

CITY OF SAULT STE. MARIE
REQUEST FOR PROPOSAL
SEWAGE PUMP PURCHASE
B-09-24

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 SEWAGE PUMP PURCHASE.

Sealed bids will be publicly opened on **Friday, March 15, 2024, at 3:00 PM (local time)**, 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

CITY OF SAULT STE. MARIE
REQUEST FOR PROPOSAL
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SECTION I: GENERAL INFORMATION

A. OBJECTIVE

The City of Sault Ste. Marie is requesting bids for **SEWAGE PUMP PURCHASE**.

QUESTIONS ABOUT AND CLAIRFACTIONS OF THE BID REQUEST

All questions regarding this bid request shall be submitted via phone call or email. Questions will be accepted and answered in accordance with the terms and conditions of this request.

All questions shall be submitted to Brian Masterson, Wastewater Treatment Plant Director, by phone at 906-632-2200, or by email at bmasterson@saultcity.com.

Should any prospective respondent be in doubt as to the true meaning of any portion of this bid request, or should the respondent find any ambiguity, inconsistency, or omission therein, the respondent shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this bid request will be made only as an official addendum that will be posted to saultcity.com and it shall be the respondent's responsibility to ensure they have received all addenda before submitting a bid. Any addendum issued by the city shall become part of the bid request and must be incorporated in the bid where applicable.

B. BID FORMAT

To be considered, each firm must submit a response to this bid request using the format provided in Section III. No other distributions of bids are to be made by the respondent. An official authorized to bind the respondent to its provisions must sign the bid in ink. Each bid must remain valid for at least ninety days from the due date of this bid request.

Bids should be prepared simply and economically, providing a straightforward, concise description of the respondent's ability to meet the requirements of the bid request. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the bid.

C. SELECTION CRITERIA

The City will open the responses on Friday, March 15, 2024 at 3:00 PM (local time). Bids submitted late or via oral, telephonic, telegraphic or electronic mail or facsimile will not be considered or accepted.

Each respondent must submit in a **sealed** envelope:

- Two (2) copies of the fee proposal

Bids submitted must be clearly marked: "B-52-23 SEWAGE PUMP PURCHASE" and list the respondent's name and address.

Bids must be addressed and delivered to:

City of Sault Ste. Marie
c/o City Clerk's Office
225 E. Portage Ave.
Sault Ste. Marie, MI 49783

All bids received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

The City will not be liable for any respondent for any unforeseen circumstances, delivery or postal delays. Postmarking on the due date will not substitute for receipt of the bid. Respondents are responsible for submission of their bid. Additional time will not be granted to a single respondent. However, additional time may be granted to all respondents at the discretion of the City.

D. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a respondent's bid is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

SECTION II: SCOPE OF PRODUCT(S)

A. OBJECTIVE

Furnish & Install **1 each** Premium Efficiency, non-clog, Submersible Sewage Pump

B. SPECS

Acceptable Manufacturer:

Sulzer XFP 150G-CB1 PE 210/4

6" suction and Discharge

28 p, 4 Pole, 230/460v, 3-Phase, 60 Hz

Design: 1,300 U.S. GPM at a total dynamic head of 60 feet.

Shut off head shall be a minimum of 122 feet.

The motor shall be an integral part of the pump unit.

Pump motor shall be equipped with 49 feet of power and control cable sized in accordance with NEC and CSA standards.

Pump shall be Horizontal Dry pit configuration. Cooling fluid shall be circulated withing a cooling jacket. Cooling via the fluid being pumped will not be acceptable.

The heavy duty submersible wastewater pump(s) shall be capable of handling raw unscreened sewage and other similar solids-laden fluids without clogging. The pump(s) shall be driven by a Premium Efficiency motor, providing the highest levels of operational reliability and energy efficiency.

Submersible Pump Construction

Major pump components shall be cast iron, ASTM A-48, Class 35B

All exposed fasteners shall be 316 SS

All metal surfaces coming into contact with the pumped media (other than the stainless steel components) shall be protected by a factory applied spray coating of zinc phosphate primer followed by a high solids two-part epoxy paint finish on the exterior of the pump.

Wet End

Impeller: Contrablock Plus impeller shall be cast iron ASTM A-48, Class 35B.

The impeller shall be of the semi-open, non-clogging, one-vane design, meeting the Ten State Standards requirement for minimum solids passage size of 3 inches.

The impeller shall be capable of passing a minimum of 3.9 inch spherical solids that are commonly found in wastewater.

The impeller shall have a slip fit connection onto the motor shaft, driven by a shaft key, and shall be securely fastened to the shaft by a stainless steel screw.

The impeller shall be dynamically balanced to the ISO 10816 standard to provide smooth, vibration-free operation.

Self-Cleaning Wear Plate: Contrablock Plus wear plate shall be cast iron ASTM A-48, Class 35B. The wear plate shall be designed with an inlet incorporating strategically placed cutting grooves as well as an outward spiral V-shaped groove on the side facing the impeller. The dual groove system shall be used to shred and force stringy solids outward from the impeller and through the pump discharge. The wear plate shall be mounted to the volute with four stainless steel securing screws and four stainless steel adjusting screws to permit close tolerance adjustment between the wear plate and impeller for maximum pump efficiency. Adjustment to allow for wear and restore peak pumping performance shall then be accomplished using standard tools, and without requiring disassembly of the pump.

Pump Volute: The pump volute shall be a single-piece, cast iron ASTM A-48, Class 35B, non-concentric design with centerline discharge. Passages shall be smooth and large enough to pass any solids which may enter through the impeller.

Premium Efficiency Motor: Shall meet efficiency standards in accordance with IEC 60034-30:2008, level IE3 and NEMA Premium*. Motor rating tests shall be conducted in accordance with IEC 60034-2-1 requirements and shall be certified accurate and correct by a third party certifying agency. A certificate shall be available upon request.

* IE3 and NEMA Premium efficiency levels are equivalent, however the NEMA Premium standard is intended to cover dry installed motors only, not integrated submersible motors.

The motor shall be housed in a water-tight gray cast iron, EN-GJL-250 (ASTM A-48, Class 35B), enclosure, capable of continuous submerged operation underwater to a depth of 20 meters (65 feet) and shall have an IP68 protection rating.

The motor shall be of the squirrel-cage induction design, NEMA type B.

The copper stator windings shall be insulated with moisture resistant, Class H insulation material, rated for 180°C (356°F).

The stator shall be press fitted into the stator housing.

The use of bolts, pins, or other fastening devices requiring penetration of the stator housing is unacceptable.

The rotor bars and short circuit rings shall be made of cast aluminum.

The motor shall be designed for continuous duty.

The maximum continuous temperature of the pumped liquid shall be 40°C (104°F), and intermittently up to 50°C (122°F).

The motor shall be capable of handling up to 15 evenly spaced starts per hour without overheating.

The service factor (as defined by the NEMA MG1 standard) shall be 1.3.

The motor shall have a voltage tolerance of +/- 10% from nominal, and a phase-to-phase voltage imbalance tolerance of 1%.

The motor shall have a NEMA Class A temperature rise, providing cool operation under all operating conditions.

The motor shall be FM approved for use in NEC Class I, Division I, Groups C & D hazardous locations.

The surface temperature rating shall be T3C.

The motor shall meet the requirements of NEMA MG1 Part 30 and 31 for operation on PWM type Variable Frequency Drives.

Cooling System: The factory installed closed-loop cooling system shall be cast iron, ASTM A-48, Class 35B, adequately designed to allow the motor to run continuously under full load while in an unsubmerged (dry-pit).

A cooling jacket shall surround the stator housing, and an environmentally safe nontoxic propylene glycol solution shall be circulated through the jacket by an axial flow circulating impeller attached to the main motor shaft.

The coolant shall be pumped through an integrated heat exchanger in the base of the motor whenever the motor is running, allowing excess heat to be transferred to the process liquid.

Cooling systems that circulate the pumped medium through the cooling jacket, or those that use a toxic cooling liquid shall not be acceptable.

The use of external heat exchangers, fans, or the supply of supplemental cooling liquid shall not be required.

Thermal Protection: Each phase of the motor shall contain a normally closed bi-metallic temperature monitor switch imbedded in the motor windings.

These thermal switches shall be connected in series and set to open at 140°C +/- 5°C (284°F).

They shall be connected to the control panel to provide a high stator temperature shutdown signal, and are used in conjunction with external motor overload protection.

Mechanical Seals: Pump shall be equipped with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies.

The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate.

The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary industrial duty silicon-carbide seal ring and one rotating industrial duty silicon-carbide seal ring.

The stationary ring of the primary seal shall be installed in a seal holding plate of cast iron ASTM A-48, Class 35B.

The seal holding plate shall be equipped with swirl disruption ribs to prevent abrasive material from prematurely wearing the seal plate.

The upper, secondary seal unit, located between the lubricant chamber and motor housing, shall contain one stationary industrial duty silicon-carbide seal ring, and one rotating industrial duty silicon-carbide seal ring.

Each seal interface shall be held in contact by its own spring system.

The seals shall not require routine maintenance or adjustment, and shall not be dependent on the direction of rotation for proper sealing.

Each pump shall be provided with a lubricant chamber for the shaft sealing system which shall provide superior heat transfer and maximum seal cooling.

The lubricant chamber shall be designed to prevent overfilling, and to provide lubricant expansion capacity.

The drain and inspection plug shall have a positive anti-leak seal and shall be easily accessible from the outside of the pump.

The seal system shall not rely upon the pumped media for lubrication and shall not be damaged when the pump is run dry.

Lubricant in the chamber shall be environmentally safe nontoxic material.

Mechanical Seal Protection System: The primary mechanical seal shall be protected from interference by particles in the wastewater, including fibrous materials, by an active Seal Protection System integrated into the impeller.

The back side of the impeller shall be equipped with a sinusoidal cutting ring, forming a close clearance cutting system with the lower submersible motor housing or seal plate.

This sinusoidal cutting ring shall spin with the pump impeller providing a minimum of 75 shearing actions per pump revolution.

Large particles or fibrous material which attempt to lodge behind the impeller or wrap around the mechanical seal, shall be effectively sheared by the active cutting system into particles small enough to prevent interference with the mechanical seal.

The Seal Protection System shall operate whenever the pump operates, and shall not require adjustment or maintenance in order to function.

Submersible pump designs which do not incorporate an active cutting system to protect the primary mechanical seal shall not be considered acceptable for wastewater service.

Seal Failure Early Warning System: The integrity of the mechanical seal system shall be continuously monitored during pump operation and standby time.

An electrical probe shall be provided in a sensing chamber positioned above the mechanical seals for detecting the presence of water contamination within the chamber.

The sensing chamber shall be air-filled, and shall have a drain / inspection plug with a positive anti-leak seal which is easily accessible from the outside of the pump.

A solid-state relay mounted in the pump control panel or in a separate enclosure shall send a low voltage, low amperage signal to the probe, continuously monitoring the conductivity of the liquid in the sensing chamber.

If sufficient water enters the sensing chamber, the probe shall sense the increase in conductivity and signal the solid state relay in the control panel.

The relay shall then energize a warning light on the control panel, or optionally, cause the pump shut down.

This system shall provide an early warning of mechanical seal leakage, thereby preventing damage to the submersible motor, and allowing scheduled, rather than emergency, maintenance.

Shaft: The pump shaft and motor shaft shall be an integral, one piece unit adequately designed to meet the maximum torque required at any normal start-up condition or operating point in the system.

The shaft shall have a full shutoff head design safety factor of 1.7, and the maximum shaft deflection shall not exceed .05 mm (.002 inch) at the lower seal during normal pump operation.

Each shaft shall be of stainless steel, 1.4021 (AISI 420), and shall have a polished finish with accurately machined shoulders to accommodate bearings, seals, and impeller.

Bearings: Each pump shaft shall rotate on high quality, permanently lubricated, greased bearings. The upper bearing shall be a deep grooved ball bearing and the lower bearings shall be a heavy duty, double row, angular contact ball bearing.

Bearings shall be of sufficient size and properly spaced to transfer all radial and axial loads to the pump housing and minimize shaft deflection. L-10 bearing life shall be a minimum of 100,000 hours at flows ranging from ½ of BEP flow to 1½ times BEP flow (BEP is best efficiency point).

The bearings shall be manufactured by a major internationally known manufacturer of high quality bearings, and shall be stamped with the manufacturer's name and size designation on the race.

Generic or unbranded bearings from other than major bearing manufacturers shall not be considered acceptable.

Power Cable: The power cables shall be sized according to NEC and CSA standards and shall be of sufficient length to reach the junction box without requiring splices.

The outer jacket of the cable shall be of chlorinated polyethylene (CPE) and be oil, water, and UV resistant, capable of continuous submerged operation underwater to a depth of 65 feet.

Cable Entry/Junction Chamber: The cable entry design shall not require a specific torque to insure a watertight seal.

The cable entry shall consist of cylindrical elastomer grommets, flanked by stainless steel washers.

A cable cap incorporating a strain relief and bend radius limiter shall mount to the cable entry boss, compressing the grommet ID to the cable while the grommet OD seals against the bore of the cable entry.

The junction chamber shall be isolated and sealed from the motor by means of sealing glands. Electrical connections between the power cables and motor leads shall be made via a compression or post type terminal board, allowing for easy disconnection and maintenance.

SECTION III: BID EVALUATION

1. The Wastewater Treatment Plant Director will review the bids and select firms for further consideration.
2. The City reserves the right to reject any bid that it determines to be unresponsive and deficient in any of the information requested for evaluation. A bid with all the requested information does not guarantee the proposing firm to be a candidate.
3. After evaluation of the bids, further negotiation with the selected firm may be pursued leading to the award of a purchase by City Commission, if suitable bids are received.

The City reserves the right to waive the interview process and evaluate the respondents based on their bids and fee schedules.

The City will determine whether the final scope of the product to be negotiated will be entirely as described in this bid request a portion of the scope, or a revised scope.

Any bid that does not conform fully to these instructions may be rejected.

SECTION IV: INSURANCE REQUIREMENTS

The VENDOR shall provide general liability and event insurance (during the entire period of the event) per each occurrence in the amount of \$1,000,000.00 (one million dollars) and name the City of Sault Sainte Marie as an additional insured on each insurance policy. Auto Liability shall also be included in the amount of \$1,000,000 including Hired & Non-Owned.

The VENDOR will provide evidence of Workers Compensation Insurance with statutory coverage afforded for compensation and limits of \$500,000 for Employer's Liability. A copy of each insurance certificate on an Accord 25 (2014 or newer edition) shall be provided to the city a minimum of two weeks prior to the event and delivered to the city clerk's office at city hall.

Insuring carriers are to hold a "A" or better rating by AM Best and request insuring carrier to be an Admitted Carrier within the state of MI. Waivers of Subrogation and 30-Day Cancellation notices are to be included under all policies in favor of the City. Furthermore, all additional insured endorsements issued in favor of the City are defined as primary and non-contributory for the event regardless of any insurance secured directly by the City or any self-insurance funded or operated by the City.

It is the responsibility of the VENDOR as a party to this agreement, to assure that any separate, third-party concessionaires, exhibitors, or vendors, secure and provide evidence of insurance. The insurance secured by any and all third-party entities must be identical to those coverages demanded of the VENDOR by the City, including Additional Insured, Waiver, and Primary and Non-contributory provisions.

It is understood by all parties that any third-party entities are not party to this agreement but will still be required to comply with these insurance requirements.

BID AGREEMENT

SIGNED: _____

PRINTED NAME: _____

TITLE: _____

FIRM NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

EMAIL: _____

Bids due Friday, March 15, 2024, at 3:00 PM (local time)

Address Envelope:

City of Sault Ste. Marie
c/o City Clerk's Office
225 E. Portage Ave.
Sault Ste. Marie, MI 49783
B-09-24 Sewage Pump Purchase