New York State
Department of Transportation

Request for Information (RFI) #RFI2019-03
for
Survey Equipment for Construction

November 8, 2019

New York State Department of Transportation
50 Wolf Road
Albany, New York 12232
TABLE OF CONTENTS

Contents
1. INTRODUCTION ................................................................................................................... 3
2. ANTICIPATED PROJECT DELIVERABLES ...................................................................... 3
3. TOPICS AND QUESTIONS .............................................................................................. 4
4. RFI CONTACT INFORMATION ....................................................................................... 7
5. RESPONSES ....................................................................................................................... 8
6. ADMINISTRATIVE GUIDANCE FOR RESPONDENTS ................................................... 8
7. CONFIDENTIALITY ........................................................................................................... 9
8. RFI QUESTIONS ............................................................................................................... 9
9. RFI SCHEDULE ............................................................................................................... 10
The New York State Department of Transportation (NYSDOT) hereby issues this “Request for Information” to determine the current industry standards and technology advancements related to survey equipment for use on our Capital Program projects.

1. INTRODUCTION
   A. Purpose
      NYSDOT is interested in receiving information pertaining to survey equipment for data collection purposes on its’ construction projects. It is NYSDOT’s intent to provide Regional staff with GNSS, conventional and LiDAR survey equipment, including all the necessary hardware, software, training, maintenance, and support necessary to collect data on its’ capital projects. NYSDOT is seeking to provide approximately seventy (70) GNSS receivers, twenty (20) robotic total stations, twenty (20) digital levels, five (5) robotic scanning total stations as well as three (3) laser scanners (terrestrial LIDAR) with all the necessary software and accessories. NYSDOT is interested in learning how industry leading manufacturers/vendors would configure these surveying hardware/software packages to meet the wide range of needs and functions the staff receiving this equipment perform as specified below in Section 3.A. These numbers are estimated for RFI purposes and are subject to change depending upon cost proposals and available funding.

   B. Background
      The current equipment contract provides equipment for use on projects for a variety of purposes including, but not limited to, producing engineering and boundary control, verification of asset locations, verification of feature layout for bridge, highway and related construction projects, area/length/surface measurements, surface data collection for comparison to provide accurate volume calculations, as well as create accurate as-built information and plans, among other purposes. The current contract expires on May 31, 2021 and NYSDOT is working to create the contract that will succeed it.

2. ANTICIPATED PROJECT DELIVERABLES
   A. All equipment shall meet the required standards and procedures in the NYSDOT Land Surveyors Standards and Procedures manual. This information can be found at: https://www.dot.ny.gov/divisions/engineering/design/design-services/land-survey/standards-procedures.

   B. The GNSS receiver package shall provide a seamless flow of field data from the Data Collection software to Bentley’s InRoads and Autodesk Civil 3D software. These GNSS rover packages shall include a Geodetic GNSS receiver with integrated antenna, accessory equipment for surveying, and planning/post processing software. GNSS rovers shall include a CDMA modem for connecting to NYSNet, NYSDOT’s CORS Network and shall be capable of receiving RTCM Version 3 MAC Network RTK (NRTK) corrections. GNSS
receivers shall also include an integrated license free radio unit, with a minimum of 2-mile range, to enable use of RTK on a project using a local base-rover configuration.

C. Both types of robotic total stations (scanning/non-scanning) shall meet the criteria for performing at least second order class II traversing as defined in the Standards and Specifications for Geodetic Control Networks by the Federal Geodetic Control Committee, 1984 found at: https://www.ngs.noaa.gov/FGCS/tech_pub/1984-stds-specs-geodetic-control-networks.pdf. These total station packages shall include a fully robotic total station instrument with reflectorless EDM technology, imaging capabilities, scanning capabilities (where applicable), a separate hand-held survey controller, software, training, tripods and various miscellaneous items.

D. The survey controllers provided for the total stations and GNSS receivers would ideally be the same make and model and make use of the same data collection software. Each survey controller shall be capable of collecting data from the total station and/or the GNSS receiver.

E. Each GNSS receiver shall be capable of being integrated on the total station prism pole rod to allow the survey controller to toggle between the total station and GNSS and store data from either device in the same job. The total station package shall include all necessary hardware and software to integrate the GNSS receiver on the prism pole.

F. The Digital Level Package shall provide a complete seamless flow of field data from the Digital Level to the processing software and into Bentley InRoads and Autodesk Civil 3D software. The Digital Level package shall also meet the criteria for performing at least second order class II leveling as defined in the Interim FGCS Specifications and Procedures to Incorporate Electronic Digital/Bar Code Leveling Systems@ publication. This Digital Level Package shall include a Digital Level, four (4) meter sectional dual face polymer staff, software, training, tripods, and various miscellaneous items, as specified below.

G. The Laser scanner shall include all tripods, targets, carrying cases, software, licenses and accessories necessary to perform laser scanning surveys and to process data to deliver into Bentley Microstation, Bentley InRoads and Autodesk Civil 3D.

H. Maintenance, training and support shall also be included in this contract for all supplied hardware, software and accessories. Maintenance will be provided free of charge for any item in this contract that fails due to normal use.

I. These packages shall be provided to NYSDOT by a single vendor who will demonstrate and guarantee that the hardware and software components function together and meet NYSDOT’s requirements.

J. The company who is manufacturing and providing the hardware and software shall have been in existence for at least five (5) years and must have a proven product prior to the proposal due date.

3. TOPICS AND QUESTIONS
   A. Functionality and Interoperability
1. The equipment described above is used in a variety of different ways, in vastly different environments, requiring agility and range in functionality such as:
   a. Producing survey control requiring high accuracy and precision, with the need/desire to take side shots while traversing.
   b. Rapid positioning and orienting of the total station by resection from NRTK/RTK points observed during the resection routine.
   c. Performing a calibration/localization or creating a local coordinate system based on existing control.
   d. Switching back and forth between tasks that are acceptable via GNSS and other tasks requiring higher accuracy of a total station while staying in the same job/project.
   e. Working in the same area of a project site at various stages of the project sometimes wanting to see previous information collected, other times not.
   f. Loading existing CADD line work and confirming locations of existing features/checking accuracy of existing data (2D/3D lines, alignments/profiles and surfaces/DTMs/TINs, etc.).
   g. Loading a variety of proposed mapping and design data to check/confirm contractor layout/grades prior to installation of structures/features/roadway materials for roads, gravity and pressure pipe systems, bridge structure components, utilities, pavement markings, etc.
   h. Using GNSS in close proximity to buildings and or near/under tree canopy.
   i. Checking feature layout/ material surface grades in congested construction work zones with numerous reflective objects (work zone signs, cones barrels, vehicles and equipment with flashing beacons, live traffic, etc.).
   j. Constant interruption of line of sight/lock to prism from total station due to vehicles/equipment/people/other surveyors/prisms moving around on sight and needing the total station to search and reacquire lock on the correct prism.
   k. Utilize office processing software (with all modules necessary) to process and combine GNSS, total station and level data and apply that to the same point(s) throughout the adjustment process.
   l. Utilize processing software to prepare design data for construction layout, including methods that optimize the highest functionality of the survey field software/hardware.

B. Lease or Purchase

1. NYSDOT is considering options as to how to procure the equipment described above under the next contract. The three (3) options NYSDOT is currently considering includes having the vendor procure the equipment under the contract via either:
   a. Lease;
   b. Purchase at a cost to NYSDOT that is at or below the current OGS state contract rates and be reimbursed for the total cost at the start of the contract; or
   c. Purchase at a cost to NYSDOT that is at or below the current OGS state contract rates and have the total cost be reimbursed via equal amortized costs over the term of the contract

2. Would you be able to accommodate all 3 of the above options?

3. Is there an option that you would recommend – either one of those above or perhaps another method? Have you worked with other states and/or state agencies? If so, please describe how that state procured the equipment.

4. Please supply an itemized estimate, to the nearest $25,000/$1,000 (total/individual item respectively), for each option that you could accommodate.
5. If NYSDOT determines that purchase is the best option, are you an officially designated vendor with the State of New York?

C. Delivery and Rollout
1. NYSDOT would like to have the equipment deployed, setup and fully operational prior to the completion date of the current contract. This will avoid a potential gap in available equipment to complete daily work and data collection. Would you be able to fulfill this request and how?
   a. NYSDOT would require the equipment be individually deployed to the Main Office and 11 Regions, setup and the software to be fully functional prior to equipment acceptance.
   b. NYSDOT would supply the vendor with names and work locations where the equipment will be deployed. Would you be able to assist with serial numbers and such for asset tracking?

D. Training
1. NYSDOT will request yearly training to be included in the proposal. Do you have any recommendations on how this will be handled?
   a. NYSDOT has travel restrictions that currently limit potential training to a maximum of three days at one time. How would you propose to accommodate the training requirements keeping within our travel restrictions?
   b. Training will encompass all the equipment, software supplied and available updates.
   c. Would the training content be made available to the trainees, for use at a later date, and how would you propose to deliver the material, i.e. handouts, electronic files, videos, etc.?

E. Support
1. NYSDOT has construction projects that work 24/7. How would you propose to handle support requests, questions and calls, both during and after normal business hours?

F. Maintenance and Repairs
1. As with any equipment and software, NYSDOT anticipates potential equipment repairs will occur and annual maintenance will be necessary to keep the equipment functioning properly. How do you propose to handle these situations?
2. In situations where equipment needs to be recovered by the vendor for repair/replacement, NYSDOT requires that additional equipment be provided as “loaners” during these “break-fix” instances. Loaner equipment shall be deployed to the same location where the broken equipment was located, within forty-eight (48) hours of notification, and shall be fully functional at the time of repairs, including all necessary appurtenances and accessories. Please describe how you will fulfill this request.

G. Software
1. NYSDOT anticipates that the survey equipment shall provide a seamless flow of data from the total stations, GNSS receivers, digital levels and multi-stations into both Bentley Inroads and Autodesk Civil 3D software following NYSDOT’s standards. There should also be a seamless flow of data from Bentley Inroads and Autodesk Civil 3D software back into the survey equipment for construction stakeout and inspection. Seamless flow shall mean that minimal or no reformatting of the data will be necessary.
Ideally, the raw data format should be capable of being directly transferred to and from Bentley Inroads and/or Autodesk Civil 3D. However, if the recommended data workflow process includes reformatting steps, NYSDOT will request a demonstration to better understand the nature and complexity of the workflow.

a. Please describe how you would accommodate this.
   i. Will any add-on software be necessary to fulfill the request?
   ii. Will upgrades be available as technology advances or changes?
   iii. Will NYSDOT need support from the New York State Office of Information Technology Services (NYSOITS) for any software inclusion into NYSDOT’s current system?

H. Accessories
   1. What accessories would you suggest being included to fulfill the RFI intent? Examples are listed below, but not limited to:
      a. High gain antenna.
      b. Repeaters for base/rover setups.
      c. Large anti-glare screens on the survey controllers.
      d. Additional hard drives and/or memory.
      e. Mini prisms and mini prism poles.
      f. Extra batteries.

I. Licenses
   1. All software licenses necessary to make all equipment fully functional shall be included.
      a. NYSDOT would like to know what licenses, if any, will be required for each piece of equipment supplied.

J. Payment
   1. NYSDOT is considering a contract term of five (5) years from the date of final contract execution by the NYS Office of the State Comptroller (OSC). The primary payment method would be on a quarterly (3-month time period) basis for performing the scope of services, over the 5-year contract period (20 total payments/5 years).
      a. Would this work for you? Recommend alternative payment schedules in lieu of this option.

4. RFI CONTACT INFORMATION
Interested firms are encouraged to submit a written Expression of Interest, including a cover letter on company letterhead, characterizing their interest and background. Information pertaining to ideas, high level concepts, design issues and practical knowledge gained from relevant experience is being sought. NYSDOT may, at its discretion, invite interested firms to visit the Department at its Main Office, 50 Wolf Road, Albany, New York, for further discussions.

Please Note: This IS NOT a Request for Proposals. Rather, it is an invitation to inform NYSDOT of the current capabilities of survey equipment and accessories available in the market. Information obtained may be used to develop a needs requirement upon which future procurement might be based. If further discussion is required or should questions arise, please contact the NYSDOT contact person listed below.

NYSDOT Contact Person:
   Ms. Micheleen Gregware, CMS II
Mail or E-mail Expression of Interest To:
US Mail:
Ms. Micheleen Gregware, CMS II
New York State Department of Transportation
Contract Management Bureau, 6th Floor
50 Wolf Road
Albany, NY 12232
Attention: RFI #2019-03

E-mail: Micheleen.Gregware@dot.ny.gov
Phone: (518) 485-8620
Fax: (518) 457-8475

Respondents who mail their “Expression of Interest” are requested to additionally provide an electronic copy in Adobe PDF compatible format. These formats are also required for e-mail submissions.

5. RESPONSES
Interested firms are encouraged to submit a notice of interest on company letterhead along with a brochure and/or a detailed description of such product(s). The information furnished should document the general functionality of the equipment and software and how it might potentially meet the minimum requirements of a large State Transportation Agency such as NYSDOT. Expressions of Interest shall be limited to no more than 1-2 pages in length. Descriptive literature shall be limited to no more than 6-10 pages, exclusive of price sheets. The Department may subsequently invite a representation of firms to provide a one to two-hour demonstration for informational purposes. Please include in your response:

- Anticipated standard COTS product licensing requirements.
- Representative timeline for typical product implementation and roll out.
- Representative cost estimates (+/−$25,000) for all equipment, hardware, software, maintenance, training and support.
- Representative staffing to fulfill training/support.

6. ADMINISTRATIVE GUIDANCE FOR RESPONDENTS
NYSDOT desires a concise response which conforms to the requested information described in Sections 1 through 3 of this document. Should you choose to submit a response to this RFI, you are asked to provide one original and one electronic copy of the submission to the attention of the contact specified above, in Adobe PDF compatible format. Responses should be organized into two sections:

1. Corporate information, including company name, contact name and title, phone, email address, main office location, and mailing address.
2. Response to desired features, as indicated in Sections 1 through 3 of this RFI.
7. CONFIDENTIALITY
All RFI response materials submitted by a respondent shall become the property of NYSDOT.

All materials submitted by respondents are considered agency records pursuant to New York State’s “Freedom of Information Law” (FOIL) (See, Public Officers Law, Article 6). Agency records are generally available to the public upon request. However, pursuant to Public Officers Law, Section 87(2)(d), NYSDOT may “deny access to records or portions thereof that: are trade secrets or are submitted to NYSDOT by a commercial enterprise or derived from information obtained from a commercial enterprise and which if disclosed would cause substantial injury to the competitive position of the subject enterprise.”

In order for respondents to claim the exemption from disclosure provided by this provision of law, respondents must mark as “CONFIDENTIAL” any proprietary information contained in their RFI response that they wish to protect from further disclosure or dissemination.

By the act of submitting a response to this RFI, respondents acknowledge that:

1. The submission of the response shall be the respondent’s sole opportunity to claim such exemption from disclosure or dissemination of information contained in their response; and
2. Failure to mark such information as “confidential” will constitute a waiver of confidentiality, and will release NYSDOT and the State from any liability for disclosure or dissemination thereof.

NYSDOT is charged with making the final determination concerning any exemption from disclosure claimed by respondents. In addition to so marking the information, respondents must provide NYSDOT with a detailed written justification for classifying the information as “CONFIDENTIAL”. Undocumented and unexplained claims for exemption from disclosure or dissemination shall not be binding upon NYSDOT or the State. A conclusory declaration that disclosure would be injurious will not suffice. Respondents must assert that disclosure of claimed proprietary information, their written justification for exemption, or any portion thereof would be injurious, and must provide sufficient detail to support their claim for exemption from disclosure or dissemination under FOIL.

Respondents acknowledge that NYSDOT may be required to release any such information if so ordered by a court of competent jurisdiction. In such event, the Respondent will be notified of the commencement of legal action to compel disclosure, and the Respondent must either participate in the defense of such action or waive its claim of confidentiality. Failure to participate in the defense of such action shall be deemed a waiver of any claim of confidentiality.

8. RFI QUESTIONS
Respondents are encouraged to submit questions via e-mail to the designated NYSDOT contact person, if clarification is required, or for any reason concerning this RFI.

All questions concerning this RFI are requested to be submitted to the email address in Section 4, by noon (EST) on December 6, 2019. Questions and answers to all questions will be compiled, publicly posted and shared with all vendors that have either submitted questions or registered their interest in the RFI by COB December 13, 2019. At its discretion, NYSDOT may contact vendors who submit questions for clarification before issuing a response.
9. RFI SCHEDULE

<table>
<thead>
<tr>
<th>RFI Release:</th>
<th>November 8, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions Due:</td>
<td>December 6, 2019</td>
</tr>
<tr>
<td>Answers from NYSDOT Anticipated:</td>
<td>December 13, 2019</td>
</tr>
<tr>
<td>RFI Responses Due:</td>
<td>January 17, 2020</td>
</tr>
<tr>
<td>Possible Follow-Up Questions:</td>
<td>Week of February 3, 2020</td>
</tr>
<tr>
<td>Possible Interviews:</td>
<td>Week of February 17, 2020</td>
</tr>
</tbody>
</table>