



OFFICE OF WILL COUNTY EXECUTIVE
JENNIFER BERTINO-TARRANT

Will County Office Building – 302 N Chicago Street – Joliet, Illinois 60432

Kevin Lynn
Purchasing Director

(815) 740-4712
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December 24, 2020

To Whom It May Concern:

You are invited to submit your sealed proposal for LiDAR data, Digital Terrain Model (DTM), Digital Surface Model (DSM), and the option to develop 1-foot Contour Lines for the County of Will. Specifications are attached hereto and are considered part of the SEALED BID package.

Sealed bids will be received in the Purchasing Department, 2nd floor, Will County Office Building, 302 N. Chicago Street, Joliet, IL, 60432, **NOT LATER THAN 2:00 P.M., Thursday, January 14, 2021.**

The County of Will reserves the right to accept or reject any or all bids received.

Should you have any questions regarding this bid, please submit them in writing to Kevin Lynn, Purchasing Director, at klynn@willcountyillinois.com.

We welcome your bid.

Sincerely,

Kevin Lynn

**ADVERTISEMENT OF BID
LIDAR DATA
WILL COUNTY, ILLINOIS**

SEALED PROPOSALS FOR LIDAR DATA, TERRAIN MODEL (DTM), DIGITAL SURFACE MODEL (DSM) AND THE OPTION TO DEVELOP 1-FOOT COUNTER LINES FOR THE COUNTY OF WILL WILL BE RECEIVED AT THE PURCHASING DEPARTMENT, 2ND FLOOR OF THE WILL COUNTY OFFICE BUILDING, 302 N. CHICAGO ST., JOLIET, IL 60432, UNTIL THE HOUR OF **2:00 P.M., THURSDAY, JANUARY 14, 2021.**

SPECIFICATIONS AND CONDITIONS OF THE BID ARE AVAILABLE AT www.willcountyillinois.com, www.demandstar.com, AS WELL AS THE PURCHASING DEPARTMENT, 2ND FLOOR, WILL COUNTY OFFICE BUILDING, 302 N. CHICAGO ST., JOLIET, IL 60432, (815) 740-4712 OR EMAIL purchasing@willcountyillinois.com.

THE TENDERING OF A BID SHALL BE CONSTRUED AS ACCEPTANCE OF THE SPECIFICATIONS. THE COUNTY OF WILL RESERVES THE RIGHT TO ACCEPT OR REJECT ANY OR ALL BIDS OR PROPOSALS RECEIVED.

BY ORDER OF THE WILL COUNTY EXECUTIVE, JENNIFER BERTINO-TARRANT.

**INSTRUCTIONS TO BIDDERS
LIDAR DATA
WILL COUNTY, ILLINOIS**

You are invited to submit your sealed proposal for LiDAR data, Digital Terrain Model (DTM), Digital Surface Model (DSM), and the option to develop 1-foot Contour Lines for the County of Will

A. SEALED BIDS:

Sealed bids will be received in the Purchasing Department, 2nd floor of the Will County Office Building located at 302 N. Chicago Street, Joliet, IL, 60432, **not later than 2:00 P.M., Thursday, January 14, 2021.** BIDS RECEIVED AFTER THIS TIME WILL NOT BE ACCEPTED.

Bids must be made in accordance with the instructions contained herein.

Bid forms shall be completely filled out either typewritten or in ink. The **complete set of contract documents must be submitted** with the proposal, with **ONE ORIGINAL, THREE AND ONE DIGITAL PDF COPY, CLEARLY MARKED. BIDS WHICH FAIL TO SUBMIT THE ENTIRE COMPLETED BID PACKAGE AND CONTRACT CLEARLY MARKED WILL BE REJECTED.** Bids shall be submitted on the forms furnished by the County of Will in a sealed package, plainly marked, with the bidder's name, address, and the notation:

SEALED BID: LIDAR DATA
BIDS DUE: THURSDAY, JANUARY 14, 2021 - 2:00 P.M.

Bids shall be addressed to the Will County Purchasing Department, Will County Office Building, 302 N. Chicago Street, Joliet, IL, 60432.

B. SIGNATURE OF BIDS:

The **signature on bid documents must** be that of an authorized representative of bidder. An officer of or agent of the offering bidder who is empowered to bind the bidder in a contract shall sign the proposal and any clarifications to that proposal.

Each bidder, by making his bid, represents that he has read and understands the bidding documents. **Any bid not containing said signed documents shall be non-conforming and will be rejected.**

C. PRIME CONTRACTOR CERTIFICATION:

Included in this bid package is a prime Contractor certification form. This form must be filled out and returned with your sealed bid package or the bid package **will not be accepted and shall be non-conforming and shall be rejected.**

D. BIDDING PROCEDURES:

1. All bids must be prepared on the forms provided by the County and submitted, with **ONE ORIGINAL, THREE COPIES AND ONE PDF DIGITAL COPY OF THE ENTIRE COMPLETED BID PACKAGE AND CONTRACT, CLEARLY MARKED,** in accordance with the Instructions to bidders. **Any bid packages not containing ONE ORIGINAL, THREE COPIES AND ONE PDF DIGITAL COPY OF THE ENTIRE COMPLETED BID PACKAGE AND CONTRACT, CLEARLY MARKED shall be non-conforming and shall be rejected.** The entire bid package are the terms of the agreement.
2. A bid is invalid if it has not been deposited at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for bids or prior to any extension thereof issued to the bidders.

3. Changes or corrections may be made in the bid documents after they have been issued and before bids are received. In such cases a written addendum describing the change or correction will be issued by the County of Will to all bidders recorded by the County of Will as having attending the pre-bid conference. Such addenda shall take precedence over that portion of the documents concerned, and shall become part of the bid documents. Except in unusual cases, addenda will be issued to reach the bidders at least five (5) days prior to date established for receipt of bids. **If the signed Receipt of Addenda form is not included in the bid package and contract (EVEN IF NO ADDENDA ARE ISSUED), the bid package and contract shall be non-conforming and shall be rejected.**
4. Each bidder shall carefully examine all bid documents and all addenda thereto, and shall thoroughly familiarize themselves with the detailed requirements thereof prior to submitting a proposal. Should a bidder find discrepancies or ambiguities in, or omissions from documents, or should they be in doubt as to their meaning, they shall, at once, and in any event, not later than five (5) days prior to bid due date, notify the County of Will, who will, if necessary, send written addenda to all bidders. The County of Will will not be responsible for any oral instructions. All inquiries shall be directed to the Purchasing Director in writing at klynn@willcountyillinois.com. After sealed bids are received, the bidder will make no allowance for oversight.

E. TAX EXEMPTION:

The County of Will is exempt from Federal, State and Municipal Taxes.

F. WORDS AND FIGURES:

Where amounts are given in both words and figures, the words shall govern. If the amount is not written in words, the unit cost will take precedence over the extended price in case of a discrepancy in the multiplication.

G. CONTRACT DURATION:

The Contract is to commence on or after February 18, 2021

H. REJECTION OF BIDS:

The bidder acknowledges the right of the County of Will to reject any and all bids received.

I. DEFAULT:

In case of default by the successful bidder, the County of Will may procure the articles or services from other sources and may deduct from any unpaid balance due the successful bidder any increase in cost to the county as a result of said default, or may collect against the bond or surety for excess costs so paid, and the prices paid by the County of Will shall be considered the prevailing market price at the time such purchase is made.

J. NON-DISCRIMINATION:

The Contractor shall at all times observe and comply with any law, statute, regulation or the like relating in any way to civil rights including but not limited to 775 ILCS 10/1.

K. EQUAL EMPLOYMENT OPPORTUNITY:

Contractor shall comply with the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq., as amended and any rules and regulations promulgated in accordance therewith, including, but not limited to the Equal Employment Opportunity Clause, Illinois Administrative Code, Title 44, Part 750

L. RISK OF LOSS:

The Contractor shall assume all risks for loss or damages to materials whether stored on the site or elsewhere, or to tools or equipment owned or rented by the Contractor, and he shall maintain such insurance as he may deem necessary to protect himself against such loss or damage.

M. TYPES OF INSURANCE:

1. **Worker's compensation insurance.** The Contractor shall procure worker's compensation insurance as required by applicable state law for all of his employees who would be engaged in work on the project. In case any class of employees engaged in any work on the project under this Contract is not protected under the workmen's compensation statute, the Contractor shall provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected. In addition, the Contractor will provide employer's liability (coverage B) in the amount of \$500,000.00.
2. **Contractor's comprehensive general liability and property damage insurance.** Contractor's comprehensive general and property damage insurance shall be in an amount not less than \$500,000.00 for injuries including accidental death to any one person and not less than \$500,000.00 combined single limit bodily injury and property damage.
3. **County's protective liability insurance.** The Contractor shall protect the County or its assignee, if any, from contingent responsibility arising from the work, project operation performed under this Contract by adding these parties as named insured as a rider to the general Contractor specified comprehensive general liability policy shall be: County of Will, 302 North Chicago Street, Joliet, Ill. 60432.

N. PROOF OF CARRIAGE OF INSURANCE:

1. The Contractor shall furnish the County at the time of bidding, with certificates showing the type, amount, class or operations covered, effective dates and dates or expiration of policies, which policies shall specifically refer to the indemnity agreement. Such certificates shall also contain substantially the following statement: "The Insurance covered by this Certificate will not be canceled or materially altered except after thirty (30) days written notice has been received by all named insured." **Any bid not containing said proof of insurance shall be nonconforming and shall be rejected.**
2. All policies shall substitute the word "Occurrence" for "accident" for both bodily and property damage. "Occurrence" shall be defined to mean an event or series of events or continuous or repeated exposure to conditions, which unexpectedly cause injury or damage during the policy period.
3. All insurance coverage shall be provided by Insurance Companies maintaining a financial strength and claims paying ability rating no lower than "A" minus "VIII" as rated by the 1999 or most current AM Best's Insurance Guide.

O. TAXES:

The Contractor shall pay all applicable sales, use, service use, service occupation, social security, and other taxes, levies, assessments, and duties, and shall make income tax deductions, all as required by local, State and Federal law.

P. CHOICE OF LAW AND VENUE:

The bid and this agreement shall be governed by the laws of the State of Illinois, without regard to conflict of law provisions. Venue for any cause of action related to this bid or agreement shall be the Twelfth Judicial Circuit, Will County, Illinois.

Q. RIGHT OF THE COUNTY TO TERMINATE CONTRACT:

1. If any of the Provisions of the Contract are violated by the Contractor, or if the Contractor shall disregard applicable law, ordinances, rules or regulations or work requirements as spelled out in the bid specifications, or the Contractor shall be adjudged as bankrupt or make a general assignment for the benefit of creditors, or if a receiver should be appointed for the Contractor, or if at any time during the progress of the work the Contractor should allow any indebtedness to accrue for labor, material, or equipment, and should the Contractor fail to pay for labor, material,

or equipment, and should the Contractor fail to pay and discharge the same within five (5) days after demand made by the person or persons furnishing such labor, material or equipment, the County may serve written notice upon the Contractor and the Surety of its intention to terminate the Contract. Unless within ten (10) days after the serving of such notice upon the Contractor, such violation or other matter shall have been corrected or satisfactory arrangement for correction have been made, the Contractor shall, upon the expiration of said ten (10) days, at County's option, cease and terminate work. The Contract shall then be null and void.

2. In the event of any such termination, the County shall immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the right to take over and perform the Contract; provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing of such Surety of notice of termination, the County may take over work and prosecute the same to completion by other Contract or by force. Contractor shall be liable to the County for any excess cost to the County occasioned thereby, and in such event the County may take possession of and utilize in completing the work, such material, equipment and the like as may be on the project site of the work and necessary therefore.
3. Notwithstanding anything contained herein to the contrary, failure to comply with or perform the services required shall be cause for termination.
4. The County or its assign may terminate this agreement by giving the Contractor written notification of termination of this agreement by registered United States Mail, sufficient postage prepaid, return receipt requested, addressed to the Contractor at its address stated in the Contract, at least fourteen (14) days prior to termination, with service of such notice conclusively presumed to be received on date of dispatch. In such event, the Contractor shall only be entitled to receive a prorated payment for work actually and satisfactorily performed pursuant to the Contract through date of termination.
5. In the event that any of the Will County Offices should move to a different location, notice will be given a minimum of sixty (60) days prior to said move.

R. ILLINOIS FREEDOM OF INFORMATION ACT:

Any and all submissions to the County of Will become the property of the County of Will and these and any late submissions will not be returned. Your proposal will be open to the public under the Illinois Freedom of Information Act (FOIA) (5 ILCS 140et seq.) and other applicable laws and rules, unless you request in your proposal that we treat certain information as exempt. We will not honor requests to exempt entire proposals. You must show the specific grounds in FOIA or other law or rule that support exempt treatment. If you request exempt treatment, you must submit an additional copy of the proposal with exempt information deleted. This copy must tell the general nature of the material removed and shall retain as much of the proposal as possible. In the event the County of Will receives a request for a document submitted, the County of Will shall provide notice to contractor as soon as practicable. Regardless, contractor will be responsible for any costs or damages associated with defending your request for exempt treatment. Furthermore, contractor warrants that County of Will's responses to requests for a document submitted that is not requested to be exempt will not violate the rights of any third party.

Please be advised that if your proposal is accepted by the County of Will all related records maintained by, provided to, or required to be provided to the County of Will during the contract duration are subject to FOIA. In the event the County of Will receives a request for a document relating to contractor, its provision of services, or the arranging for the provision of services, the County of Will shall provide notice to contractor as soon as practicable and, within the period available under FOIA, contractor may then identify those records, or portions thereof, that it in good faith believes to be exempt from production and the justification for such exemption. Regardless, contractor will be responsible for any costs or damages associated with defending the request for exempt treatment. Furthermore, contractor will warrant that County of Will's responses to requests

for a document relating to contractor, its provision of services, or the arranging for the provision of services, or the arranging for the provision of services, will not violate the rights of any third party.

Please be advised also that FOIA provides that any record in the possession of a party with whom the County of Will has contracted to perform a governmental function on behalf of the County of Will, and that directly relates to the governmental function and is not otherwise exempt under FOIA is considered a public record of the County of Will for purposes of FOIA. 5 ILCS 140/7(2). As such, upon request by the County of Will (or any of its officers, agents, employees or officials), the contractor shall provide to the County of Will at no cost and within the timeframes of FOIA a copy of any "public record" as required by FOIA and in compliance with the provisions of FOIA. After request by the County of Will, contractor may then identify those records, or portions thereof, that it in good faith believes to be exempt from production and the justification for such exemption. Regardless, contractor will be responsible for any costs or damages associated with defending the request for exempt treatment.

S. AWARDING OF BID:

The bid is expected to be awarded after the February 18, 2021 meeting of the Will County Board.

T. SUBMITTAL SUMMARY REQUIREMENTS:

Each of the following items **must** be submitted by the bid time mentioned herein in order that the bid will be considered. **Any bid not containing items 1-4 below shall be non-conforming and shall be rejected:**

1. Certificates of Insurance
2. **Signed** Copy of Prime Contractor Certification
3. **Signed** Receipt of Addenda Form
4. One original three copies and one digital copy of entire Bid Package.

PRIME CONTRACTOR CERTIFICATION

The undersigned hereby certifies that _____

Name of Company

is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of the Criminal Code of 1961.

Name of Representative

Title

Signature

Date

Note: A person who makes a false certificate commits a Class 3 Felony.

Sections 33E-3 and 33E-4 provide as follows:

33E-3. Bid-rigging. A person commits the offense of bid-rigging when he knowingly agrees with any person who is, or but for such agreement would be, a competitor of such person concerning any bid submitted or not submitted by such person or another to a unit of State or local government when with the intent that the bid submitted or not submitted will result in the award of a contract to such person or another and he either (1) provides such person or receives from another information concerning the price or other material term or terms of the bid which would otherwise not be disclosed to a competitor in an independent noncollusive submission of bids or (2) submits a bid that is of such a price or other material term or terms that he does not intend the bid to be accepted.

Bid rigging is a Class 3 felony. Any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation as provided in paragraph (2) of subsection (a) of Section 5-4 of this Code.

33E-4 Bid rotating. A person commits the offense of bid rotating when, pursuant to any collusive scheme or agreement with another, he engages in a pattern over time (which, for the purposes of this Section, shall include at least 3 contract bids within a period of 10 years, the most recent of which occurs after the effective date of this amendatory Act of 1988) of submitting sealed bids to units of State or local government with the intent that the award of such bids rotates, or is distributed among, persons or business entities which submit bids on a substantial number of the same contracts. Bid rotating is a Class 2 felony. Any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation as provided in paragraph (2) of subsection (a) **of Section 5-4 of this Code.**

Possible violations of Section 33 can be reported to the Office of the Will County State's Attorney at (815) 727-8453.

**REQUEST FOR PROPOSALS (RFP) For
LiDAR Data for the County of Will**

**Issued by:
County of Will**

**PROPOSALS MUST BE RECEIVED NO LATER THAN 2:00P.M. CENTRAL TIME
ON January 14th , 2021**

Jennifer Bertino-Tarrant
County Executive

PROPOSAL INFORMATION

Will County is soliciting proposals for LiDAR data, Digital Terrain Model (DTM), Digital Surface Model (DSM), and the option to develop 1-foot Contour Lines based upon the attached specifications.

PROJECT DESCRIPTION

Will County is located to the south and west of the city of Chicago in northeastern Illinois. Will County is bordered by Cook, DuPage, Kendall, Grundy and Kankakee counties in Illinois, and Lake County in Indiana. The latest Census projection estimates Will County's population as just under 691,000. Will County is 849 square miles where just over 12 square miles is not land based. Our project area will consist of approximately 887 square miles as referenced by the county buffer polygon.

All LiDAR data is to be captured in ideal climactic and stable weather conditions in order to provide optimal collection, e.g. cloud free, low moisture, leaf off snow and ice free. These products will support the maintenance of various geospatial databases included in the County's enterprise Geographical Information System (GIS). Will County maintains their geospatial data according to the Illinois State Plane, Eastern Zone (Zone 3776), NAD83 (NSRS2007), U.S. survey feet coordinate system. Elevation values utilize the NAVD88 datum as the County's standard.

Will County agencies that will directly benefit from this effort include the Information, Communication, & Technology (ICT) Department, 9-1-1, Assessor's Office, Board of Review, Geographic Information Systems Division, Division of Transportation, Emergency Management Agency (EMA), Land Use Department, Forest Preserve District, Health Department, and Sheriff. As part of Will County's ongoing regional collaborative presence, external agencies and the general public will also realize benefits and access to this data as well.

Will County's most recent LiDAR capture was undertaken in 2014 as part of a joint funding agreement through the Illinois Height Modernization Program (ILHMP) for the capture of 3DEP QL2 LiDAR data and derivative products including DEMs, DSMs, additional classifications, two-foot topography and hydro breaklines. See <https://clearinghouse.isgs.illinois.edu/data/elevation/illinois-height-modernization-ilhmp-lidar-data>.

The data proposed for this collection is to conform to USGS QL1 requirements. See the following: <https://www.usgs.gov/core-science-systems/ngp/ss/lidar-base-specification-online>. Metadata from this project can also be found here: <http://thor-f5.er.usgs.gov/ngtoc/metadata/fgdc-std-001-1998.dtd>.

New data from this 2021 proposed project deliverables in combination with county GIS hyperspectral and orthoimagery will enable a more refined delineation and update of a wide range of existing GIS data and allow for the creation and capture of new GIS layers. Currently existing publicly available Will County data can be found here: <https://www.willcountyillinois.com/County-Offices/Administration/GIS-Division/Data>.

SCOPE OF SERVICES

All Proposers to this RFP should detail procedures, specifications, justification, and costs in order to accomplish the major tasks. Below is a summary of tasks that will need to be completed for this project:

- Project management
- Survey control
- LiDAR collection
- Classification of data
- Derivative products and services
- Metadata

GIS SOFTWARE

Will County GIS and all our major departments are utilizing GIS data, have adopted ArcGIS Enterprise, a GIS software suite produced by Environmental Systems Research Institute, Inc. (ESRI), and all of its affiliated products including ArcGIS Desktop (ArcMap, ArcCatalog), ArcSDE, ArcGIS Pro, ArcGIS Enterprise, and ArcGIS Online as its standard platform in the server, desktop, and Internet/Intranet environments. This ensures the efficiency of data transfer and its overall manipulation across all departments. Moreover, the effective coordination of GIS activities significantly enhances the safeguards on data integrity and quality control. Currently, Will County is operating at an ArcGIS Enterprise version 10.8.1 with ArcGIS Desktop version of 10.8.1 and ArcGIS Pro 2.6.

These products will support the maintenance of various geospatial databases included in the County's enterprise Geographical Information System (GIS), as well as provide public access via Will County's standard web-based data viewing application, GIS Data Viewer, https://gisapp.willcountyillinois.com/Html5Viewer/Index.html?viewer=Data_Viewer.

GIS DATABASE

Will County's GIS records are stored and managed in an ArcGIS Enterprise 10.8.1 server utilizing Microsoft SQL Server 2016 as the RDBMS. The SQL server maintains several geodatabases. The County maintains all its geospatial data according to the Illinois State Plane, Eastern Zone (Zone 3776), NAD83 (NSRS2007), U.S. survey feet coordinate system. Elevation values utilize the NAVD88 datum as the County's standard. Comprehensive Federal Geographic Data Committee (FGDC)-compliant metadata has been established as a standard and has been written for all major data layers.

Will County, based on its extant rich web-based applications, supports code development according to the good practices of its web services environment of Windows Server 2016, IIS, SQL Server, and Esri Server API products. Development frameworks utilize a range of platforms including JavaScript, utilized on the .NET framework with Microsoft Visual Studio.

Will County currently runs on Microsoft Windows 10. We are actively migrating to Microsoft Windows 10 only. Will County has a TEST/STAGING & PRODUCTION environment.

STANDARDS and CONSIDERATIONS

The county encourages the proposers to review the scientific literature to formulate an optimum solution or solutions. Unless otherwise noted, project specifications are based on the USGS's LiDAR Base Specification Heidemann, Hans Karl, September, 2019, LiDAR Base Specification 2020 rev. A: See U.S. Geological Survey NGP Standards and Specification Elevation Specifications Review Board Techniques and Methods, This specification is online and may be viewed at <https://www.usgs.gov/core-science-systems/ngp/ss/lidar-base-specification-online>. These LiDAR specifications are required baseline specifications. For any item which is not specifically addressed, the reference 2020 rev. A specification will be the required specification authority. This project is for a high-resolution data set of (Geiger Mode) LiDAR. Geiger Mode systems may not currently meet the USGS Lidar Base Specification, as that specification was written specifically to address linear mode LiDAR. Required attributes such as multiple returns, specified scan angles, and flagging overlapping points, are based on linear mode systems that collect data in a specific and different manner than the Geiger Mode technology. Attribution specific to linear mode technologies will not be considered in the assessment of the data. The project will adhere to all other specifications as noted above including adherence to minimum point density and associated vertical and relative accuracies. This project is for a high-resolution data set of LiDAR {Geiger Mode} of approximately 887 square miles for Will County, which includes a quarter (1/4) mile buffer. The LiDAR is to be collected at a USGS QL1 (20 ppsm for the entire project). The Spatial Reference System shall be: Illinois State Plane East Zone, NAD-83(2011) (horizontally), NAVD88 (vertically), US Survey Feet.

PROJECT PLAN

The scope of work is to be enacted in accordance with the overall project plan noted in this section. This plan consists of three phases:

Phase One: Project initiation

Phase Two: Pilot

Phase Three: Production

- **Phase One: Project Initiation**

Project initiation will begin after the execution of the Contract by the Will County Board. Agreement on administrative procedures would follow. It will be required during this phase, a requisite number of meeting(s) will be convened between the Contractor and the County.

After these meeting(s), the Contractor will begin drafting a project plan manual, detailing both the technical and administrative procedures to be followed for the duration of this project. This phase should include any assessment of the various processes and data that will be integrated for this project. The County will review and develop this further, if required. Any subsequent drafts will be approved by the County prior to the commencement of Phase Two.

The Contractor will be responsible for the filing of flight plans and obtaining appropriate permissions from the FAA, and other agencies, if necessary. Due to the areal extent of this project, the Contractor will submit a formal plan to the FAA well in advance of the actual flight to assist in its successful implementation.

- **Phase Two: Pilot**

When the items in Phase One are accepted by the County, the Contractor will immediately proceed to Phase Two. The pilot phase will confirm the feasibility of the procedures and standards established at initiation.

The objectives of the pilot are to:

- Execute and evaluate all procedures as specified;
- Select and approve procedures to be implemented in Phase Three;
- Finalize design characteristics;
- Identify problems and develop policy for their resolution;
- Evaluate and approve all specified products.

The pilot area will consist of three LiDAR tiles, as defined by Will County. These tiles will include a wide range of landscapes under consideration for this project. All procedures will be developed and evaluated upon these sample tiles. Each tile is to be representative of one of the following:

- Urban – the Central Business District of Joliet
- Typical suburban – an outlying municipality
- Rural – undeveloped parcels, Forest Preserve District of Will County.

Upon receipt of the pilot data and findings, the County will review to ensure specification compliance, completeness, and accuracy. All procedures for correspondence and quality assurance will be reviewed in this phase. The project plan manual, design considerations, and project schedule will be revised to incorporate the results identified during the study. When the County accepts final delivery of the pilot and all operating procedures are codified, the Contractor will be advised to begin Phase Three project production.

If significant and irreconcilable problems occur during Phase Two and are a result of the Contractor's efforts, or lack thereof, the County then reserves the right to authorize payment for the work completed, and to cancel the remainder of this task of the Contract.

Upon completion of the pilot, the manual will be amended to a near-final state, allowing for subsequent minor adjustments, which may result from the pilot. The Contractor will be responsible for updating the manual, should it be necessary. A final version will be delivered upon the completion of this project.

- **Phase Three: Production**

The general objectives of Phase Three are as follows:

- The production of LiDAR data and DTM for the remaining tiles comprising Will County, per specifications
- Acceptance of all project deliverables by the County
- All digital information is installed and operating as a fully integrated entity in the County's enterprise GIS
- All digital information is sufficiently prepared as a support for further photogrammetric services, such as orthoimagery
- All source documents from the County have been returned.

When all the above has been accomplished and accepted by Will County GIS Division, the project will be considered complete.

PROJECT DELIVERABLES

The County tentatively proposes the following items as project deliverables. The Proposer will submit appropriate and relevant information regarding attribution, and other specifications. Attribute description tables, as determined during project initiation, may include characteristics such as file format, approximate file size, media of delivery, storage requirements and storage plan. All pilot and final data to be delivered on non-returnable portable storage device(s). These specifications will ultimately be determined between the Contractor and the County during project initiation. Deliverables to include (additional information provided as needed below):

- Project Plan manual
- Geodatabase Design
- Raw Point Cloud Data (Raw tiles only)
- LAS Dataset of Classified LAS Files
- Bare Earth Surface (Raster DEM)
- Ground Survey Control Report
- Survey Checkpoints
- QA/QC Assessment Project Report
- Metadata
- Tile Index (Refer to OrthoTile2020.shp - as provided by the county)
- Topographic Elevation Contours
- Breaklines

GEODATABASE DESIGN

The Proposer will describe their approach to the database design for all proposed and any optional deliverable GIS feature classes for this project. The Proposal will include a high-level, conceptual ArcSDE geodatabase design strategy that will accommodate all proposed data sets including control points, LiDAR flight lines, breaklines, contours (Will County requires a minimum of two foot contours but one foot is preferable), contour annotation, spot elevations, and spot annotation. The design will include, if pertinent, any data integrity and topological requirements, tabular fields, and cartographic requirements, standards and specifications. The Proposal will additionally include specifications to deliver a formal physical geodatabase design document.

LIDAR DATA

The County is requiring the generation of a LiDAR-derived digital terrain model (DTM) that meets the National Standard for Spatial Data Accuracy (NSSDA) for a minimum one-foot (1') contour interval, a vertical accuracy of 0.6 ft (18.2 cm) with a RMSE of 0.3 ft (9.25 cm). The horizontal accuracy should be 3.8 ft (1.159 m) with a RMSE of 2.2 ft (67.0 cm) for the 95 percent (95%) confidence level. Additionally, the county is requesting pricing and specifications for the capture of data that will support one-foot and two-foot interval contour data. The Proposal is to include the testing methodology to verify conformance with the NSSDA for the various collection types proposed.

A detailed approach will be proposed to include the following:

- Specifications and methodology for the flight including the documentation of mission date(s), time, flight altitude, overlap and airspeed. The flight paths shall cover the study area satisfactorily including both parallel and cross flight lines to eliminate shadowing or void areas and allow for proper quality control. Discuss how various environmental conditions will be handled. Address any special considerations for areas of dense coverage such as locations containing heavy foliage
- Specifications for the data collector should include scan angle (if applicable), along-track and cross-track pulse spacing, pulse width and density, and number of returns;
- Describe classification schema and process for the discrimination of first and last (and any additional) pulse returns (if applicable). Describe the post-processing algorithms used for vegetation or structure removal to ascertain bare earth requirements. "Bare earth" is defined as all points except, but not limited to, elevation points on bridges, buildings, other structures, and vegetation from the LiDAR-derived data;
- Definition and resolution of data voids and data artifacts resulting from the mission;
- Outline all quality control and quality assurance procedures to ensure the integrity of the LiDAR mission;
- Provide descriptions, specifications and calibration procedures of all equipment used in the mission.

The LiDAR data will be delivered in the American Society of Photogrammetry and Remote Sensing's (ASPRS) LiDAR Data Exchange Format Standard (.LAS, version 1.4) with all the required header fields. The LiDAR points will be classified as "ground" and "canopy" (not ground). It should also include flight line number and intensity values.

The Contractor shall use automated and manual filtering for bare earth creation, removing 95% or greater of artifacts, outliers, voids, systematic and random errors, noise, anomalies, man-made features and vegetation. The resulting DTM shall support the production of the proposed contours. The Contractor must deliver data with no data voids. A shapefile of the LiDAR tiling scheme will be made available as part of this RFP. LiDAR Classification must adhere to the following standard: American Society for Photogrammetry & Remote Sensing (ASPRS) Standard Point Classes (Point Data Record Formats 6-10).

DIGITAL TERRAIN MODEL

The County requires a hydro-enforced digital terrain model (DTM). The creation of the DTM shall utilize LiDAR-derived bare earth points and breaklines. The DTM must be capable of generating NSSDA-compliant contours.. Breaklines shall be delineated to ensure the DTM is hydrologically correct. Breaklines will be captured for all hydrologic features and delineated according to the following specifications. A shapefile of the DTM tiling scheme will be made available as part of this RFP.

Hydrologic features with constant elevation such as lakes, reservoirs, etc. will be delineated as closed polygons with a single elevation value that reflects the water elevation at the time the data was captured. Water body features will be captured for features one-quarter acre in size or greater. No LiDAR points shall be contained within polygonal hydrologic features, e.g., reservoirs, lakes, and streams. Swimming pools will be excluded from the capture methodology.

Linear hydrographic features (streams, shorelines, canals, swales, embankments, etc.) will be delivered as breaklines with varying elevations. Linear and polygonal water features should all be connected so to allow water to flow downhill throughout the stream network. Hydrologic features will cut through all identifiable culverts and bridges. Breaklines will also be captured for all dams. These features will have z-values derived from the bare earth LiDAR data. For the double line breakline features, all the LiDAR points shall be removed for the area that falls inside of the double breaklines.

Road features, not including bridges and overpasses, shall be captured as edge of pavement breaklines as required to create a DTM capable of creating contours at the required intervals. In addition, other breaklines for transportation features should be collected as required for DTM development to meet the required contour specifications. These features will have z-values derived from the bare earth LiDAR data.

TOPOGRAPHIC CONTOURS

Contours shall be generated from the DTM for a mapping scale of 1:1200 (one inch equal one hundred feet). Index contours will be established for multiples of five feet (5'), technically beginning with the five-foot contour line. The final contour lines shall have z-values for each contour line. Elevation values shall be assigned to contour lines as attributes. The contour lines will be smoothed and will meet cartographic quality as detailed below.

The Proposer will provide a detailed compilation methodology, including interpolation strategies, smoothing algorithms and symbology plan. Contours must depict the general terrain including crown or cross slope of all paved areas and drainage flows. Contours must be continuous, uninterrupted lines; meaning that in general, contours cannot intersect or arbitrarily terminate. They shall end only as extensions beyond the project area limits. The Proposer will submit their methodology for the handling of contours around streams.

The Proposer will capture depressions in the topography. A depression contour is a localized contour that closes within the mapping limits (or obviously closes outside the mapping limits) such that the area enclosed by the contour is lower than the contour elevation. A procedural definition, capture methodology and symbology plan will be provided by the Proposer.

The Proposer will provide a methodology for the capture and display of spot elevations. Spot elevations are essential in the accurate depiction of the terrain. Typical candidate features include crests within closed contours, nadirs within closed depression contours, amidst widely spaced contours, and on various infrastructural elements such as intersections involving roadways & railroads, overpasses, and bridge decks. Spot elevations will also be captured for the surface height of discrete bodies of waters with constant elevation. Water elevations will not be acquired along streams.

An annotation plan for the display of the various contour elements is critical to effective cartography. The Proposer will specify the annotation plan to include font(s), type size, type placement (relative to features, orientation, and spacing thresholds), and masking, if necessary, for each element.

QUALITY CONTROL/QUALITY ASSURANCE

Proposers should provide a detailed description of the proposed Quality Assurance (QA) methodology adhering to best practices and clearly identifying control tasks and testing. The County expects this section to include at minimum:

- High level proposed QA approach
- Proposed review process
- County responsibilities for each of the above

PROPOSAL FORMAT AND CONTENT

Proposal shall be as concise as possible.

Proposal should include at a minimum the following sections:

1. Introduction
2. Summary of Technical Process
3. Summary of Quality Control Procedures
4. Project Staff
5. Description of Similar Projects
6. References

Date Mailed:
Due: 1-14-21, 2:00 P.M.

PURCHASING DEPARTMENT
COUNTY OF WILL
302 N. CHICAGO ST
JOLIET, IL. 60432

BID FOR
LiDAR DATA
2021-60

COMPANY NAME _____ FEIN # _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

CONTACT _____

PHONE _____ FAX _____ EMAIL _____

THIS IS NOT AN ORDER

Agency Name and Delivery Address: Will County Office Building
302 North Chicago Street, Joliet, IL 60432

For additional information contact: Kevin Lynn, Purchasing Director klynn@willcountyillinois.com

DESCRIPTION	
LiDar Collection	\$
LiDar Processing & Classification	\$
Digital Terrain Model (DTM)	\$
Digital Surface Model (DSM)	\$
Break Lines	\$
Spot Elevations	\$
Generation 2 Foot Contours	\$
Optional Generation 1 Foot Contours	\$
Grand Total	\$

TOTAL CONTRACT AMOUNT WRITTEN IN, IN CASE OF DISCREPANCY, THE AMOUNT IN WORDS SHALL GOVERN.

Signed by: _____ Title: _____
Authorized Representative of Company

Date Mailed:
Due: 1-14-21, 2:00 P.M.

PURCHASING DEPARTMENT
COUNTY OF WILL
302 N. CHICAGO ST
JOLIET, IL. 60432

BID FOR
LiDAR DATA
2021-60

The Bidder proposes to provide the products and/or services in accordance with the specifications attached herein.

COMPANY NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
CONTACT _____ E-MAIL _____
PHONE _____ FAX _____ FEIN# _____

ADDENDUM RECEIPT: Receipt of the following Addendum to the Bidding Documents is hereby acknowledged:

No. _____, dated _____, signed _____

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No. _____, dated _____, signed _____

LATE BIDS CANNOT BE ACCEPTED!

<u>SEALED BID DOCUMENT</u>	
<u>Vendor Return Address:</u> 	
BID #:	2021-60
DUE DATE:	1-14-21
DUE:	2:00 P.M.
DESCRIPTION:	LiDAR Data
DATED MATERIAL-DELIVER IMMEDIATELY	
WILL COUNTY PURCHASING DEPARTMENT	
302 N. CHICAGO ST., 2ND FLOOR	
JOLIET, IL 60432	

PLEASE CUT OUT AND AFFIX THIS BID LABEL (ABOVE) TO THE OUTERMOST ENVELOPE OF YOUR SEALED BID TO HELP ENSURE PROPER DELIVERY!

LATE BIDS CANNOT BE ACCEPTED!