

County of Henry

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MEMBER OF
VAGP
NIGP

PURCHASING DEPARTMENT

**DECEMBER 18, 2015
REQUEST FOR PROPOSAL
RFP # 16-01223-A166
HENRY COUNTY PURCHASING DEPARTMENT**

The County of Henry solicits firms to submit proposals for “Countywide Mapping Project.” The original and three (3) submittals (FOR A TOTAL OF FOUR (4) PROPOSALS), marked “Countywide Mapping Project” RFP #16-01223-A166 will be received in a sealed envelope not later than 3:00 p.m., Local Prevailing Time, JANUARY 22, 2015, in the:

**Purchasing Department, Room 210
Attn: Carole Jones, Chief Purchasing Agent
Henry County Administration Building
P.O. Box 7 (Postal Service)
3300 Kings Mountain Road (UPS or FedEx)
Collinsville, VA 24078-0007**

Facsimile and/or electronic proposals will not be accepted. Proposals received after the announced time and date of receipt, by mail or otherwise, will be returned unopened. Nothing herein is intended to exclude any responsible firm or in any way restrain or restrict competition.

On the contrary, all responsible firms, local, faith-based, minority-owned and female-owned are encouraged to submit a proposal.

The County/PSA reserves the right to reject any or all of the proposals, to waive informalities and to award in part or in whole any or all proposals. Any proposal submitted MUST be signed by an individual authorized to bind the offeror.

RFP #16-01223-A166

Enclosed is a ***“Proposal Requirements and Non-Collusion Statement”*** that must be signed and returned with the proposal or proposal may be rejected.

If you desire not to quote on this proposal, please forward your acknowledgement of NO PROPOSAL SUBMITTED to the above address. Otherwise, your name shall be removed from our bidders list after three (3) non-responses.

Contract Period

A notice of award will be signed and publicly posted once this RFP has been approved. The date on the notice of award will be when the RFP becomes effective (not date of service). Initial contract shall be for services listed within this RFP. However the County of Henry reserves the right to extend potential services to awarded vendor that are like or similar until June 30, 2021. Under the VA Procurement Act, the County/PSA reserves the right to negotiate extending this contract for not more than one (1) additional year after original contract terms. **The above terms shall override any other written terms in this RFP and/or verbal comments made during negotiations, unless authorized by Chief Purchasing Agent.**

Piggy Back Clause

This contract shall be available for piggy backing for any other state and local agency or government agency.

Illegal Aliens

Vendor promises they will not hire illegal aliens. By signing this proposal document the vendor confirms this promise.

Contact for this RFP:

Please contact Tim Pace, P.E., Director of Engineering and Mapping, by calling (276) 634-2559, or e-mailing at tpace@co.henry.va.us for any questions pertaining to this RFP.

SPECIAL TERMS AND CONDITIONS

During the performance of any contract awarded pursuant to this RFP, the contractor agrees as follows:

- A. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, or handicaps, except where religion, sex or national origin is a bona fide occupational qualification reasonably necessary to the operation of the contractor. The Contractor agrees to post in conspicuous places, available to provisions of this nondiscrimination clause.
- B. The Contractor, in all solicitations or advertisements for employees placed on behalf of the contractor, will state that such contractor is an equal opportunity employer.
- C. Notices, advertisements, and solicitations placed in accordance with federal law, rule or regulations shall be deemed sufficient for the purpose of meeting the requirements of this section.

The Contractor shall include in provisions of the foregoing paragraph A, B, and C in every subcontract or purchase order over \$5,000 so that the provisions will be binding upon each subcontractor or vendor.

PROPOSAL REQUIREMENTS AND NON-COLLUSION STATEMENT

My signature certifies that the proposal as submitted complies with all Terms and Conditions as set forth. My signature also certifies that the accompanying proposal is not the result of, or affected by, any unlawful act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under Title 18.2, Chapter 12, Article 1.1 of the Code of Virginia as amended. Futhermore, I understand that fraud and unlawful collusion are crimes under the Virginia Governmental Frauds Act, the Virginia Bid Rigging Act, and Virginia Antitrust Act, and Federal Law, and can result in fines, prison sentences, and civil damage awards.

I hereby certify that I am authorized to sign as a Representative for the Firm:

NAME OF FIRM _____

ADDRESS _____

SIGNATURE _____

NAME (TYPE/PRINT) _____

TITLE _____

DATE _____

TELEPHONE() _____

FAX() _____

RFP# 16-01223-A166

THE 2007 SESSION OF THE VIRGINIA GENERAL ASSEMBLY, PASSED THE HB 1707/SB 1346 BILL, EFFECTIVE ON JULY 1, 2007. HENRY COUNTY IS REQUIRING ALL VENDORS TO ABIDE BY THE FOLLOWING NEW LEGISLATION.

HB 1707/SB 1346

PROVIDES THAT AS A CONDITION OF AWARDING A CONTRACT FOR THE PROVISION OF SERVICES THAT REQUIRE THE CONTRACTOR OR HIS EMPLOYEES TO HAVE DIRECT CONTACT WITH STUDENTS ON SCHOOL PROPERTY DURING REGULAR SCHOOL HOURS, THE SCHOOL BOARD MUST REQUIRE THE CONTRACTOR TO PROVIDE CERTIFICATION THAT ALL EMPLOYEES WHO WILL HAVE DIRECT CONTACT WITH STUDENTS HAVE NOT BEEN CONVICTED OF A FELONY OR ANY OFFENSE INVOLVING THE SEXUAL MOLESTATION OR PHYSICAL OR SEXUAL ABUSE OR RAPE OF A CHILD. THE BILL ALSO PROVIDES THAT THE REQUIREMENT BE WAIVED IN EMERGENCY SITUATIONS WHEN IT IS REASONABLY ANTICIPATED THAT THE CONTRACTOR OR HIS EMPLOYEES WILL HAVE NO DIRECT CONTACT WITH STUDENTS.

PLEASE INDICATE APPROPRIATE BOX BELOW.

_____ I AGREE TO ABIDE BY THIS LEGISLATION HB 1707/SB 1346.

_____ THIS LEGISLATION DOES NOT APPLY TO THIS SOLICITATION.

THE AWARDED VENDOR MAY BE REQUIRED TO PROVIDE ADDITIONAL PAPERWORK BUT ONLY A SIGNATURE IS NECESSARY AT THIS TIME.

AUTHORIZED VENDOR SIGNATURE

DATE

COMPANY NAME

PRINTED NAME AND TITLE

Subcontractor Information

Must fill form out completely even if no subcontractors are being used.

You must check appropriate box below and list any subcontractors that will be used for this RFP# 16-01223-A166 for **Countywide Mapping Project**.

_____ I will be using subcontractors. (See list below)

_____ I may or may not be using subcontractors. Not sure at this time. If you are the awarded vendor, you are responsible for contacting Commissioner of Revenue's Office at (276-634-4691) with subcontractor information. Payment of invoices is contingent upon receiving required information.

_____ I will not be using subcontractors.

1.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

2.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

3.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

4.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

5.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

6.) Subcontractors Company Name _____

Contact Person _____ Telephone # _____

Bidders Company Name _____

Bidders Authorized Signature _____ **Date:** _____

Bidders Telephone # _____ **Federal ID #** _____

*Note- Add a separate sheet if you need additional space for subcontractors

I. Introduction

The purpose of this countywide mapping project is to acquire current color digital orthophotography and update the existing County planimetric feature layers.

Henry County General Information

The County project area covers approximately 384 square miles of land area and contains over 60,000 parcels. The terrain in the County has approximately 700' of vertical relief, elevations ranging from 700' up to 1,400' and contains two rivers and numerous tributaries.

There is one (1) town, Ridgeway and one (1) city, Martinsville. The County currently has existing county wide LiDAR, color digital orthoimagery and planimetric feature layers from a previous mapping projects completed in 2008. The County also possesses existing color digital orthoimagery provided by the VGIN program from 2011.

The County has been using both ESRI and Autodesk products for in-house GIS and Engineering data integration and maintenance. The County also has its own field survey crew that utilizes current GPS technology.

Scope of Project

All work will be performed in reference to North American Datum 1983 (NAD83-2011), Virginia State Plane Coordinate System and North American Vertical Datum 1988 (NAVD88) in United States Survey feet .

1. **GPS Ground Control:** The County has surveyed and maintained approximately two hundred (200) existing control stations throughout the County. Many of these existing stations have been used for past mapping and orthophoto projects. The County will be responsible for coordinating with the Contractor, which existing control stations will require pre-marking prior to the acquisition of color aerial photography. If additional GPS ground control is necessary, the County will also be responsible for setting, pre-marking and occupying any new control stations required by the Contractor. The County will also pre-mark existing control stations to be used as quality control check points for other phases of the project.
2. **Digital Aerial Imagery:** 3-Band, 8-bit, color digital aerial imagery shall be acquired during late February, early March, 2016, for the area designated on the "Contract Map". The Contractor shall provide a proposed flight line and exposure diagram in digital format compatible with both ESRI and Autodesk software platforms. The digital aerial imagery will be acquired by using a modern, large format, frame format digital airborne sensor. The Contractor must provide a copy of the current manufacturer's sensor calibration report. The Contractor shall deliver to the County a copy of the post processed exploitation imagery within thirty (30) days of the date of acquisition.

3. Global Navigation Satellite System and Inertial Measurement Unit (GNSS-IMU): To support the GPS ground control; during the aerial imagery mission, GNSS-IMU data shall be acquired by the Contractor, providing high accurate exposure station coordinates and sensor rotation angles for the purpose of Digital Aero-Triangulation. Upon completion of the aerial imagery acquisition mission, the Contractor will provide the County with a detailed report summarizing the mission, including the raw airborne GNSS-IMU data, final post processed GNSS-IMU data, antenna offsets and computations.
4. Digital Aero-Triangulation (DAT): Digital aero-triangulation of the exploitation imagery will be conducted by the Contractor. Under no circumstances should any aerial triangulation solutions from previous County or VGIN projects be used to pass or drop pass, tie or control points for the 2016 project. A report, detailing the DAT process including, summary, GPS ground control coordinates, pass and tie point coordinates, all measurement data, computations, residuals and other results will be submitted by the Contractor and must be approved by the County prior to any data collection or orthoimagery production phases are started.
5. LiDAR 3D Stereo Review and Edit: Using softcopy stereo photogrammetry, the Contractor shall review the existing County LiDAR DEMs and make any necessary edits to ensure the LiDAR data meets the designed orthoimagery accuracy specifications.
6. Color Digital Orthoimagery: One thousand eight hundred eighty one (1,881) orthoimage tiles at 0.5' (6 inch) pixel resolution will be produced covering the entire County by the Contractor. Image tile dimensions will be 2,500' by 2,500'. The Contractor will be required to maintain image radiometry and use strategic seam line image mosaic techniques for all digital orthoimagery produced. All orthoimage tiles will be full tiles with no void areas of black or white pixels, border data or softcopy masks will not be required.
7. Planimetric Feature Update: The County has existing planimetric feature data at 1"=100'. Existing layers include, buildings, storage tanks, road edges, railroad centerlines, hydrographic features, hydrographic structures, utility poles, utility towers, driveways over 200', and parking lots. The Contractor shall update all existing layers from the new digital aerial imagery. Updating planimetric feature layers within the City of Martinsville is not included in this project phase.
8. Utility Feature Update: In 2007, the County pre-marked sanitary sewer manholes, water meters, fire hydrants and water valves throughout the County prior to the acquisition of the 2007 aerial photography, these features were then captured during the 2007 County planimetric feature mapping update. The County plans to pre-mark any new utility features constructed between 2007 and 2015 prior to digital aerial imagery acquisition. The Contractor shall collect and classify all pre-marked utility features appearing in the new color digital aerial imagery during the Planimetric Feature Update phase.

9. Digital Terrain Model (DTM) and 2' Contour Update: In 2007, the County took delivery of County wide 2' contour data that was generated from refined bare earth LiDAR data and supplemental 3D planimetric features used as break lines. The Contractor will be required to update the existing DTM and subsequent 2' contours for areas of major change in surface.

Project Specifications

Horizontal and Vertical Control

General: Sufficient horizontal vertical control surveys shall be established by the County for all photogrammetric mapping purposes. The Contractor will indicate on a copy of the "Contract Map" the horizontal and vertical control stations (existing and to be established) that will be pre-marked. The use of GNSS-IMU in combination with ground survey is required; the amount of ground control may be reduced but not eliminated by the use of GNSS-IMU technology. All surveying activities will be directed, executed approved, and certified by Henry County.

GNSS-IMU

GNSS-IMU: The use of airborne GNSS-IMU in combination with ground survey is required; the amount of ground control may be reduced but not eliminated by the use of GNSS-IMU. The following specifications shall be met for GNSS-IMU:

General: GNSS-IMU solutions shall be required to utilize dual-frequency GPS systems during the digital aerial imagery acquisition missions. The Contractor shall post-process the GNSS-IMU data relative to simultaneous observations collected at a fixed land-based reference station. Geodetic positions and sensor rotation angles corresponding to the exploitation image stations at the time of exposure shall be calculated and (later) combined with ground control point values in the digital aerial triangulation solution.

Base Station: Simultaneous to the digital aerial imagery and GNSS-IMU acquisition, a static GPS reference receiver must be used to record satellite data over known geodetic control point on the ground. This additional receiver must be active during the entire acquisition mission. Active NGS and/or Trimble CORS stations located within Henry County can be used.

Satellite Geometry: The PDOP shall not be greater than three (3) for 90 percent of the flight lines and not greater than five (5) for the remaining 10 percent.

Post-processing Software: The GNSS-IMU post-processing software must be capable of backward and forward processing.

Digital Aerial Imagery

Project Area: The location, size, and boundaries of the area to be flown will be outlined on a map and in a way to show the number of digital orthoimage tiles to be provided; the map shall be at a scale adequate for its purpose and shall be in hardcopy and electronic format. This county map shall be entitled the "Contract Map" and shall be attached to and become a part of any contractual agreement.

Conditions During Imagery Acquisition: Digital aerial imagery shall be acquired during the period when deciduous trees are barren and when the sun angle or elevation is not less than 33 degrees above the horizon. Digital aerial imagery will not be acquired when the ground is obscured by snow, haze, fog, or dust; when streams are not within their normal banks; or when the clouds or cloud shadows will appear in any one photograph. Photography shall be acquired only when well-defined images can be obtained.

Nadir Ground Sampling Distance (GSD): The altitude above average ground elevation for digital aerial imagery shall be such that the Nadir GSD shall be between 0.15 feet to 0.50 feet for 75.0% of planned images. Further, Nadir GSD shall not be greater than 0.53 for any planned images.

Henry County can provide existing LiDAR data for 3D flight planning purposes.

Flight Plan: The Contractor's flight plan shall be drawn on a copy of the "Contract Map". Each flight line will be flown continuously across the project area. Every effort shall be made to avoid breaks within individual flight lines. All planned images within a single flight line shall be acquired with the same digital airborne sensor. All side boundaries shall be covered by a minimum of thirty percent (30%) of image footprint.

Re-flights: Within one (1) week of completing digital aerial imagery acquisition the Contractor shall submit a detailed quality control report to the County confirming compliance with the specifications. Unacceptable aerial imagery shall be corrected by the Contractor at no additional cost to the County, with re-flight coverage overlapping the accepted imagery by at least three (3) images. Re-flight imagery shall be acquired with the same digital airborne sensor used to acquire the original imagery and shall be exposed as nearly as possible to the same time of day and lighting conditions as the original exposures. Re-flights shall be flown immediately (ideally within one week of the original flight).

Forward Overlap: Forward overlap in the line of flight shall average not less than fifty-eight percent (58%) or more than sixty-two percent (62%) at the mean elevation of the terrain, unless otherwise specified. Individual forward overlaps shall not be less than fifty-five percent (55%) or more than sixty-five percent (65%), excepting the situation where a forward overlap in areas of low elevation must exceed sixty-five percent (65%) to attain the minimum fifty-five percent (55%) forward overlap in adjacent areas of higher elevation.

Side Overlap: Side overlap between adjacent parallel flight lines shall average thirty five percent (35%) plus or minus three percent (± 3 percent) depending on terrain. Any parallel flight lines having side overlap of less than twenty-five percent (35%) shall be rejected and re-flown.

Crab: Crab in excess of three degrees (3°) measured with respect to both lines of flight may be cause for rejection of a flight line or any portion thereof in which the excess crab occurs. This includes relative crab between any two successive exposures.

Tilt: Tilt of the camera verticality at the time of exposure shall not exceed three (3) degrees, nor shall it exceed five (5) degrees between successive exposure stations. Average tilt over the entire project shall not exceed one (1) degree.

Digital Airborne Sensor: The digital airborne sensor used must be a precision aerial mapping frame format sensor with a low distortion, high-resolution lens. The digital airborne sensor system must be equipped with electronic forward motion compensation (FMC). The digital airborne sensor system must be coupled with GNSS-IMU systems to provide horizontal positions and omega-phi-kappa rotation angles for each aerial exposure. A recent manufacturer's camera calibration report is required for each digital airborne sensor used to obtain digital aerial imagery. Each calibration report shall be submitted to the County for review and approval before proceeding with work.

Flight Log: For each digital aerial imagery acquisition mission, the Contractor shall prepare a flight log containing the Contractors contact information, mission date, project name, aircraft ID, sensor ID and names of crew members. In addition, the following shall be recorded for each flight line: altitude, flight line number, start time, end time, frame number start, frame number end, number of frames and observations about the conditions. These flight logs, or copies, shall be delivered to the County within twenty-four (24) hours of the time of acquisition mission completion.

Image Post Processing: The Contractor shall be required to post process the raw digital aerial imagery as 3-band, 8-bit, uncompressed TIFF format exploitation images. This uncompressed TIFF format must be maintained throughout the entire orthoimage production workflow, the use of TIFFJPG, JPG2000 or any other image compression format is not acceptable during orthoimagery production is not acceptable.

Disposition of Digital Aerial Imagery: The raw and post processed digital airborne imagery and any interim or final products derived from the imagery are the property of the County. The Contractor will be responsible for storage of the raw and post processed digital airborne imagery, other relative project data and interim or final products under proper conditions at no cost to the County, for a period of time not to exceed five (5) years from the completion of the project. The Contractor shall not make, sell, or loan copies of the digital aerial imagery or any other products without the expressed written approval of the County.

Digital Aero-Triangulation

General: The Contractor shall complete digital aero-triangulation to extend the horizontal and vertical control across the entire project area. Adequate ground control should be planned along the perimeter of the project area; within the project area, ground control should be added as necessary to limit error propagation in the adjusted pass and tie point coordinates. Existing or new GPS ground control will be provided by the County.

In producing the aero-triangulation, the Contractor shall perform a fully analytical simultaneous bundle block adjustment using a weighted least squares adjustment to meet the required accuracy requirements.

Ground Coordinate Systems: All ground positions determined by aero-triangulation will be in the Virginia State Plane Coordinate System, NAD 1983 and NGVD 1988.

Horizontal Accuracy Standards: Final digital aero-triangulation results using the GPS ground control and post processed GNSS-IMU data must produce orthoimagery tiles that meet ASPRS Class I accuracy for 1"=100' scale planimetric data with a limiting RMSE of 1.0 foot in each X and Y.

Aero-Triangulation Measurement: Aero-triangulation shall be accomplished by softcopy procedures that involve softcopy workstations, fully analytical aero-triangulation software, and high-resolution digital imagery. The Contractor must follow accepted softcopy aero-triangulation procedures and utilize equipment that will achieve the aero-triangulation accuracy required to meet or exceed the required RMS accuracy. All control point, pass point and tie point measurements must be accomplished in 3D stereo. RMS for individual control, pass and tie point photo measurements shall not exceed 10um.

Each digital aerial image will carry a minimum of nine (9) pass or tie points at the traditional Von-Gruber locations, with the exception of end frames of flight lines which will carry a minimum of six (6) pass or tie points; tie points being pass points which are then transferred to parallel overlapping flight lines. The Contractor is ultimately responsible for designing the aero-triangulation scheme that will meet the accuracy requirements of the project.

Checkpoints: Horizontal and vertical check points that have been established through GPS ground control procedures shall be pre-marked by the County for accuracy checking purposes and will not be provided to the Contractor for aero-triangulation adjustment. The County will conduct the accuracy checks, comparing final orthoimagery to the pre-marked check points.

Digital Aero-Triangulation Report: Immediately upon completion of all aero-triangulation, the Contractor will prepare a formal DAT report to be submitted to the County. Hardcopy and digital (PDF) copies of the report are required and shall include: a narrative; list of equipment and software; camera calibration reports; measurement data; input control coordinates; final adjusted control, pass and tie point coordinates; overall sigma, RMS x, y and z for the final adjustment; individual RMS residuals for each control point; final exterior orientation parameters (single photo resection) and a description and explanation

for any control point withheld from the final bundle block adjustment.

Digital Orthoimagery

General: All orthoimagery will be subject to quality control testing by the County, by independent Consultants, and/or by the Contractor working under direct County supervision to ensure that all digital orthoimagery comply with the image quality and horizontal accuracy standards.

Image Radiometry: The Contractor will take necessary steps and procedures to ensure consistent color, tone and contrast across the entire digital orthoimagery coverage without causing image data loss or degradation of image quality and clarity.

Ground Resolution: The output pixel resolution for the final digital orthoimagery will be 0.5' (6 inches).

Orthoimage Rectification Algorithm: Image rectification shall be carried out using either the cubic convolution or exponential algorithm.

Orthoimagery Coverage Area: The geographic extent of each digital orthoimage tile shall be 2,500' by 2,500' based upon Virginia State Plane Coordinates (NAD83-2011) US Survey Feet. Each digital orthoimage tile shall complete, with no void area of white (255,255,255) or black (0,0,0) pixels. There shall be no overlap between adjacent digital orthoimage tiles.

Image Mosaic Technique: Mosaic of the rectified digital aerial images shall be accomplished using manual seam line methods only; the use of automated mosaic seam line methods is not acceptable.

Mosaic seam lines shall not cross through buildings, bridges, or other man made structures and shall try to follow features or any other obvious logical path that will help hide seam lines and allow for a seamless mosaic result. Acceptable mosaic techniques must produce quality orthoimagery of consistent tone and contrast and must do so without obvious seam lines within reasonable expectations.

The Contractor will be required to deliver final seam line polygons in ESRI shapefile format, attributed with: Flight Line ID; Exposure ID; Date and Exposure Time.

Orthoimagery Quality: The digital orthoimagery shall not contain defects such as; clouds, cloud shadows, smoke (factory or power plant discharge is acceptable), blurs, smears, CCD or CMOS artifacts, severe tonal or color changes, or any other visual inconsistencies.

Image Compression: The Contractor shall deliver to the County a complete set of uncompressed digital orthoimage tiles in TIFF (.tiff) format. In addition to the TIFF images, the Contractor shall also deliver to the County two sets of compressed orthoimage tiles and or mosaics in MrSID format. The MrSID compression ratios will be designated by the County.

Media/Packaging: The Contractor will deliver the digital Orthoimagery files along with all other digital project deliverables on an external USB storage device with a minimum capacity of 2 terabytes.

Planimetric Update

General: Henry County has existing 1"=100' planimetric feature layers that require update. The City of Martinsville as it is designated on the Contract Map, is not to be included in this phase. The Contractor shall use 3D stereo photogrammetry techniques and methods, to review, edit and update the existing County planimetric feature layers.

Features: Features that require update include but not limited to: buildings, roadways, roadway structures, hydrographic features, hydrographic structures, railroad centerlines, storage tanks, utility poles, utility towers, driveways over 200' and parking lots. These features were originally captured from 1"=660' scale and color aerial photography and are typical of planimetric content designed for 1"=100' scale mapping.

Use of updated Features as DTM Breaklines: During the update process, it will be required of the Contractor to ensure that all planimetric features are reviewed and updated horizontally and vertically to meet 1"=100' scale, 2' contour mapping vertical accuracy (based upon National Map Accuracy Standards). These features would be road edges (paved and unpaved), driveways, parking lots, major retaining walls, railroads and the hydrographic features and structures. These updated features could be used as DTM break line features during orthoimagery production or 2' contour generation.

Utility Features: Henry County will pre-mark all sanitary sewer manholes, water valves, fire hydrants and water meters that have been constructed or installed since 2007 prior to acquisition of digital aerial imagery. The Contractor shall collect and classify these utility features during the planimetric update phase.

Existing LiDAR and 2' Contour Update

General: The Contractor shall use 3D stereo photogrammetry to review and edit the existing County Bare Earth LiDAR data for areas that exhibit significant change in terrain surface due to any type of construction. The Contractor will be required to remove LiDAR data points that conflict with any new or updated 3D planimetric features that would be utilized as a DTM break line. The City of Martinsville as it is designated on the Contract Map is not to be included in this phase.

DTM Break Lines: In addition to updated 3D planimetric features, for areas of the County that exhibit significant change in terrain surface the Contractor shall collect 3D DTM break lines for any change in terrain slope. These terrain slope changes may be natural occurrence or man made structures.

Contours: The Contractor shall update existing (2') contour data files. The foot print of each data file shall match its corresponding digital orthophoto image tile, covering the

same 2,500' by 2,500' geographic area. Only those tiles that require DTM update and revised 2' contours shall be delivered. Existing tiles that exhibit no changes and do not require DTM and revised 2' contours are not required to be regenerated or delivered.

Revised contour data files shall edge match adjoining data files. Index contours may be labeled using automated techniques. Supplemental spot elevations are not required. The Contractor shall make any necessary edits to correct gross contour blunders. The Contractor should use any means available (software or algorithms) to filter the contours of unnecessary points, without drastically changing the shape or horizontal location of the contour lines. The emphasis for this project is accuracy, not necessarily appearance.

Further DTM Review and Update: Once the entire project is complete, delivered and accepted by the County, the Contractor may be called upon to provide further, more in depth and detailed planimetric and DTM review, supplement and update for specific projects throughout the County for Engineering and design purposes. Specifications and fees for these project specific tasks will be negotiated and agreed upon on an individual project basis.

II. Proposal Content

Each proposal addressing the scope of work shall be presented in a full, written report, which shall include, but not necessarily limited, to the following:

1. A statement of understanding of the work to be done and a description of the approach and procedures which will be employed in completing the project.
2. An implementation schedule giving length of time required to complete the project.
3. Brief outline of the firm's qualifications. Biographies, including professional experience of individuals who will be assigned to the project.
4. Project references within the past five years with names, addresses, and telephone numbers of person knowledgeable about quality of work on similar projects and who may be contacted for reference. Smaller projects completed for Henry County may be included as references.

III. Selection Criteria

Proposals will be evaluated based on the following information using a 100 point scoring system:

1. Understanding of the project and firm's approach to organize and manage the project (20 Points).
2. Past work experience in local area demonstrating ability to develop complete, economical solutions for similar projects in a timely manner (30 Points).
3. Capacity to accomplish the work in a specified time (20 Points).
4. Firm's availability of staff, facilities, and equipment to carry out contracted services efficiently and expeditiously (20 Points).

5. Stability and continuity of the firm's personnel and management structure (10 Points).

IV. Selection Process

A selection committee will review all responses. Formal or informal discussions may take place with firms that the committee selects as the most qualified. Henry County reserves the right to final selection of consultant, waive informalities and/or irregularities, accept or reject any or all proposals for services and award the contract as deemed to be in the best interest of the County.

It is the responsibility of the prospective consultant to inquire about and to clarify any requirements of the Request for Proposal which are not understood. All inquiries concerning this Request for Proposal should be addressed to Tim Pace, P.E., Director of Engineering and Mapping, by calling (276) 634-2559, or e-mailing at tpace@co.henry.va.us.