

TOWN OF DERRY, N.H.
DEPARTMENT OF PUBLIC WORKS
14 Manning Street, Derry, NH 03038
(603) 432-6144

INVITATION TO BID

Sealed bids will be received at the Derry Municipal Center, 14 Manning Street, Derry, NH 03038 until 2:00pm, prevailing time, Thursday March 31, 2022, for the following items:

**Trolley Car Lane Sewer Booster Pump Station
Replacement 500 HP Variable Frequency Drive**

Bid invitations and specifications will be available at the Department of Public Works, 14 Manning Street, Derry, NH or online at: www.derrynh.org

Questions regarding this request should be directed to Al Theriault, Department of Public Works via email at altheriault@derrynh.org or by facsimile at (603) 432-6757.

The Town of Derry reserves the right to waive any irregularities, reject any or all bids, and to accept the bid that appears to be in the best interest of the Town. Failure to submit all information called for may be sufficient for disqualification.

Thomas Carrier
Deputy Director of Public Works

GENERAL:

1. Bids will be received by the Town of Derry, New Hampshire at the Derry Municipal Center, 14 Manning Street, 2nd floor until the time specified in the Invitation to Bid.
2. The following meanings are attached to the defined words when used in this document:
 - a. The word "Town" means the Town of Derry, New Hampshire.
 - b. The word "Bidder" means the person, firm, or corporation submitting a bid on these specifications or any part thereof.
 - c. The word "Contractor" means the person, firm, or corporation with whom the Contract is being made by carrying out the provisions of this Sealed Bid Invitation and the Contract.
 - d. The words "firm price" shall mean a guarantee against price increase during the life of the Contract.
3. Strict compliance with the requirements of the Invitation to Bid, terms and conditions, and instructions printed is necessary. All blank spaces must be filled in. Any changes and/or corrections shall be marked in red and initialed by the person making such corrections. Signatures of the responsible owner/representative of the firm must be in ink. No reproductions/duplications/copies will be accepted.
4. Each bid must give the full business address of the Bidder and be signed by him with his usual signature. Bids by partnerships must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and title of the person signing. Bids by corporations must be signed with the legal name of the corporation, followed by the state of incorporation and by the signature and title of the president, secretary, or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixes to his signature the word "president", "secretary", "agent" or other title without disclosing his principal may be held to be the bid of the individual signing. When requested by the Town, satisfactory evidence of the authority of the signing officer signing on behalf of the corporation shall be furnished.
5. Bids must be securely sealed in a suitable envelope (facsimile and emailed submissions will not be accepted), addressed and marked on the outside as follows:

SEALED BID

Trolley Car Lane Sewer Booster Pump Station Replacement 500 HP Variable Frequency Drive

6. It will be the responsibility of the Bidder to see that their bid is received by the Public Works Department as specified.
7. Each bid is received with the understanding that the acceptance in writing via email by the Town to the Bidder to furnish any or all of the products /services described therein or as otherwise negotiated, shall constitute a contract between the Bidder (Contractor) and the Town, which shall bind the Bidder (Contractor) on his part to furnish and deliver the articles offered at the prices agreed upon and in accordance with the terms and conditions of said accepted bid; and the Town on its part to order from such Bidder (Contractor), except for causes beyond reasonable control; and pay for, at the agreed prices, all products/services specified and delivered.

8. Bids may be withdrawn upon written or electronic request received from Bidders prior to the time of opening. Negligence on the part of the Bidder in preparing the bid confers no right for the withdrawal of the bid after it has been opened.
9. The solicitation document maintained by the Public Works Department, in the appropriate file folder, shall be considered the official copy. In the case of any inconsistency between bid documents submitted to the Town, but not clearly listed on the exception page of the document or as an exception by the Bidder, the language of the official copy shall prevail. Furthermore, any exception or changes to the specifications made by the Bidder may be cause to disqualify your bid.
10. Bidders are encouraged to conduct a site visit of the Booster Pump Station by contacting the Electrical Mechanical Technician, Al Theriault at 603-432-6149 or email at altheriault@derrynh.org. Site visits are encouraged but not mandatory.
11. No oral interpretations will be made to any Bidder as to the meaning of the specifications or terms and conditions of this Sealed Bid Invitation. Every request for such interpretation or request for change in the specifications or terms and conditions shall be made in writing, addressed, and forwarded to:

Mail: Thomas Carrier, Deputy Director of Public Works
Derry Municipal Center
14 Manning Street
Derry, NH 03038

Email: tomcarrier@derrynh.org

Fax: (603) 432-6130

Attn: Thomas Carrier, Deputy Director of Public Works

Questions must be received by Thursday March 24, 2022 at noon. Every interpretation made to a Bidder will be in the form of an addendum to the Sealed Bid Invitation which, if issued, will then be posted on the website: http://www.derrynh.org/Pages/DerryNH_Bids/ All such addenda shall become part of the complete Sealed Bid Invitation. It is the Bidder's responsibility to check the website prior to the submittal deadline to ensure that the Bidder has a complete, up-to-date bid package.

12. Bids that are incomplete, not properly endorsed or signed, or otherwise contrary to these instructions may be rejected as informal by the Town. The bid must be filled out completely and accurately. Please explain in detail any exceptions or deviations taken on this bid. Separate pages may be used if necessary.
13. Bids must be submitted on the bid schedule hereinafter provided. Prices shall be clearly and fully stated in units of quantities specified. No additional charges shall be passed to the Town, including all applicable taxes, delivery or surcharges that have not already been disclosed on the bid schedule. In case of discrepancy in computing the amount of the bid, unit prices quoted will govern.
14. Quotations shall include all charges for delivery, packing, crating, containers, etc. Unless otherwise stated by the Bidder, prices quoted will be considered as being based on delivery to destination designated, including any and all freight and packing charges.
15. As the Town is exempt from the payment of federal excise taxes, all prices quoted herein are not to include these taxes.
16. Prices stated shall remain firm for the duration of the contract.
17. Should the successful Contractor fail to make delivery or complete the contract within time specified, the Town reserves the right to procure the equipment/product from other sources and hold the Contractor liable for any excess cost.

18. The Town reserves the right to postpone the delivery date to allow for any change in operating conditions or for any other cause not now foreseen. In the event the Town elects to exercise this right, all prices quoted pursuant to this Sealed Bid Invitation will remain firm, and the Town shall incur no additional obligation to the Contractor on account of any delay of delivery date ordered by the Town.
19. It is agreed that deliveries and/or completion are subject to strikes, lockouts, accidents, and acts of God.
20. The time of proposed delivery must be stated in definite terms. If time of delivery for different equipment varies, the Bidder shall so state.
21. The apparent silence of these specifications and any supplemental specifications as to any detail or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to shall and correct type, size and design are to be used. All interpretations of these specifications shall be made on the basis of this statement.
22. The Town reserves the right to waive any informality in bids, to reject any and all bids wholly or in part, and to make awards in a manner deemed in the best interest of the Town.
23. Awards will be made in the best interest of the Town. In determining what would be in the best interest of the Town, the following shall be considered:
 - a. The ability, capacity, and skill of the Bidder to perform the Contract or provide the service required;
 - b. Whether the Bidder can perform the Contract or provide the service promptly or within the time specified, without delay or interference;
 - c. The character, integrity, reputation, judgment, experience, and efficiency of the Bidder;
 - d. The quality of performance of previous contracts or services;
 - e. The previous and existing compliance by the Bidder with laws and ordinances relating to the Contract or service;
 - f. The sufficiency of the financial resources and ability of the Bidder to perform the Contract or provide the service;
 - g. The quality, availability, and adaptability of supplies or contractual services to the particular use required;
 - h. The ability of the Bidder to provide future maintenance and services for the use of the subject of the Contract;
 - i. The number and scope of additions attached to this bid.
24. The Town reserves the right to make awards on this proposal by item or to accept all or part of the proposal or prices quoted. In addition, the Town reserves the right to award materials on the basis of the lowest total cost of the bid item to the Town, including the Town's cost of transportation to and from the source.

In cases where two or more Bidders have the same net bid, the Town may give preference to firms located within the Town.

25. Upon making an award, or giving notice of intent to award, the Town will place appropriate notice on the Town's website: http://www.derrynh.org/Pages/DerryNH_Bids/
26. The Bidder must certify that no official or employee of the Town or State of New Hampshire, has a pecuniary interest in the proposal or in the Contract that the Bidder offers to execute or in the expected profits to arise there from, and that this bid is made in good faith without fraud, collusion or in connection with any other person submitting a proposal.
27. The Bidder, if awarded an order or contract, agrees to protect, defend and hold the Town harmless against any demand for the use of any patented material, process, article or device that may enter into the manufacture, construction or form a part of the work covered by either order or contract.
28. The Bidder, if awarded an order or contract, agrees to defend, indemnify, and hold harmless the Town from all damages to life and property arising out of the performance of this Contract due to the Bidder's negligence, that of his employees, subcontractors, etc., or due to the negligence of the Town, its employees, representatives, agents, etc.
29. The Revised Statutes Annotated of the State of New Hampshire, the Charter of the Town, and all Town Ordinances insofar as they apply to the laws of competitive bidding, contracts and purchases are made a part hereof.
30. The Bidder to whom a contract is awarded guarantees to the Town that all warrants of merchantability and fitness for a particular purpose as provided for in New Hampshire RSA 382A-2-314 and 2-314 shall remain in force and will not be disclaimed.
31. The Bidder, if awarded an order or contract, agrees to provide to the Town proof of Federal Identification Number (IRS Code Section 6723). Acceptable forms of documentation are a copy of a federal tax depository ticket, copy of IRS label showing name and Federal ID Number, IRS letter of taxpayer Identification Number assigned, other correspondence from the IRS with both individual/business name and Federal Identification or stationery/bills with Federal ID Number (and firm name and address) PREPRINTED on it. Any impertinent information may be blackened out before sending to the Town. Copies of tax returns must show taxpayer section and signature.
32. Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance pursuant to RSA 277-A when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to RSA 277-A. Failure to submit an MSDS and/or label on each container will place the vendor in noncompliance with the purchase order. Failure to submit MSDS and/or labels on each container may result in civil or criminal penalties, including debarment and action to prevent the vendors furnishing substances or mixtures. Vendors are cautioned to obtain and read the law referenced.
33. Payment Terms: Payments shall be made within 30 days of completion and acceptance of the project.

FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD RESULT IN THE
CANCELLATION OF AN ORDER OR CONTRACT

SPECIFICATIONS

The Town of Derry is hereby requesting firm pricing for supplying and installing a new 480 V 3 Phase 500HP variable frequency drive

PURPOSE:

The purpose of this bid invitation is to establish a contract with a company to supply and install a replacement 500 HP variable frequency drive at the Derry Effluent Booster Pump Station located at Trolley Car Lane in Londonderry which will replace the existing 500 HP Eaton 3-Phase 480 Volt 50/60 HZ 590 Amp (Cat. # SVX50014AAK2P1P3*L1P5 Style No. LA902340-003 Serial # 12773408. Comparable drives may be considered provided no additional work is necessary to install, operate or maintain the equipment. All work to replace the existing drive, including materials and labor, with a comparably operable unit shall be included in the bid. Any programming of the PLC for the new drive will be completed by the Town's contractor at the Town's expense.

COMPLETION OF WORK:

The completion of this project will require disconnection and removal of the existing drive and installation of the new drive per the manufacturer's specifications, including start-up and training.

The contractor will be responsible to obtain any electrical permits and inspections required from the Town of Londonderry.

The pump station may be taken offline to facilitate the work.

DISPOSAL OF DEMOLITION MATERIALS: The Town shall retain the old drive.

PAYMENT:

All payments will be made in accordance with the Town of Derry ordinances and procedures set forth within this document, item 33 Payment terms.

INSPECTION:

The work must be inspected and approved by the Public Works Department prior to acceptance and payment.

The Contractor is responsible for any inspections required by the Town of Londonderry.

EXCEPTIONS/DEVIATIONS:

If the Bidder has any exceptions or deviations, please submit those on your own letterhead along with the bid.

GENERAL:

Bid prices shall remain firm for the duration of the contract.

The Town reserves the right to terminate the contract entered into as a result of this bid if goods and services are at any time deemed to be unsatisfactory.

The contractor shall be responsible for the disposal of all construction and demolition debris generated by this project.

The successful bidder must provide the Town of Derry a certificate of Liability Insurance of no less than one million dollars (\$1,000,000.00)

The successful bidder must provide a certificate of insurance for Workers' Compensation as required by New Hampshire Revised Statutes Annotated (NHRSA) 281-A.

Hours of operation for completion of this project will be Monday through Friday, 7am – 5pm unless otherwise approved by the Town of Derry, Dept. of Public Works.

All workmanship, exclusive of defective materials, must be warranted for a period of no less than two (2) years from the date of installation by the contractor.

MINIMUM SPECIFICATIONS:

I

TAG	DESCRIPTION	RATING	CONTROL	COMMENT
BPS-VF-1	BPS High Service Pump Variable Frequency Drive BPS-HS-1	480 3 phase, 500 HP Variable Torque	From PLC System and manual	Free Standing NEMA1 with 3% line reactor 18 Pulse

GENERAL

- A. Ref: SKE-2. The free standing 500 HP Drive shall fit in the space provided and in submitting their bid, the contractor guarantees that the drive will fit in the available space.

II REFERENCE STANDARDS

- A. NEMA ICS 2 - Industrial control devices, controllers and assemblies.
- B. UL 845 - Standard for Motor Control Centers.
- C. UL approved
- D. VFD must meet or exceed IEEE-519 harmonic distortion voltage and current limits
- E. Variable frequency drive shall be listed by Underwriters Laboratories (UL)
- F. The drive shall comply with Federal Communications Commission requirements under part 15 Rules for Radio Frequency Interference and IEEE 519 for 5% maximum harmonics.

III INSTALLATION

- A. Environmental
 1. Ambient operating temperature range - 10 to 40°C
 2. Humidity: 5 to 95%, non-condensing.
 3. Altitude: 0 to 3300 feet above sea level.
- B. Electrical
 1. Input line voltage: 480volts, 3-phase, 4 wire service 60 Hz.
 2. Motor nameplate voltage: 460 volts, 3-phase, 60 Hz.
 3. Output frequency range: 0 to 60+ Hz.

4. Minimum drive efficiency: 95% at 100% speed.
5. Current rating: 110% (min) output rated current continuous at full speed, 150% for one minute.
6. Power loss ride through: 16 ms.
7. Input line fuses shall be required and provided inside VFD enclosure.
8. External control circuit voltage: 24 V AC/DC, maximum.
9. VFD shall provide 24 V de control power.
10. VFD shall be provided with an auxiliary contactor to energize/de-energize motor heaters when the drive is not running. Heaters shall be 120 Vac single phase thermostatically controlled. The drives shall provide 500 watts of 120 Vac power for heater operation, including line fuses.
Drive shall have input trip function for high motor winding temperature.
12. The drive control circuit will provide for external trips on high discharge pressure and 1)for the EPS, low wet well level and 2) for the BPS loss of flow path (isolation valves not open), low suction pressure.

C. The drive shall include the following protective features with status indicators:

- 1 . Over voltage.
2. Under voltage.
3. Over current.
4. Ground fault.
5. Over temperature.
6. Phase loss/blown fuse.
7. Running overload protection.
8. Common alarm contact for external user.

D. The power circuit design shall be such that the following conditions will not damage the drive:

- 1 . Single or three-phase fault from line-to-line or line-to-ground.
2. Opening of all three phases during operation by disconnect switch at motor location.

E. VFD shall be programmable with a keypad display.

F. Internal calibration adjustments:

1. Minimum speed.

2. Maximum speed.
3. DC boost.
4. Acceleration/deceleration rates.
5. Stop mode (ramp or coast).
6. Automatic restart after fault trip with lockout after five attempts to restart.
7. Anti-wind milling adjustable brake time.
8. Adjustable volts/Hertz.

G. Unit mounted operator controls:

1. Drive keypad display
2. PID values (optional)
3. Speed adjust potentiometer.
4. Indicating speed meter.
5. Power ON light.
6. Alarm reset switch.
7. HOA switch to allow manual operation of drive.

H. Provision for remote external controls:

1. Two wire ON-OFF control - VFD start stop.
2. Analog Input: for speed setpoint
3. Analog output (2), one for motor current, one for motor speed (tied to PLC)
4. Digital Outputs (2): Drive Running, Drive Fault
5. Digital Inputs: Start/Stop, enable (trips from pressure, one pump run interlocks and emergency stop push button), Auxiliary for high motor winding temperature. Speed select signal for Hand-Off-Auto.
6. Hand-Off-Auto switch and Local Speed Pot.
7. HMI door mounted programming and indicator module.

I. TESTING

1. The variable frequency drive shall be tested in the manufacturer's plant. The test shall consist of manufacturer's standard factory tests.
2. The following minimum test and checks shall be made on-site before energizing the motors and associated variable frequency drives.

1 . Megger terminals and buses for grounds after disconnecting devices sensitive to megger voltage. De-couple motor from pump for initial electrical testing

2. Check all mechanical and electrical interlocks for proper operation.

J. STARTUP

1. The contractor shall provide a factory trained technician to assist with the initial startup and testing of the VFD. Testing shall include start and test with the motor uncoupled from the pump. And test with the pump coupled to the motor (actual operating conditions).
2. Start each drive and motor. Verify the motor accelerates smoothly and that speed can be controlled and that all drive input and output functions operate properly (signals to and from the PLC).
3. Operate drive in manual and automatic modes.
4. Following satisfactory checkout of the drives with the motors uncoupled, couple the motors to the pumps and retest drive operation.
5. In conjunction with the pipeline startup, verify that VFD controls motor (pump) speed so as to maintain effluent flow per the control program requirements (see Div. 17).
6. Verify that PLC starts and stops VFD when the VFD control is in the AUTO mode.
7. The VFDs will need to be programmed to limit maximum speed and/or acceleration/deceleration rates to minimize pressure surges in the effluent pipe line. The 500 HP drives are to have a hard wired interlock that prevents both VFDs from running at the same time. Only one 500 HP pump at the EPS and BPS can be in operation at one time.

K. Site Testing:

1. Harmonic Distortion: The contractor shall furnish the services and equipment to measure Voltage and Current distortion levels under actual pumping conditions to verify harmonic distortion is within the limits of Table 10-3 of IEEE519-1992.
2. VFD(s) which exceed the cited limitations for harmonic distortion limitations shall be modified in the field as required at no expense to the Town to effect compliance. If equipment is modified, site harmonic testing shall be repeated at no extra cost to the Town.

III SUBMITTALS

A The successful bidder will be required to submit shop drawings per the following.

1. Submit complete catalog information and shop drawings for all materials and equipment.
2. Product Data: Include dimensions, mounting arrangements, location for conduit entries, shipping and operating weights, and manufacturer's technical data on features, performance, electrical ratings, characteristics, and finishes.

IV. DELIVERY

A. The Bid shall include all costs associated with the fully insured shipment of the equipment from the

supplier to the project job site. Material shall be delivered during normal business hours (7 AM to 3 PM) Monday through Friday.

V. FACTORY ASSISTANCE

- A. The Bid shall include all costs associated with a factory representative to assist with the commissioning of the equipment specified. This includes field testing and harmonic distortion tests.

V. WARRANTEE

- A. The manufacturer/supplier shall provide a complete warranty for all parts and materials for a minimum period of two years from acceptance by the Town or when put into operation. If manufacturer/supplier's warranty is in excess of this period then supply the standard warranty and so state in the bid.

BID SCHEDULE

PROPOSAL FOR: **Trolley Car Lane Sewer Booster Pump Station
Replacement 500 HP Variable Frequency Drive**

DATE & TIME: MARCH 25, 2022, AT 2PM

The undersigned, as Bidder, hereby declares that before preparing this bid he/she carefully read the specifications and hereby agrees that if the proposal is accepted he/she will contract with the Town in accordance with the specifications, terms, and conditions as spelled out in this sealed bid invitation.

Supply and install all components specified:

\$ _____ Price in Words: _____

This form must be signed. All signatures must be original and not photocopies.

Authorized signature & title of Bidder

Print or type name & title of Bidder

Company Name (Corporation/general partnership organized & existing under the laws of the State of ____)

Address

City, State, Zip

Date Quotation Made: _____ Email Address _____

Phone #: _____ Fax #: _____

Minor exceptions to the above specifications must be duly noted on your letterhead as a separate sheet. Please check here if you have exceptions. ____