

BID PACKAGE 2020

RTK Base/Rover GNSS System
and
Robotic Total Station

Bid Opening 10:00a.m. June 15, 2020
4th Floor Conference Room
602 S Main
Joplin, MO 64801

Department of Public Works
602 S. Main Street
Joplin, MO 64801
Phone: (417) 624-0820
(417) 625-4738 (FAX)

NOTICE TO BIDDERS

The City of Joplin, Missouri will accept sealed bids until 10:00 A.M., June 15, 2020, at the Public Works Department located on the 4th Floor at 602 South Main Street, Joplin Missouri, 64801 (or by mail to 602 South Main Street, Joplin, Missouri, 64801) to PURCHASE the following:

ONE (1) NEW RTK BASE/ROVER GNSS SYSTEM
ONE (1) NEW ROBOTIC TOTAL STATION
ONE (1) NEW DATA CONTROLLER WITH FIELD SOFTWARE
ANY AND ALL OTHER ITEMS NEEDED TO FUNCTION AS A COMPLETE SYSTEM

The City reserves the right to evaluate all bids, to reject any or all bids and re-bid at a later date. The City may waive any irregularities in the bid or negotiate variances from specifications, and make awards that are in the best interests of the City. The City will have final decision in all matters regarding acceptance of bids and issuance of awards.

The City encourages minority and female owned businesses to submit bids on all City purchases.

INSTRUCTIONS TO BIDDERS

The City of Joplin, Missouri proposes to **PURCHASE** the following:

*** ONE (1) NEW RTK BASE/ROVER GNSS SYSTEM**
*** ONE (1) NEW ROBOTIC TOTAL STATION**
*** ONE (1) NEW DATA CONTROLLER WITH FIELD SOFTWARE**
*** ANY AND ALL OTHER ITEMS NEEDED TO FUNCTION AS A COMPLETE SYSTEM**

All bids shall have firm-fixed F.O.B. Joplin, Missouri price and shall be honored for a minimum of ninety (90) days following the bid opening.

All bids shall be exclusive of Federal, State, and City taxes.

It is the intent of the specifications included with this bid document to generally describe the item(s) desired in sufficient detail as to secure bids on comparable items. All parts not specifically mentioned which are necessary in order for the item(s) to perform as intended shall be included. The strength, quality of workmanship, and material shall be in accordance with the best trade practices.

Specification variances, manufacturer's literature and additional information should be attached to the bid form. All blanks on the attached bid specifications shall be filled in completely and accurately. Any bid not meeting this requirement may be considered non-responsive.

Any protest or grievance must be issued in writing and delivered to the office of the Director of Finance within ten (10) days following the bid opening. Any protest filed after this time period has elapsed will not be considered.

The City encourages selection of products manufactured, assembled and/or produced in the United States, as long as the quality and price are comparable with other items bid.

Once the bids are reviewed and evaluated, the successful vendor will be notified, in writing, and will receive an authorized City of Joplin purchase order. Verbal acknowledgments will not be considered as official notification and will not obligate the City in any way. Delivery or performance should not be completed without the receipt of an authorized purchase order.

Minimum information to be submitted with each bid shall consist of the following:

1. Verification of Bid Specifications (with variances noted)
2. Bid Form

MARK BID ENVELOPES: "BID #2020-RTK BASE/ROVER GNSS SYSTEM and ROBOTIC TOTAL STATION"

Questions concerning the specifications and bidding procedures should be directed to

Assistant Public Works Director Dan Johnson, at 417-624-0820 Ext. 538. Or

City Surveyor Chad Weller at 417-624-0820 Ext. 581

CITY OF JOPLIN

SPECIFICATIONS
FOR

1. GNSS Receivers

Satellite Tracking:

572 GNSS channels

GPS L1CA, L1P, L2P, L2C, L5

GLONASS G1, G2, P1, P2

BeiDou B1, B2

Galileo E1BC, E5a, E5b

QZSS L1CA, L1C, L2C, L5

SBAS

Real-Time accuracy (RMS)

Real-Time Kinematic position (RTK)

Horizontal: 8 mm + 1 ppm RMS

Vertical: 15 mm + 1 ppm RMS

Real-Time performance

Fast RTK Initialization-Typically less than 10 sec for baselines < 20 km

5Hz real-time position rate

Supported data formats: CMR, CMR+, RTCM 2.1, 2.3, 3.0, 3.1, 3.2 including MSM

Listen-Listen subscription service available for Base/Rover operation via cellular, for long range RTK correction. (6 months included at no charge)

Radio

Frequency Range: UHF 410 - 470 MHz

Channel Spacing: 12.5 KHz / 25 KHz

Emitting Power: 0.5 / 1 W

Operating Range: 3 - 5 km typical

Physical characteristics

Size, 14.1 D x 14.0 H cm (5.5 D x 5.5 H in)

Weight, <1.38 kgs (<3.05 lbs)

Digital User interface, with indicators for Power, Tracking, Bluetooth, Radio operations

WebUI to upgrade firmware, manage settings, & download data via Wifi on a smart phone, tablet, or PC

Lemo ports for external power or radio

Bluetooth 2.1 + EDR

Internal 4G - Penta Band LTE - 700/700/850/AWS

(1700/2100)/1900 MHz - FDD-Band (13, 17, 5, 4, 2) modem

Memory

Internal 8 GB, accessible through USB and Wi-Fi.

Micro SD Expansion slot for up to 64 GB memory

Operation

RTK rover or base

RTK network rover

Environmental characteristics

Operating temperature: -22° to +140°F

Storage temperature: -40° to +176°F

IP67 waterproof, sealed against sand and dust

Power characteristics

Hot-swappable 11.1 V - 37.74 Wh lithium (2 per kit)

Battery life: up to 12 hours in RX mode (from 2 batteries)

External DC power: 9-22 V

12 volt car charger cable

2. Robotic Total Station

Angle measurements

Accuracy, 5 seconds

Angle reading, Absolute, continuous, diametrical

Angle Compensation, Quadruple axis

Distance measurements

Prism range up to 10,000 meters, with accuracy of 1 mm + 1.5 ppm up to 3500 meters

500 meter reflectorless range with 2 mm + 2 ppm accuracy

ATR range up to 800 meters

Physical specifications

Weight < 5.3 kg (w/o battery and tribrach)

Operating temperature -20°C to 50°C

Storage temperature -40°C to +70°C

Protection class IP55 dust and waterproof rating

Humidity 95%, non-condensing

Power

Internal Removable Li-Ion Battery 4.4 Ah / 7.4 V

Operating time 7+ hours per battery

Battery charger includes 12 volt car charger cable

User interface

One person, remote controlled operation

Laser plummet, adjustable brightness

Long range BT, 1000ft+ range

Serial, USB, internal Bluetooth, LR Bluetooth handle and external power port

Fast 360 degree search with passive prism (no electronics required at prism for 360 search)

Windows CE operating system

Full VGA color touch screen

3. Controller

Processor and memory

1 GB RAM

1.0 GHz ARM Cortex A8 i.MX53 processor

Operating system

Microsoft® Windows® Embedded Compact 7

Memory and data storage

8 GB flash storage

User-accessible micro SD / SDHC slot

Display

Active viewing area: 4.3" (109 mm) VGA LCD TFT (640 x 480) Landscape Display

High-visibility backlit LCD

Keyboard

Full numeric and QWERTY keypad

Adjustable backlit keys

Battery

Intelligent Li-Ion battery 3.7VDC @ 10600 mAh, 38.7 Whr

Operates 20+ hours on a single charge

Charges in 2 to 4 hours

Battery easily changeable in field

Environmental

IP68 waterproof and dustproof

Operating temperature: –22°F to 140°F (–30°C to 60°C)

Storage temperature: –22°F to 158°F (–30°C to 70°C)

Bluetooth® wireless technology is rated to –4°F (–20°C)

Wireless connectivity options

Bluetooth® wireless technology, 2.1+EDR, Class 1.5, line-of-sight range

up to 1500 feet (450 meters) when paired with Class 1 Bluetooth device

Wi-Fi® 802.11 b/g/n with extended range

Software specifications

Must be fully compatible with hardware listed elsewhere in this bid

Must be able to open and use .loc, .crd, .dxf, .ref, and .grd files from the city's engineer

Must be able to stake out points from a .crd file and lines from a .dxf file

Must be able to stake out elevations from .grd files

Must be able to collect points in a .crd file

Alternatives or Exceptions to Specifications

Alternatives or exceptions to these specifications will be considered by the City of Joplin, if due to evolving technology, and in the best interest of the City of Joplin. Whether or not any alternatives or exceptions will be considered, will be at the sole discretion of the City of Joplin. Any, and all alternatives or exceptions in the vendor's response must be very clearly identified and documented by the vendor.

Delivery

The complete RTK System and all other components as specified, shall be delivered: FOB Destination to the City of Joplin, MO. The delivery is to be all encompassing. Partial shipments will not be accepted. It is the responsibility of the vendor to ensure that all the items bid are currently inspected and inventoried for completeness upon receipt. At the City's discretion training shall be completed as soon as possible, but no later than 30 days after full receipt of order.

Training

The successful vendor shall contact the City of Joplin, MO to arrange a one-day training session. This training is to be conducted by a technical representative of the vendor. The training sessions will be held on site at the City of Joplin.

Demonstration

Bidders may be required to present an on-site demonstration of their system's ability to meet the requirements of these specifications prior to award of the contract. Demonstrations shall be conducted at the City of Joplin's office within five (5) business days of the City's demonstration request. Failure to conduct a demonstration in accordance with this section or failure of the system to meet specified requirements during the demonstration will result in rejection of the bid. The City of Joplin will be the sole judge as to whether a system meets the requirements.

Technical Advisor

The vendor shall have a technical advisor available to respond by phone, within twenty-four hours during normal business hours, if problems or questions arise, and consultation is necessary.

Warranty

The vendor shall warrant that all items furnished shall conform to the requirements of this contract, and shall be free from defects in design, materials, and workmanship. The purchase price of the RTK System will include as a minimum, a two-year warranty on the GNSS receivers and controller, 1 year on robotic total station, and 90-day warranty on batteries, chargers, cables and

accessories. The successful bidder shall provide at no charge, within seventy-two hours, a comparable piece of equipment for the City's temporary use at any time the equipment is out of service due to warranty repair work for seventy-two hours or longer, during the warranty period. The bidder shall maintain a service center within 100 miles of the City of Joplin. All repair work (if necessary) shall be performed by factory authorized technicians. All equipment bid, must be new, must be in current production, and generally commercially available as of the date of the purchase. Parts, including firmware, must be available for a minimum of two years from the bid date. All parts not specifically mentioned which are necessary for the units to be complete and ready for operation, or which are normally furnished as standard equipment shall be furnished by the successful bidder at the bid price.

CITY OF JOPLIN

BID FORM

DESCRIPTION: BASE/ROVER GNSS SYSTEM

Manufacturer: _____

Model: _____ Year: _____

BID PRICE/DELIVERED $_____

DESCRIPTION: ROBOTIC TOTAL STATION

Manufacturer: _____

Model: _____ Year: _____

BID PRICE/DELIVERED $_____

DESCRIPTION: DATA CONTROLLER

Manufacturer: _____

Model: _____ Year: _____

BID PRICE/DELIVERED $_____

TOTAL BID PRICE/DELIVERED $_____

F.O.B. JOPLIN, MISSOURI

DELIVERY TIME AFTER RECEIPT OF ORDER:_____DAYS

COMPANY_____

ADDRESS_____

_____

SIGNATURE_____

TELEPHONE_____

EMAIL_____

MBE_____WBE_____

MARK BID ENVELOPE: "BID#- 2020 RTK BASE/ROVER GNSS SYSTEM and ROBOTIC TOTAL STATION"