from within the cab.

- 21.6 Gutter broom(s) and components shall be free floating, trailing arm configuration with adjustable "kick back" feature to avoid damage if contact is made with high curbs or other immovable objects.

- 21.7 Four (4) water spray jets shall be provided at each gutter broom along with an LED work light.

- 21.8 Two (2) water spray jets to be mounted on lower rear corners of cab. They are to be wired and activated separately to provide additional dust suppression when required. _____
- 21.9 Gutter brooms shall be capable of being operated independently of all other sweep gear. _____
- 21.10 Gutter broom(s) shall be capable of sweeping on top of sidewalk edge for the purpose of cleaning weeds, etc. This feature shall also be used to trim grass edges on curbs, edged parkways, etc. _____
- 21.11 The right and left side gutter broom components must be identical (unhanded) to permit interchangeability from side to side. _____
- 21.12 In-Cab tilt controls shall be included for both gutter brooms. _____
- 21.13 In-Cab lateral controls shall be included for both gutter brooms. _____
- 21.14 Sweeper shall have power and capabilities to simultaneously sweep with both gutter brooms and vacuum nozzles at the same time. _____
- 21.15 Both gutter brooms shall come equipped with an additional power boost button to add extra down pressure for severe applications. _____

21. Wide Sweep Broom

- 21.1. Polypropylene under-body broom shall be supplied. _____
- 21.2. Broom shall be 16-inch diameter minimum. _____
- 21.3. Broom length shall be 50-inch minimum. _____
- 21.4. To reduce the potential for damage, the wide sweep broom shall be towed and not pushed when operating. _____
- 21.5. Wide sweep broom shall be enclosed within its own hood to prevent debris from being ejected. _____
- 21.6. Broom shall be hydraulically driven at a constant speed with adjustable pressure and flotation system. _____
- 21.7. Wide sweep broom shall have a minimum of four (4) water spray nozzles mounted at front bumper for early dust control. _____
- 21.8. Wide sweep broom shall be capable of being changed without removing any parts other than the broom side cover plate. _____
- 21.9. Wide sweep broom shall be capable of being operated independently of all other sweep gear. _____
- 22.10 The wide sweep broom down pressure can be accomplished from inside or outside cab via the pendant control. _____

22.11 Wide sweep broom shall have a road crown compensation pivot with remote greasing provision to provide simple, easy lubrication. _____

23. Suction Nozzles - Right and Left Side

23.1 Shall be alloy construction, rubber lined for increased life and low noise and will include curb guards and rubber skirts. _____

23.2 Nozzle(s) shall raise/lower pneumatically. _____

23.3 Nozzle(s) shall have four (4) internal water jets to provide dust suppression and lubrication for debris conveying tubes and sweeper internal components. Water nozzles shall be of the non-clog type, utilizing "Spring Applied, Hydraulically Released" pins to insure an unobstructed flow. _____

23.4 Nozzle carriage(s) shall each be provided with two (2) adjustable heavy-duty rubber tired, 10-inch diameter wheels preferred. Should the nozzle not meet this requirement, then a third wheel or caster must be provided. _____

23.5 Nozzle wheels shall be capable of being independently adjusted. _____

23.6 An in-cab control shall permit the operator to remotely tilt the nozzle backwards to accommodate the ingestion of large items. _____

23.7 The right and left nozzle components must be identical (unhanded) to permit interchangeability from side to side. _____

23.8 Nozzle assemblies are to be attached to the sweep gear framework via tool free, detachable, self-aligning draw bar and track independently of chassis. _____

23.9 Nozzle(s) shall be capable of being operated independently of other sweeping gear. _____

24. Hydraulic System

24.1 The hydraulic system shall operate the following: wide sweep broom rotation, gutter broom rotation, wide sweep broom swiveling and lateral positioning. _____

24.2 To ensure adequate cooling, reservoir capacity to pump output shall be minimum of 2:1 ratio. State pump output at recommended auxiliary engine operating speed. _____ GPM@ _____ RPM

24.3 Hydraulic oil reservoir capacity shall be 18.5 gallons minimum and capable of maintaining continuous operation without overheating. _____

24.4 All hydraulic circuits shall be protected by relief valves. _____

24.5 Hydraulic reservoir shall have a fluid level sight glass. _____

24.6 The hydraulic system shall incorporate two (2) filters. A 125-micron suction filter and a 25-micron return filter. _____

24.7 The body raise/lower shall be powered off the auxiliary engine. An electric over hydraulic back-up system shall be furnished in the event the auxiliary engine does not start. _____

- 24.8 The body dump controls shall be controlled via a handheld pendant to permit operation from within the cab or outside the cab. The pendant shall have a 15-foot reach from the cab. _____
- 24.9 All sweeping gear functions shall be powered from its timing gear power take-off feature. _____
- 24.10 All hydraulic valves for sweep gear shall be equipped with LED status indicators for fast, easy diagnostics. _____
- 24.11 The hydraulic system shall have a quick disconnect test port. _____
- 24.12 Gutters brooms must be able to operate simultaneously. _____

25. Water System

- 25.1 The water tank shall be integrated with the hopper body and shall be fabricated of stainless steel. To permit longer life and a lower cost of operation, the sweeper's water tank shall carry a **LIFETIME WARRANTY** as long as the customer owns the sweeper. Warranty shall include and not be limited to rust, corrosion and abrasion perforation, cracking, warping, melting, UV damage etc. Vendor will be financially responsible for all repairs, parts, and labor. 100% parts and labor with no pro-rating or hour limitations acceptable. Vendors shall supply warranty statements from the manufacturer with their bids in complete compliance with the published warranty specification. Failure to do so will deem your bid non-responsive _____
- 25.2 The water tank capacity shall be 415 gallons minimum with an in-cab gauge and tank must be baffled to minimize stress related movement. _____
- 25.3 Water pump drive and related systems shall have an air purge protection system against freeze-up. _____
- 25.4 Water pump is to be a heavy-duty double diaphragm design, driven hydraulically from a direct coupled motor and be self priming and not subject to damage when operated dry. _____
- 25.5 A 25-foot hydrant hose with quick connect coupling and wrench shall be furnished. Storage compartment shall be provided for both the hose and wrench when not in use. _____
- 25.6 Machine shall be equipped with a 25-foot wash down hose with an adjustable spray nozzle. _____
- 25.7 All water valves shall have manual drain provisions. _____
- 25.8 The water tank shall have three (3) drain and flush out ports. _____
- 25.9 Provision shall be made to enable water tank filling to be accomplished by either hydrant or garden type hose and be filled from either side of unit. _____
- 25.10 All water system rigid lines shall be constructed of nonferrous materials. _____
- 25.11 An external water filter shall be provided. The filter must be accessible with the body lowered. A shut off (isolation) valve must be provided to facilitate servicing. _____
- 25.12 Water manifold shall be constructed of stainless steel. _____
- 25.13 The water system shall have a quick connect test port. _____

- 25.14 The water system shall have an adjustable relief valve. _____
- 25.15 The water system connectors shall be push-in type for easy repair or replace. _____
- 25.16 High Pressure Water System to include:
- 25.16.1 High Pressure Washing system with hand lance. _____
 - 25.16.2 Hose reel. _____
 - 25.16.3 Center mounted front spray bar. _____
 - 25.16.4 Rear mounted nozzle spray bar. _____
 - 25.16.5 8 GPM, 1,500 psi with hand lance. _____
 - 25.16.6 Wide sweep broom spray bar rear mounted. _____
 - 25.16.7 Suction nozzle spray bar rear mounted. _____
 - 25.16.8 50-foot recoiling hose reel. _____
 - 25.16.9 The spray bars can be used independently and in conjunction with sweeping. _____
 - 25.16.10 System is driven directly from a tandem hydraulic pump fitted to the auxiliary engine and permits washing and sweeping at the same time. _____
 - 25.16.11 Water pump output 8.5 GPM @ 1,500psi (nominal). _____
 - 25.16.12 Driven directly by hydraulic motor. _____

26. Air System

- 26.1 The sweeper air system shall incorporate a safety device which will ensure that in the event of a pneumatic failure, the chassis braking system will be automatically protected and air brake pressure will be maintained. _____
- 26.2 A self purging air dryer shall be provided with a built-in timer to expel condensation. _____
- 26.3 Cold Weather Water Purge System to easily and quickly allow operator to drain all air lines by operating a simple in-cab switch. _____
- 26.4 The regulator shall have a shut off valve to purge only the sweeper system while maintaining chassis air pressure. _____
- 26.5 All sweep system pneumatic valves shall be housed in a weatherproof systems locker and activated by cab mounted switches. _____
- 26.6 The pneumatic system shall have a quick connect test port. _____
- 26.7 All pneumatic hose connectors shall be "tool free" push-in type to facilitate easy servicing, removal, or replacement. _____
- 26.8 Nozzle, and wide sweep broom pneumatic cylinders shall have a common seal repair kit to defray parts stocking cost. _____
- 26.9 Pneumatic system air lines shall be color coded for easy recognition of "live supply," "switched supply" and "exhaust". _____
- 26.10 The pneumatic system shall operate the following functions:
- 26.10.1 Wide sweep raise/lower/road pressure. _____
 - 26.10.2 Nozzle raise/lower/tilt for large debris. _____
 - 26.10.3 Gutter broom raise, lower and latch. _____

27. Systems Control Locker

- 27.1 All controlling elements for the sweeper's pneumatics, water and hydraulics shall be centrally housed in a single easily accessible, sealed, and weatherproof locker. _____
- 27.2 Systems Locker will have an internal LED light for visibility and a recessed garage style door. _____
- 27.3 Each system shall be equipped with L.E.D. status indicators on all solenoids for fast, easy diagnostics. _____
- 27.4 Test ports shall be provided for each system. _____
- 27.5 All electrical wiring shall be contained within flame retardant conduit. _____
- 27.6 All wiring shall be color coded and numbered for easy troubleshooting. _____
- 27.7 All internal wiring shall conform to an IP65 standard, to insure protection against dust and sprayed water intrusion. _____
- 27.8 All external wiring shall conform to an IP67 standard, to insure protection against migration of dust and immersion into water. _____
- 27.9 Can-Bus Control System to provide easy fault diagnostics and data capture of daily and cumulative sweeping performance, such as fuel consumption, average RPM, engine hours and hours to next service. _____

28. Safety

- 28.1 Two (2) rear LED Strobes with limb guards shall be supplied. _____
- 28.2 A back up alarm of not less than 107 dB(A) shall be installed and shall sound when reverse gear is selected. _____
- 28.3 A "two footed" access ladder with sure grip treads and grab handles leading to a full width catwalk shall be installed for the purpose of gaining safe access to auxiliary engine compartment. _____
- 28.4 Automatic pickup in reverse gear of all sweeping equipment shall be supplied. _____
- 28.5 A pre-programmed single master override sweep switch shall control all sweep gear. The sweeping gear shall raise, and the water shall shut off when switch is moved out of "work" position. All functions shall resume their previously programmed settings when the switch is returned to "work" position. _____

29. Paint

- 29.1 Sweeper components are to be aluminum oxide bead prior to the application of a corrosion resistant primer (60-micron nominal). The gloss topcoat is to be a two-part epoxy paint finish, standard white (60-micron nominal). _____
- 29.2 All sweep gear and bracketry are to be hot washed, zinc phosphate and power painted dark grey for maximum protection in a sweeping environment. _____

30. Warranty

- 30.1 The sweeper auxiliary engine shall carry a (2) two-year bumper to bumper warranty, 100% parts and labor minimum. Include a warranty statement with your bids. _____
- 30.2 Warranty repairs to include all parts and labor, 100% coverage, no pro-rating. _____
- 30.3 Sweeper components other than wear items shall carry a standard (2) two-year warranty. _____
- 30.4 Hopper warranty shall be for life as per Section 18.1 of bid specifications. _____
- 30.5 Blower drive warranty shall be (5) five- years as per Section 19.9 of bid specifications. _____
- 30.6 Water tank warranty shall be for life as per Section 25.1 of bid specifications. _____
- 30.7 All warranty repairs on the sweeping components will be completed on-site at the City's garage at no additional charge. _____

31. Manuals

The following documentation shall be supplied upon delivery of unit:

- 31.1 Sweeper:
1-Driver/ Operator Guide _____
1-Parts List _____
1-Service/Maintenance Manual _____
1-Troubleshooting Manual. _____
- 31.2 Truck Chassis:
1-Owner/ Operator's Guide. _____
1-Parts List _____
1-Service/Maintenance Manual _____
1-Troubleshooting Manual _____
- 31.3 Transmission:
1-Driver's Handbook. _____
1-Parts List _____
1-Service/Maintenance Manual _____
1-Troubleshooting Manual. _____
- 31.4 Sweeper Engine:
1-User's Handbook. _____
1-Parts List _____
1-Service/Maintenance Manual _____
1-Troubleshooting Manual. _____
- 31.5 Software system shall be included for extended functionality regarding custom monitoring, reporting, and sweep settings. _____

Exceptions to Bid Specifications

Spec Line Item #

Explanation of Exception

Bidders delivered price for specifications stated above: \$ _____

Approximate Delivery Time after Notice of Award: _____

Please submit sealed bids to the City Clerk's Office by Thursday, October 19, 2023, at 3:00 PM.

BID AGREEMENT

SIGNED: _____

PRINTED NAME: _____

TITLE: _____

FIRM NAME: _____

PHONE NUMBER: _____

EMAIL: _____

ADDRESS ENVELOPE:

City of Sault Ste. Marie
Attention City Clerk's Office
225 East Portage Avenue
Sault Ste. Marie, MI 49783
B-46-23 Street Sweeper – Street Department