



Good Life. Great Journey.

DEPARTMENT OF TRANSPORTATION

Request for Qualifications

Professional Services for Photogrammetry, Aerial Photography, Airborne LiDAR

February 23, 2022

Statements of Qualifications are due Wednesday, March 9, 2022, 1:00 P.M.

GENERAL

In accordance with Nebraska Consultants' Competitive Negotiation Act ([Neb. Rev. Stat. §81-1702](#)), the Brooks Act ([40 USC 1101](#)), and [23 CFR 172.5](#), the State of Nebraska, Department of Transportation (NDOT), is issuing a Request for Qualifications (RFQ) for Photogrammetry, Aerial Photography, Airborne LiDAR. Qualified consultants are invited to submit a statement of qualifications as outlined below. NDOT's website referred to in this document is located at: <http://www.dot.nebraska.gov/business-center/consultant/>

All consultants interested in providing professional services for NDOT are strongly encouraged to review NDOT's template [IDIQ Master On-Call PE Agreement](#), [IDIQ Task Order Agreement](#), [Sample Fees and Payments Exhibit](#), and [Insurance Requirements for Professional Service Providers](#) prior to responding to this RFQ. By submitting a statement of qualifications in response to this RFQ, Consultant, and all subconsultants, agree to meet the substantive requirements of these documents. These documents can be found on NDOT's website. An agreement will not be executed unless consultant provides a current overhead schedule and proof of meeting the insurance requirements in the form of an [Insurance ACORD](#). Further information regarding insurance, including a [checklist](#) to assist in submitting an acceptable certificate, can be found at <https://dot.nebraska.gov/business-center/consultant/insurance/>.

This RFQ does not commit NDOT to award a contract, to pay any costs incurred in the preparation of a response to this request, or to procure or contract for services. NDOT reserves the right to award contracts to more than one qualified consultant, to accept or reject any or all responses received because of this request, to negotiate with any qualified consultant or to modify or cancel in part or in its entirety the RFQ, if it is in the best interest of NDOT to do so.

In accordance with Nebraska Revised Statute [84-712](#) et.seq., Nebraska Public Records Act, documents provided to NDOT are public records subject to disclosure unless consultant requests in writing that documents must be kept confidential and can demonstrate that such records are confidential under federal or state law.

SCOPE OF SERVICES

Standard Work Categories anticipated on this project are:

- 200 Aerial Photography
- 201 Aerial Photogrammetry

Information regarding the [Standard Work Categories](#) can be found on NDOT's website.

A. DIGITAL AERIAL PHOTOGRAPHY**1. OVERVIEW OF THE WORK**

The consultant shall acquire four-band color DMC II digital aerial photography (Blue, Green, Red, Near-Infrared) of requested project areas. Large-format, frame-based photogrammetric digital aerial mapping systems equivalent to the DMC II that have the same near-square image footprint and are compatible with Intergraph's aero triangulation (ISAT), mapping (ISSD), and ortho photo production (ISOP) software will also be considered. References throughout this document to the DMC II shall apply to any alternate sensor used. NDOT will use this photography for stereo compilation and orthophoto production.

2. AIRCRAFT AND CREW

The consultant shall be responsible for operating and maintaining all aircraft used in conformance with all governing Federal Aviation Administration and Civil Aeronautics Board regulations over such aircraft. Preference may be given to consultants who own the aircraft and DMC II system used. All flight crew members must have two years or more experience flying precise photographic missions for aerial surveys. The consultant shall be responsible for applying for and obtaining any required permits for access, overflight, or intrusion into restricted or otherwise limited ground access and/or airspace which may be included within a project's scope of services

3. ACQUISITION DELAYS

The consultant shall inspect and constantly monitor the photographic coverage and quality and shall undertake immediate reflights of areas wherein coverage does not meet specifications. Rejection of photography by the consultant or NDOT shall not in itself be a reason for granting a delay.

4. ENVIRONMENTAL CONDITIONS DURING PHOTOGRAPHY ACQUISITION

Aerial photography will be collected in accordance with American Society for Photogrammetry and Remote Sensing (ASPRS) Standards for Aerial Photography whereby the image acquisition shall not be secured when the ground is obscured by haze, fog, snow, smoke, dust, flood waters, or environmental factors that may obscure ground detail. There should also not be any digital artifacts that adversely affect the proper tone value of pixels because of digital image post-processing. The following weather conditions are a minimum which shall be met or exceeded during photo missions:

- a. Sun angle. Photography shall be taken when the sun angle is 30 degrees or greater above the horizon. There shall be no objectionable shadows created by relief or low solar altitude.
- b. Cloud cover. Images shall be free of clouds and cloud shadows. No photography will be accepted with clouds or cloud shadows appearing on more than 5 percent of the area in any one image file.
- c. Season. With the exception of wetland project areas, photography shall be acquired mostly during the leaf-free season in the spring and fall, and deciduous trees must be barren. Acquisition of color photography shall not begin until after March 24th, or in the event of an early spring, until the grass has turned green.
- d. Turbulence. Photography will not be taken during adverse conditions when wind and thermal currents are causing excess tilt, crab, or drift in the photography.
- e. Ground conditions. Avoiding conditions that might obscure ground detail shall be the responsibility of the consultant.

5. INTERGRAPH DMC II SPECIFICATIONS AND CERTIFICATION REPORTS

The consultant must possess a U.S. Geological Survey (USGS) Data Providers certification or equivalent. Each DMC II used shall:

- a. Be compatible with precision stereoscopic mapping instruments and with mensuration procedures used in photogrammetric surveys and in preparing accurate orthoimagery.
- b. Have enough high resolution and have a large enough field of view to provide the required ground sample distance and stereo coverage of desired ground swaths defined by project boundaries.
- c. Must capture a minimum of 8 bits per color channel.
- d. Have a manufacturer's type certification from the USGS or equivalent.
- e. Be calibrated, geometrically stable, and capable of meeting minimum specified criteria for photogrammetric mapping in accordance with ASPRS guidelines.
- f. Have a report detailing its calibration. Any incomplete reports shall be cause for rejection of the data. Calibration reports for each DMC II used will be supplied to NDOT.

6. PHOTOGRAPHIC COVERAGE

The consultant shall prepare flight plans and determine acquisition flight height and GSD based on DMC II sensor technology balanced against a project's expectations and specifications for acquiring photography. All flight lines must extend at least two frames beyond the required coverage boundary. The photographic survey areas of the project must be stereoscopically covered by successive and adjacent overlaps of photographs within the usable portion of the field of the sensor. Lack of acceptable stereoscopic coverage must be corrected by re-flights at the consultant's own expense. Except on short flight lines, a minimum of two runoff or blank frames is required between usable frames immediately prior to the start of the photography for each flight line or part of a flight line (individual flight lines may be stored in individual folders). Forward overlap in the line of flight shall average not less than 57% or more than 62% at mean elevation of the terrain unless otherwise specified. Individual overlaps shall not be less than 55% or more than 68%, excepting the situation where in a forward overlap in areas of low elevation must exceed 68% to attain the minimum 55% forward overlap in adjacent areas of higher elevation. The following specifications also apply:

- a. Junction areas between adjoining flight lines shall be covered stereoscopically by both lines (wherever there is a change in direction between two flight lines).
- b. Side overlap between adjacent parallel flight lines shall be 30% +/- 10% at the mean elevation of the terrain.
- c. Flight line deviation shall not exceed a distance greater than 10% of the width of the coverage of the photograph.
- d. Departures from flight height required shall not exceed -2% or +5% unless changed by Air Traffic Control Centers.
- e. Changes in the course of the aircraft between successive overlapping photographs within a flight line shall not exceed 3 degrees.
- f. While collecting aerial photography, the DMC II shall be compensated for crab of the aircraft, with a resultant error not exceeding 3 degrees.
- g. The tilt within a single frame shall not exceed 4 degrees nor shall the difference in tilt between two consecutive overlapping frames within a flight line exceed 4

degrees. The average tilt for all frames of the same nominal scale shall not exceed 1 degree.

- h. The combined effect of aircraft course corrections, crab, and tilt shall result in an apparent crab not greater than 5 degrees on successive frames. Apparent crab is defined as the angle between the indicated principal point and the conjugate image of the indicated principal point of the adjacent photograph within the same flight line.
- i. The photo missions shall be executed within the shortest possible timeframe to insure consistent ground and lighting conditions.
- j. All photos within a single project shall be acquired with the same DMC II.
- k. The images shall be clear and sharp in detail, and of uniform tone and degree of contrast to permit ground details to show clearly in all scene reflectance, with particular emphasis on pattern recognition in the shadow areas.
- l. The digital imagery must conform to accuracy and quality standards established by the ASPRS.

7. RE-FLIGHTS

Unacceptable aerial photography shall be re-flown at the earliest opportunity, weather permitting, by the consultant at no additional cost to NDOT, with the re-flight coverage overlapping the accepted photography by at least two stereo models.

8. CONTROL POINTS

Control point targets will be placed by NDOT survey crews. Targets will be in the form of circular shaped painted targets (36" diameter) and square shaped cloth targets (42" wide). The consultant shall give NDOT advance notice prior to beginning the aerial flights.

9. PROJECT REPORTS AND METADATA

Written progress reports must be submitted monthly. A final report on the production process and quality control information generated throughout the project will be provided at the end of the project. The consultant shall provide metadata compiled to the current standard endorsed by the Federal Geographic Data Committee for each of the data deliverables.

10. DELIVERABLES

Digital imagery acquired for NDOT projects will be the explicit property of NDOT. The consultant is expressly prohibited from retaining, using, selling, or distributing in any manner any such materials and data without the expressed written consent of NDOT. At conclusion of a project, the consultant shall deliver the following data to NDOT unless otherwise instructed:

- a. Digital metadata files compiled to the current standard endorsed by the Federal Geographic Data Committee for each of the data deliverables.
- b. Imagery/Digital Image Inspection and Flight Log Report. All reports shall be delivered in digital form as Adobe Acrobat (.pdf) documents.
- c. Digital Flight/photo index files. Digital flight line index must be included with the image files that indicate both photography center points and flight line directions. This may be provided via a kml/kmz file generated from the flight data. Additionally, date and time of image capture shall be included as a metadata field.
- d. Digital camera image exterior orientation parameters will be provided in an electronic ISPM (ISAT)/DMC II file format that is ready for use with Intergraph

ImageStation Automatic Triangulation software. This must include running Auto RO to complete Relative Orientation.

- e. Compressed color [RGB] and infrared [CIR] digital image files (ZI Compression, Q=5) that are usable with Intergraph photogrammetric software. These files will be in TIFF file format and stored on external hard drive(s).
- f. DMC II manufacturer's calibration certificate/report. Calibration reports for each DMC II used should be supplied to NDOT

11. DELIVERY SCHEDULE

For each project, the consultant shall include an estimated delivery schedule. The consultant assumes responsibility for loss of, or damage to, deliverables in shipment until delivery is confirmed in writing. NDOT will review the deliverables received in a timely manner for compliance with specifications. The consultant must agree to promptly correct all defects and/or failures to comply with specifications contained herein for which the consultant is responsible.

B. PHOTOGRAMMETRIC SERVICES

1. OVERVIEW OF THE WORK

Consultants will use photogrammetric technology provided by the Zeiss Imaging (Z/I) ImageStation Software Suite to create accurate computerized topographic maps from aerial photography.

2. REQUIREMENTS

A licensed professional survey engineer or an American Society for Photogrammetry and Remote Sensing (ASPRS) certified photogrammetrist shall be responsible for managing all phases of the mapping activities. The deliverables must conform to the map content requirements specified by NDOT and meet United States National Map Accuracy Standards. For more detailed information regarding NDOT photogrammetric mapping guidelines, please refer to [Imperial Mapping Guidelines – April 2017](#) on NDOT's website.

3. DELIVERABLES

- a. Provide deliverables that will be immediately usable within the NDOT's system without additional manipulation or conversion of data by the NDOT staff.
- b. Topographic maps will be delivered to NDOT in a timely manner in the MicroStation Computer Aided Drafting (CAD) platform design file format.
- c. Digital terrain models must be delivered in a format that is easily compatible with Geopak design software.

C. AIRBORNE LIDAR SERVICES

1. OVERVIEW OF THE WORK

Consultants shall produce LiDAR digital terrain model (DTM) maps consisting of elevation data using mass points for elevation returns to accurately define the general terrain.

2. REQUIREMENTS

- a. A licensed professional survey engineer or an American Society for Photogrammetry and Remote Sensing (ASPRS) certified photogrammetrist shall be responsible for managing all LiDAR collection activities.
- b. The LiDAR must meet the U.S. Geological Survey National Geospatial Program LiDAR Guidelines and Base Specification and conform to accuracy requirements

specified by NDOT. For more detailed information regarding NDOT LiDAR mapping guidelines, please refer to [2017 LiDAR Mapping Guidelines](#) on NDOT's website.

- c. Consultant shall use downloadable files and guidelines provided by NDOT website.
- d. Consultant shall have primary responsibility for LiDAR DTM quality assurance.

3. DELIVERABLES

- a. Provide deliverables that will be immediately usable within the NDOT's system without additional manipulation or conversion of data by the NDOT staff.
- b. LiDAR DTM data must be provided in a MicroStation V8i design file format compatible with Geopak design software.
- c. Deliverables must conform to the projection, datum, DAF, and coordinate system specified by NDOT.
- d. Where required, breaklines will be provided to define significant changes in grade.

DETAILS

It is anticipated that two (2) consultants will be awarded contracts under the Indefinite Delivery Indefinite Quantity (IDIQ) or "on-call" procurement process. The proposed four-year contract term will have a maximum value of \$800,000. The contract term may be extended up to 6 months at the discretion of NDOT. Typical Task Orders that will be awarded under this IDIQ contract will typically range from \$20,000 to \$200,000. The payment method for the individual Task Order Agreements may be Cost Plus Fixed Fee, Lump Sum, or Specific Rates of Compensation.

A minimum of four (4) consultants will be short-listed for further discussions. The evaluation criteria to be used for the short-listing and final selection are outlined below.

NDOT reserves the right to abandon or terminate any contract at any time and either re-advertise services or utilize its own forces. NDOT also reserves the right to accomplish services for future phases on all projects with the selected consultant, select another consultant, or utilize its own forces.

NDOT will not hold a briefing. All information is contained within this RFQ and on NDOT's website. If additional information is deemed necessary, it will be posted on the same web page as this RFQ and will be labeled as an update. Consultants interested in this RFQ are responsible for checking for updated information.

Interested consultants must have a current [NDOT Form 497, "Architect, Engineer, and Related Services Certification Form"](#) on file with NDOT prior to the deadline identified in the Schedule of Activities. If necessary, a completed NDOT Form 497 should be submitted to: NDOT.PDAnnualCertification@nebraska.gov.

Please submit your Drug-Free Workplace Policy (DF Policy) separate from the response to this RFQ ([DF Policy Example](#)). The DF Policy is a one-time submittal to NDOT. Please do not re-submit unless your DF Policy has changed, or you never have previously submitted a DF Policy. While the DF Policy is not a submittal requirement, all consultants must have an acceptable DF Policy on file prior to the deadline identified in the Schedule of Activities. If necessary, the consultant's DF Policy may be submitted via email to: NDOT.PDAnnualCertification@nebraska.gov

Please do not call or write NDOT staff for information regarding the services in this RFQ. Email all inquiries/questions to NDOT Procurement Engineer, at: ndot.pdRFQinfo@nebraska.gov or call (402) 479-4778.

EVALUATION CRITERIA

Short List (70 pts)

A. QUALIFICATIONS (20 PTS)

1. Qualifications of the project manager and key team members to perform the services described in the Scope of Services.
2. Qualifications and capability of key subconsultants to perform the services outlined in this RFQ.
3. Consultant's knowledge and understanding of NDOT standards and procedures for the work.
4. Compatibility of firm's equipment and computer systems with NDOT's systems (software).
5. Applicability and relevance of comparable projects provided by the consultant.

B. PERFORMANCE DATA (10 PTS)

1. Performance evaluations by NDOT regarding the work of the consultant.
2. Adherence to applicable standards and completeness of previous project submittals to NDOT.
3. Project schedule adherence on previous projects with NDOT.
4. Cooperation with NDOT staff on previous projects.
5. If consultant has no experience with NDOT, review information obtained from consultant's references for consultant's performance with other states, local governments, or appropriate clients. The proposal should list a minimum of two (2) references in their proposal.

C. UNDERSTANDING OF THE SERVICES TO BE PROVIDED (20 PTS)

1. Consultant has demonstrated understanding of the key elements of the work
2. Consultant has recognized and identified any special circumstances that may affect the work.
3. Consultant has provided a logical approach to work tasks and issues.

D. ABILITY TO COMPLETE THE WORK (20 PTS)

1. Consultant has demonstrated their capability to perform all aspects of the work that may be requested under this On-Call Agreement.
2. Consultant has demonstrated they will allocate appropriate and sufficient staff, resources and as needed qualified subconsultants to meet project objectives and schedules.

Final Selection (30 pts, 100 pts total)

The Department will call each of the short-listed firms, for a 20-minute (maximum) discussion of these services and requirements, scheduled as shown below in the Schedule of Activities.

E. INTERVIEW DISCUSSIONS (30 PTS)

1. Consultant’s interview was clear and concise.
2. Consultant addressed questions adequately.
3. Consultant showed knowledge and understanding of discussion topics

SCHEDULE OF ACTIVITIES	Date (2022)	Time (CST)
RFQ posted	Feb 23 & March 2	
Last day questions will be accepted	March 2	4:00 PM
Last day Q&A or updates to RFQ may be posted	March 2	4:00 PM
NDOT Form 497 & Drug-Free Workplace Policy on file at NDOT	March 2	4:00 PM
Statement of Qualifications Due	March 9	1:00 PM
Post Short-List Consultants	March 16	4:00 PM
Interview Discussions	March 21	10:00am- Noon
Post Final Selections	March 24	4:00 PM

NOTE – THE Selected Firm must provide verification that they and all subconsultants have submitted their indirect cost rates and certifications for their latest fiscal year. Latest fiscal year means the last fiscal year with an end date no more than 6 months in the past.

IDIQ ORDERING PROCEDURES

When ordering specific on-call design services NDOT will consider each selected consultant’s statement of qualifications along with any performance data on file with NDOT. The selection of a consultant will be based upon the following criteria:

1. Professional qualifications of the firm
2. Specialized experience and technical competence in the type of work required
3. Past performance of similar type of work
4. Capacity of firm to perform he work in a timely manner

Upon selection, NDOT will prepare a Task Order Agreement that will incorporate the provisions of the Master Agreement by reference and includes some or all the following performance details:

1. Detailed scope of work
2. Detailed description of deliverables
3. Description of performance/quality measures
4. Timeline for delivery of services

SUBMITTAL OF QUALIFICATIONS

All information must be received by the deadline identified in the Schedule of Activities. No exceptions to this deadline will be given.

One (1) electronic copy (PDF format) of your firm's statement of qualification (SOQ) must be submitted using the Online "[SOQ Submittal Form](#)" link found on the Consultant Services Business Opportunities page. Please "reduce file size" of PDF before submitting.

Submittals are to include the following in the order given below:

1. Front cover to include the consultant, subconsultants (if applicable), and number and title of the RFQ.
2. A letter of interest not to exceed one (1) page.
3. Organizational Chart not to exceed one (1) page.
4. A narrative responding to the established evaluation factors not to exceed five (5) pages.
5. A maximum of five (5) pages of additional supportive material such as charts, tables, resumes, or photos.
6. [NDOT Form 498, "Architect, Engineer, & Related Services Supplement to Statement of Qualifications"](#) not to exceed six (6) pages for the consultant and six (6) pages for each subconsultant. A separate NDOT Form 498 must be submitted for each subconsultant to be used.

INTERVIEW DISCUSSIONS

NDOT will make every effort to post the short-listed consultants and interview discussion schedule on NDOT's website prior to the deadline identified in the Schedule of Activities. Interview discussions will be capped at 20 minutes.

NDOT will conduct discussions via telephone with the short-listed consultants. Responses will be reviewed and scored by the selection committee.

Upon completion of scoring and approval of the Deputy Director, NDOT will post the final selections on NDOT's website prior to the deadline identified in the Schedule of Activities, or as soon as possible.

John Selmer, P.E., Director
Nebraska Department of Transportation

EQUAL OPPORTUNITY EMPLOYER