



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE
REQUEST FOR PROPOSAL

Proposal Number:

(MM49)

Issue Date of RFP:

(9/15/06)

Buyer Contact Name: Melinda Bobbitt, CPPB, Director of Boone County Purchasing

Phone Number: (573) 886-4391 Fax Number: (573) 886-4390

E-Mail: mbobbitt@boonecountymo.org

RFP Closing:

Date: 10/17/06

Time: 10:30 A.M.

Commodities or Service Requested:

DIGITAL ORTHOPHOTOGRAPHY AND PLANIMETRIC AND TOPOGRAPHIC MAPPING

Please submit your sealed proposal response prior to the date and time for RFP Closing as specified above to the following office:

Boone County Purchasing .

601 East Walnut, Room 208 .

Columbia, MO 65201 .

_____ .

_____ .



NOTICE OF REQUEST FOR PORPOSAL

The Mid-Missouri Public Purchasing Cooperative is accepting Request for Proposals for the following:

PROPOSAL #: MM49 – DIGITAL ORTHOPHOTOGRAPHY AND PLANIMETRIC AND TOPOGRAPHIC MAPPING

Sealed proposals will be accepted until **10:30 a.m. on Tuesday, October 17, 2006** in the Boone County Purchasing Office, Boone County Johnson Building, Room 208, 601 E. Walnut Street, Columbia, MO 65201.

Request for Proposals are available in the Purchasing Office and requests for copies may be made by phone (573) 886-4391; fax (573) 886-4390 or e-mail: mbobbitt@boonecountymo.org.

Vendors may obtain further information on the Boone County Web Page at <http://www.showmeboone.com>.

Melinda Bobbitt, CPPB
Director of Purchasing

Insertion: September 17, 2006
COLUMBIA MISSOURIAN



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

INSTRUCTIONS AND GENERAL CONDITIONS

The Mid-Missouri Public Purchasing Cooperative, herein after referred to as Cooperative, was developed in order for its members to create volume buying through standardization of quality in order to secure a greater return for the expenditure of public funds. Only Mid-Missouri governmental agencies are permitted to become members of this Cooperative.

1. Sealed proposals, subject to Instructions and General Conditions, General Provisions, and any special conditions set forth herein, will be received at the Office of the Cooperative Member Agency whose address is stated in the proposal documents until the RFP closing date and time indicated herein for furnishing the Cooperative Member Agencies with the material and/or list of materials, supplies, equipment or services shown on the attached sheet(s).
2. Proposals must be submitted in a sealed envelope/box identified with the RFP number and date of closing. If you do not care to submit a proposal, please return "No Bid Response Form" and note your reason. No fax or electronic transmitted proposal responses will be accepted.
3. Do not include Federal Excise Tax or Sales and Use Taxes in proposed prices, as the Cooperative Member Agencies are exempt from them by law. Tax exemption certificates will be furnished if required.
4. The delivery date(s) or when work will start, shall be stated in definite terms, as they will be taken into consideration in making the award.
5. Cooperative Member Agencies reserve the right to cancel all or any part of orders if delivery is not made or work is not started as guaranteed. In case of delay, the Contractor **must** notify the Cooperative Member Agency that issued the purchase order.
6. In case of any default by the Contractor, the Cooperative Member Agency may procure the product or service from other sources and hold the Contractor responsible for any damages incurred including, but not limited to, excess cost or handling charge. The Cooperative shall have the right to remove any Contractor who defaults on any contract with the Cooperative from all bidders' lists.
7. Prices must be stated in units of quantity specified on the Response/Pricing Page, and must be firm. Pricing qualified by escalator clauses may not be considered.
8. Delivery of Proposals: Sealed proposals, subject to Instructions and General Conditions and any special conditions set forth herein, will be received at the Boone County Purchasing office until the proposal closing date and time indicated herein for furnishing the County with services as detailed in the following request for proposal.
 - a) **Proposal Closing:** All proposals shall be **delivered before 10:30 A.M.**, C.S.T., on Tuesday, **October 17, 2006 to:**

Boone County Purchasing Department
Melinda Bobbitt, CPPB, Director
601 E. Walnut Street, Room 208
Columbia, Missouri 65201-4460
 - b) The County may not accept any proposals received after **10:30 A.M.** and may return such late proposals to the Offeror.
 - c) Offerors must submit one (1) original, and seven (7) copies of the proposal (total of eight). Proposals will be opened publicly but only names of Offerors will be read aloud. All proposal responses will be considered public information and following contract execution or rejection of all proposal responses, all responses will become a part of public record and will be released to any person or firm who requests it.
 - d) Proposals must be submitted in a sealed envelope identified with the proposal number and date of closing. List the proposal number on the outside of the box or envelope and note "Response to Request for Proposal enclosed."
 - e) If you have obtained this proposal document from our Web Page or from a source other than the Boone County Purchasing Department, please check with our office prior to submitting your proposal to ensure that you have a complete package. The Purchasing Department cannot be responsible for providing addenda if we do not have you on our Vendor list for this proposal.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

GENERAL PROVISIONS

1. **OSHA COMPLIANCE:**

All material or equipment furnished shall meet the minimum requirements of the Occupational Safety & Health Standard Act (OSHA) published in the Federal Register. All alleged violations and deviations from said State and Federal regulations or standards of the items or services to be furnished hereunder, must be set forth on the Response Form at the time of submission of the RFP. Or if at any later date the items or services contained herein shall not meet all applicable State and Federal requirements after the Offeror is awarded the contract hereunder, the Offeror must notify the Cooperative immediately by registered mail.

2. **PATENT AND COPYRIGHT:**

a. The Contractor and its Surety shall pay for all royalties, license fees, and patent or invention rights or copyrights and defend all suits or claims for infringements of any part or invention right or copyrights involved in the items furnished hereunder.

b. The Contractor and its Surety shall hold and save the Cooperative and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance furnished in the performance of the contract, including its use by the Owner, unless otherwise specifically stipulated.

3. **DISPUTES:**

If any dispute concerning a question of fact arises under this contract, other than termination for default or convenience, the Contractor and Cooperative Member Agency responsible for administration of this contract shall make a good faith effort to resolve the dispute. If the dispute cannot be resolved by agreement, then the Cooperative shall resolve the dispute and send a written copy of its decision to the Contractor and the responsible agency.

4. **TERMINATION FOR DEFAULT:**

The Cooperative may, by written notice, terminate this contract in whole or in part for failure of the Contractor to perform any of the provisions thereof. In such event, the Contractor shall be liable for damages, including the excess cost of re-procuring similar supplies or services; provided, that if (a) it is determined for any reason that the contractor was not in default or, (b) failure to perform is beyond the Contractor's or subcontractor's control, fault or negligence, the termination shall be deemed to be a termination for convenience. Termination shall be effective ten (10) days from the Contractor's receipt of notice.

5. **TERMINATION FOR CONVENIENCE:**

The Cooperative may, by written notice, terminate this contract in whole or in part when it is in the best interest of the Cooperative. If this contract is for supplies and is to be terminated, the Contractor shall be compensated in accordance with his auditable costs to point of notification of termination. To the extent that this contract is for services and is so terminated, the Cooperative Member Agencies shall be liable only for payment in accordance with the payment provisions of this contract for services rendered to the effective date of termination. Termination shall be effective ten (10) days from the Contractor's receipt of notice unless a longer time period is provided in the notice.

6. **TERM & SUPPLY CONTRACT DEFINED:**

A term and supply contract shall be deemed to mean a contract under which the supplier of articles, commodities, supplies materials, equipment, and services agrees to furnish all of the needs of the various Cooperative Member Agencies for the articles, commodities, supplies, materials, equipment, and services set forth in the quotation, during the period of the contract at the unit price proposed and as required from time to time by the Member Agencies, be such needs in excess of or less than the estimated quantities set forth in the Request for Proposal. The contract will provide that the Cooperative Member Agencies will purchase, by issuance of Purchase Orders, such articles, commodities, supplies, materials and equipment solely from the supplier to whom the requirement contract is awarded for the contract term.

7. **FUND ALLOCATION:**

Continuance of any resulting agreement, contract or issuance of purchase orders after a Cooperative Member Agency's fiscal year end is contingent upon the allocation of funds for the next proceeding fiscal year.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

GENERAL PROVISIONS, Continued

8. **OFFICIALS NOT TO BENEFIT:**

No regular employee or elected or appointed member of any Cooperative Member Agency shall be admitted to any share or part of this contract, or to any benefit that shall arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

9. **HAZARDOUS MATERIAL:**

When material furnished is hazardous material as defined by D.O.T. regulations, the following certification must be made on the bill of lading: "This is to certify that the above named articles are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to applicable regulations of the Department of Transportation."

10. **DOMESTIC PRODUCTS:**

Offerors are encouraged to offer products manufactured, assembled or produced in the United States if the quality and price are comparable with other goods.

The Mid-Missouri Public Purchasing Cooperative has adopted a policy which is binding upon all members of the cooperative, and which by the contractor shall be binding upon independent contractors and subcontractors with the Cooperative, whereby all other things being equal and when the same can be secured without additional cost over foreign products, or products of other states, a preference shall be granted in all construction, repair, and purchase contracts, to all products, commodities, materials, supplies, and articles mined, grown, produced, and manufactured in marketable quantity and quality in the State of Missouri, and to all firms, corporations, or individuals doing business as Missouri firms, corporations, or individuals.

11. **RECYCLED PRODUCTS:**

All Offerors who wish to receive consideration on products offered with recycled materials content must properly complete, sign, and return a certification of product content with their RFP.

12. **EQUAL OPPORTUNITY:**

Members of the Cooperative are equal opportunity affirmative action employers pursuant to federal and state law, and all respondents submitting bids shall be considered to be EEO/AA employers in compliance with federal and state laws, unless otherwise stipulated by the Offerors herein.

13. **AMERICANS WITH DISABILITIES ACT:**

The successful contractor agrees to comply with all applicable provisions of the Americans with Disabilities Act and the regulations implementing the Act, including those regulations governing employment practices.

If this contract involves the contractor providing services directly to the public, the successful contractor shall make services, programs and activities governed by this agreement accessible to the disabled as required by the Americans with Disabilities Act and its implementing regulations. Payment of funds under this agreement is conditional upon the successful contractor certifying to the Cooperative in writing that it is complying with the Americans with Disabilities Act and 28 CFR Part 35.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

INTRODUCTION AND GENERAL INFORMATION

1. Introduction

This document constitutes a request for sealed PROPOSALS **DIGITAL ORTHOPHOTOGRAPHY AND PLANIMETRIC AND TOPOGRAPHIC MAPPING** as set forth herein.

Organization – This document, referred to as a Request for Proposal (RFP), is divided into the following parts:

- 1) Instructions and General Conditions
- 2) General Provisions
- 3) Introduction and General Information
- 4) Scope of Services
- 5) Proposal Submission Information
- 6) Response/Pricing Page
- 7) Exhibit C - Debarment
- 8) No Bid Response Form
- 9) Attachments
 - a. PHASE I – Orthophotography Contract Map
 - b. PHASE II – Topographic / Planimetric Contract Map
 - c. Geographic Reference System Diagram

2. Guideline for Written Questions

All questions regarding this Request for Proposal shall be submitted in writing no later than **10:30 a.m., Tuesday, October 10, 2006**. All questions must be mailed, faxed or e-mailed to the attention of Melinda Bobbitt, CPPB, Director of Purchasing. All such questions will be answered in writing, and such answers will be provided to all parties having obtained a Request for Proposal packet by the County by posting the addendum on the County Web site at www.showmeboone.com (Select Purchasing, then Current Bid Opportunities). Submit questions to:

Melinda Bobbitt, CPPB
Director of Purchasing
601 E. Walnut Street, Room 208
Columbia, Missouri 65201
Phone: (573) 886-4391
Fax: (573) 886-4390
E-mail: mbobbitt@boonecountymo.org

In the event that it becomes necessary to revise any part of this RFP, written addenda will be issued. Any addendum to this RFP is valid only if in writing and issued by the Boone County Purchasing Department. Verbal conversations or agreements with any officer, agent, or employee of the County which modify any terms or obligations of this RFP are invalid.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

SCOPE OF SERVICES

1. Project Description

The Missouri Public Purchasing Cooperative seeks a qualified firm to provide the County of Boone, Missouri with a complete set of updated digital aerial imagery and the City of Columbia, Missouri with updated digital topographic and planimetric mapping. Each entity will either enter into separate contractual agreement(s) or issue separate purchase orders.

2. Background Information

Boone County is situated in Central Missouri and is dissected by Interstate 70 and US Highway 63. It is a fast-growing county known for its highly educated work force, low cost of living, award-winning schools, and unique blend of rural and urban lifestyles. Boone County includes nine communities: six cities (Columbia, Centralia, Ashland, Rocheport, Sturgeon, Hallsville) and three other communities (the Town of Harrisburg, the Village of Hartsburg and McBaine). The County has a population of approximately 143,000 and contains 691 square miles.

Boone County carried out its most recent county-wide digital aerial photography project in 2002. The submitted proposal response for Aerial Photos for Boone County is currently posted on the Boone County web site. Among the products delivered were black and white orthorectified digital photos. Photos in the more populated areas were acquired at 1"=100' scale to support the creation of 1' topographic and planimetric products through a joint RFP with the City of Columbia. All other areas were acquired at 1"=200' scale.

Additional information about the County of Boone – Missouri can be obtained from the following Internet web site at: <http://www.showmeboone.com>.

Although an attempt has been made to provide accurate and up-to-date information, the County of Boone – Missouri does not warrant or represent that the background information provided herein reflects all relationships or existing conditions related to this Request for Proposal.

3. Scope of Work

3.3.1. Purpose – The purpose of the Scope of Work is to provide the County of Boone, Missouri with a complete set of updated digital aerial imagery described in PHASE I of this Request for Proposal. In addition, the Scope of Work will provide the City of Columbia, Missouri with updated digital topographic and planimetric mapping for the areas shown on PHASE II Topographic / Planimetric Contract Map. The contractor shall furnish the materials, supervision, labor, equipment, and transportation, and shall execute and complete all of the work required by the contract in conformance with these specifications.

The following is a description of the various tasks that will define the Scope of Work. Within each PHASE, there are a number of identified OPTIONS. The County will only award one OPTION for PHASE I. Additionally, the City of Columbia will only award one OPTION for PHASE II. The County and City will expect the Contractor to perform the services noted below. Please respond to this listing in your proposal.

3.3.2. TECHNICAL SPECIFICATIONS FOR PHASE I: DIGITAL ORTHOPHOTOS

3.3.2.1. AERIAL PHOTOGRAPHY

a. Project Area and County Orthophotography Contract Map:

The locations, size and boundaries of the areas to be mapped are outlined on the "PHASE I – Orthophotography Contract Map" and further subdivided and designated in a way to show the number and scales of the final digital orthophotos to be prepared. This marked County map is entitled the "PHASE I – Orthophotography Contract Map" and is attached to and made part of the contractual agreement.

b. Conditions During Photography:

Vertical aerial photography will be accomplished during the period when deciduous trees are barren and when the sun angle is not less than 30 degrees. Photography will not be undertaken when the ground is obscured by snow, haze, fog or dust; when streams are not within their normal banks; when clouds or cloud shadows will appear on more than 5 percent of the area in any one photograph.

The photographs will not contain objectionable shadows caused by relief or low solar altitude. In addition to the above stated "Conditions During Photography", the Aerial Photography flight must be completed during the Spring Equinox.

c. Targeting Existing Horizontal Control Points:

Approved targets will be used to mark horizontal control points for aerial triangulation and control of base map compilation. The horizontal control points that are to be targeted are shown on the "Geographic Reference System Diagram" and are attached to and made a part of the contractual agreement. All horizontal ground control will be based on NAD83 Missouri Central 2402 State Plane Coordinates, U.S. Survey Feet.

The placing of targets is a contractual alternate and shall be included as a separate item in the cost proposal. The County will make the choice when the contract is signed. If the County chooses to place the targets with its own personnel or with a separate contract, the mapping contractor shall provide the County with the required size of target and a proposed flight date. This information shall be provided at least two weeks prior to flying.

If the Contractor deems that additional control (more than that shown on the Geographic Reference System Diagram) is necessary to achieve the required accuracy for the digital orthophoto mapping, this shall be included as a separate item in the cost proposal.

d. Photographic Coverage:

Aerial photography shall be secured based on the intended use of photographs as stated in the contract.

Forward overlap in the line of flight shall average not less than 57% or more than 62% at the mean elevation of the terrain, unless otherwise specified. Individual forward 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.

Wherever there is a change in direction between two flight lines (other than between adjacent parallel flight lines) junction areas between the adjoining flight lines shall be covered stereoscopically by both lines.

Side Overlap between adjacent parallel flight lines shall be 30% +/- 10% at the mean elevation of the terrain. In addition, any point on the flight line as flown shall not deviate from the flight plan location by a distance greater than 10% of the width of coverage of the photograph.

Departures from flight heights required to produce the desired photo scale shall not exceed -2% or +5% unless changed by Air Route Traffic Control Centers.

Changes in the course of the aircraft between successive overlapping photographs within a flight line shall not exceed 3 degrees.

While exposing aerial photography, the camera shall be compensated for crab of the aircraft, with resultant error not exceeding 3 degrees.

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 negatives of the same nominal scale shall not exceed 1 degree.

The combined effect of aircraft course corrections, crab and tilt shall result in an apparent crab not greater than 5 degrees on successive photography.

Apparent crab is defined as the angle between a line joining fiducial marks in the direction of flight and the line between the indicated principal point and the conjugate image of the indicated principal point of the adjacent photograph within the same line of flight.

Exposure of the film shall be in accordance with the manufacturer's recommendations. The negatives shall be clear and sharp in detail, free from light streaks and static marks, 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.

All film shall be exposed using the fastest shutter speed possible when the aperture is set at its optimum value in consideration of the optical resolution and image motion.

e. Camera and Associated Equipment:

This section refers to aerial cameras of nominal focal length of 152 mm with format dimensions of 230 x 230 mm only.

A metric quality survey camera shall be used, fitted with a lens that is designed to give an absolute radial distortion not exceeding 15 micrometers within 100 mm of the principal point. The film shall be held in the intended image plane during exposure to maintain sharp focus and hold image distortion to less than that, which will produce 20 microns of y-parallax after relative orientation anywhere in the model.

The lens shall be corrected for the spectral range of the film used.

Each camera lens unit shall have been calibrated, tested and certified by the camera manufacturer or by a calibration center, recognized internationally or approved by the camera manufacturer. The certificate shall show that the camera has been calibrated within three years of completion of the photography. However, when there is any reason to believe the dimensional relationship of the lens, fiducial marks, and film plane have been disturbed by partial disassembly or unusual mechanical shock, the camera must be submitted for recalibration at the contractors expense.

The camera will be equipped with Forward Motion Compensation (FMC) and it is recommended the camera have a gyro-stabilized mount system.

f. Aerial Film and Image Quality:

Natural color (Phase I Option 1 is selected) or black and white (Phase I Option 2 is selected) aerial film shall be fine grain, high speed photographic emulsion on a dimensionally stable polyester base. Only one type of film shall be used for the entire project. Outdated film shall not be used.

The imagery on the aerial film shall be clear and sharp and evenly exposed across the format. The exposed film shall be free from clouds, cloud shadows, smoke, haze, snow, seasonal flooding, shadows, crimps, scratches and any other blemishes, which interfere with the intended purpose of the photography. Allowances will be made for unavoidable shadows, permanent snow fields, or reflectance from water bodies. If the imagery is obviously degraded, the original film shall be rejected for poor image quality and reflowed.

The exposed/processed aerial film will be the property of the County and may be maintained by the contractor in accordance with the contract. The contractor, as an aid for the quality control inspection should also maintain all flight maps used for the acquisition.

Each processed roll or partial roll of aerial film shall be kept in roll form, on the spool, and in the metal or plastic container supplied by the film manufacturer. Rejected exposures shall not be removed from any roll.

g. Scale of Aerial Photographic Negatives:

The altitude above average ground elevation for aerial photography shall be such that the negatives will be at the scale specified in the following schedule:

Map Scale	Negative Scale
1"=200'	1"=833'
1"=100'	1"=833'

h. Photo Index:

All Aerial Photography and the Photo Index shall be in digital format. Indexing of Aerial Images should be based APPROXIMATELY on the PLSS sections and edge matched with no overlap buffer. Butt-matching may be used.

3.3.2.2. HORIZONTAL AND VERTICAL GROUND CONTROL

a. Horizontal ground control will be based on 1st order stations published by the Land Survey Program of DNR and/or the National Geodetic Survey NOAA.

b. All horizontal ground control will be based on NAD83 Missouri Central 2402 State Plane Coordinates, U.S. Survey Feet.

c. Vertical control will be based on NAVD 1988 elevations.

d. A minimum of three existing 1st order ground control stations in the project area shall be targeted.

e. The County shall be given the opportunity to establish and target additional permanent horizontal ground control stations before aerial photography is taken. These ground control monuments are to serve as a basis for accuracy checking and for georeferencing cadastral survey and infrastructure overlays.

f. Placement of Ground Control Point Markers will be determined based on the Vendor Response/Pricing Page. The County may elect to have the Contractor provide all Ground Control Point Markers. The County may elect to provide all Ground Control Point Markers itself.

3.3.2.3. ANALYTICAL TRIANGULATION:

(IMU “INERTIAL MEASURING UNIT” SHALL NOT BE USED)

Densification and extension of field control by aero-triangulation will be permitted only by fully analytic aero-triangulation methods. The contractor shall, when requested and upon completion of all aerial triangulation, submit a report showing:

- a. All misclosures at ground control points.
- b. Computed coordinates of all control points, pass points, checkpoints and drop points if any.

3.3.2.4. SCANNING

The device used for scanning shall be a precision instrument designed for photogrammetric applications having an aperture capable of producing a scanning resolution of at least 7 microns; a geometric accuracy of 5 microns RMSE; and a capability of resolving either 24-bit (3-band x 8-bit) true color (if Phase I Option 1 is selected) or 256 levels of gray (if Phase I Option 2 is selected).

- a. Original aerial negatives will be scanned. Recommended final output pixel resolution for each scale shall be as follows:

1”=200’ scale orthophotos	1 foot
1”=100’ scale orthophotos	0.5 foot

Initial scanning resolution for each scale shall be finer (smaller) than the final output pixel resolution for that scale orthophoto.

3.3.2.5. DEM DEVELOPMENT

(MULTIPLE RETURN LiDAR TECHNOLOGY MAY BE USED AT VENDOR’S DISCRETION)

- a. The DEM captured for this project shall be used to support orthophoto production.
- b. The vertical accuracy of the standard DEM shall be sufficient to obtain the required horizontal accuracy.

The DEM shall consist of a combination of the following points spaced at regular intervals along a grid: points of significant high or low elevation; and break lines at significant terrain variations. It is expected that minimum grid spacing and standard break line features be consistent throughout the project.

3.3.2.6. RECTIFICATION

If Phase I Option 1 is selected, all digital imagery must be processed to insure proper brightness, color balance and color match, as well as proper density matching. No individual pixel location shall have 3-band digital number (DN) pixel values of 0,0,0 in the red (R), green (G), and blue (B) bands. Images with RGB pixel values of 0,0,0 will be rejected.

If Phase I Option 2 is selected, all digital imagery must be processed to insure proper image brightness and shall be represented by 256 levels of gray ranging from 0 (black) to 255 (white). All intermediate values shall represent shades of gray varying uniformly from black to white.

There shall be no areas of an orthophoto where the process was incomplete due to image gaps or lack of data.

All digital orthophotos shall be radiometrically adjusted as necessary so that adjacent digital orthophotos can be displayed simultaneously without an obvious visual edge seam between them. Localized adjustment of the brightness values shall be performed to minimize tonal differences between the join areas. For this adjustment, the orthophoto judged by visual inspection to have the better contrast shall be used as the reference orthophoto. Localized brightness values of the adjacent orthophoto shall be adjusted to that of the reference orthophoto. When possible and feasible, the area adjusted should be bounded by a tonal break ground feature such as a road, field line, shadow line, etc. The radiometric adjustment should not compromise the accuracy, clarity, or the resolution of the orthophoto.

Prior to undertaking full digital orthophoto production, the Contractor shall furnish the County with sample digital orthophoto at each production scale to evaluate and accept as examples of overall quality. The County will select one digital orthophoto at each scale that will become the standard to which all subsequent digital orthophotos will be compared for acceptance or rejection relative to quality.

- a. The rectification process shall involve solution of the appropriate photogrammetric equations for each pixel in the output image. It will not be permissible to solve photogrammetric equations at anchor points only and then warp the content of the original image between the anchor points.
- b. DEM data used to correct displacement shall be sufficiently accurate to ensure the image meets map accuracy standards for the intended scale. The Contractor shall use elevation data with appropriate ground sample distances and area coverage to reliably describe the terrain and obtain the required mapping accuracy.

3.3.2.7. MAP ACCURACY

- a. The accuracy of all base maps shall be measured and reported in accordance with the National Standard For Spatial Data Accuracy FGDC-STD-007.3-1998.
- b. All base maps shall meet the accuracy requirements for Class 2 or better of the Missouri Mapping Standards 10 CSR 6.020 or the American Society for Photogrammetry and Remote Sensing (ASPRS) Accuracy Standards for Large Scale Maps.

Horizontal Accuracy (95% confidence level)

Map Scale	Class 1	Class 2
1"=100'	2.4 ft.	4.9 ft.
1"=200'	4.9 ft.	9.8 ft.
1"=400'	9.8 ft.	19.6 ft.
1"=1000'	24.5 ft.	48.9 ft.

Note: Accuracy = 2.447* RMSE for large samples.

3.3.2.8. DIGITAL DATA

If Phase I Option 1 is selected, the digital raster files of orthophoto sheets will be delivered on DVD in a TIFF-24-bit format or if Phase I Option 2 is selected, TIFF-8-bit format suitable for use in a GIS or CAD environment. The data will include the TIFF world files for georeferencing the raster data. MrSID images will not be suitable for delivery. The DVD will be accompanied by a report and/or label that specifies the name of each file, the size of each file, the map number of each map on the DVD, and the name of the Contractor. Map index shall be provided in ESRI shapefile format with associated labels that specifies the name of each file, the size of each file, the map number of each map on the DVD, and the name of the Contractor.

Digital Aerial Photography files shall be tiled to match the sections delineated on the County Contract Map. All digital files shall be edgematched with no gaps or overlap.

An optional MrSID photomosaic digital file may be requested. If requested, this file should be seamless and the MrSID photomosaic be produced in such a manner as to facilitate its distribution on one or more standard CDs. An associated SDW file should also be provided for georeferencing the MrSID raster data. Prior to undertaking final MrSID photomosaic production, the Contractor shall furnish the County with a sample MrSID photomosaic at the selected compression ratio to evaluate and accept as an example of the overall quality and usability at the selected compression level.

3.3.2.9. NON-FILM BASED AERIAL PHOTOGRAPHY

It is not the intent of this proposal to exclude non-film based aerial photography for the flight. The vendor shall provide sufficient information and standards to insure that the results of the final product are based on the resolution and clarity as shown in Section 3.3.2.4 scale factors and pixel size.

3.3.2.10. DELIVERABLE ITEMS shall include the following:

- a. Two complete sets of all Digital Aerial Files pertaining to the project on DVD (Images should be delivered in TIFF format)
- b. Photo index in ESRI Shapefile format.
- c. Control and aero triangulation report.
- d. Ground Control Information - Index maps in digital format (Shapefile) of the recovered/established control points.

e. DEM/DTM files developed to produce the orthophotography.

f. All digital files must be delivered on DVD-ROMs.

3.3.2.11. DOCUMENTS INCLUDED WITH THIS PROPOSAL PACKET

a. Mapping Standards per this specification.

b. County contract maps.

c. Geographic Reference System Diagram.

d. Technical Specifications per this specification.

3.3.2.12. QUALITY CONTROL

a. The County may use additional monuments and GPS points, above and beyond those selected by the vendor, to Quality Control work by the Vendor.

b. All vendor deliverables must pass a Quality Control program by the County before they will be accepted as complete.

3.3.3. TECHNICAL SPECIFICATIONS FOR PHASE II: DIGITAL TOPOGRAPHIC AND PLANIMETRIC MAPPING

3.3.3.1. WORK STATEMENT

The purpose of the work under this **Digital Topographic / Planimetric** section is to contract for the procurement of digital topographic and planimetric mapping for the areas shown on PHASE II Topographic / Planimetric Contract Map. The contractor shall furnish the materials, supervision, labor, equipment, and transportation, and shall execute and complete all of the work required by the contract in conformance with these specifications.

The City of Columbia is participating with the Boone County to update and expand topographic/planimetric maps of the approximate 171 square mile area surrounding the Columbia Metropolitan Planning Boundary and the approximately 12 square mile area outlining the Columbia Regional Airport as shown on PHASE II Topographic / Planimetric Contract Map. It is the City's goal to use imagery obtained from the Boone County aerial photography project, described in PHASE I, to generate the topographic/planimetric data in these areas.

3.3.3.2. AERIAL PHOTOGRAPHY

Aerial photography shall meet all specifications of Boone County as presented in PHASE I of this request for proposals.

3.3.3.3. PROJECT PHASING

The contractor will be notified of whether to proceed with the completion of Phase II (topographic/planimetric mapping) by July 1, 2007.

3.3.3.4. GROUND CONTROL

The City of Columbia shall provide all horizontal and vertical ground control required for the proposed topographic/planimetric mapping project. All horizontal ground control will be based on NAD83 Missouri Central 2402 State Plane Coordinates, U.S. Survey Feet. After determination of the required flight lines and altitude, the photogrammetric contractor will have the City target all necessary control prior to the photo mission, provided 2-weeks advance notice is provided to the City Land Surveyor.

3.3.3.5. ANALYTICAL TRIANGULATION

Fully Analytical Aerial Triangulation shall be utilized to establish precise relationships between the individual aerial photo systems and the defined datum and projection. The results of this process shall be used to densify existing ground control set, reducing the amount of control needed to be established by the City, and providing a method of checking the horizontal and vertical control provided.

3.3.3.6. TOPOGRAPHIC MAPPING

Cartographically complete and topologically correct 2-foot contours and spot elevations to Class 2 - ASPRS Accuracies for Large Scale Maps are to be developed by the photogrammetric contractor. All contours are to be mapped regardless of topography. In densely wooded areas where heavy brush or tree cover obscures the ground, the contours should be shown as dashed lines, developed from the stereoscopic model, while making full use of the spot elevations measured photogrammetrically in places where the ground is visible. Index contours shall be labeled on a 10-foot interval.

Spot elevations should be shown in their proper positions to show lake and pond water levels; on hilltops and ground depressions; at the sags, crests, and intersections of well traveled roads; on bridge decks and dams; and similar locations. Spot elevations should also be used to better define the topographic surface when the terrain is flat and contours are widely spaced.

3.3.3.7. PLANIMETRIC MAPPING

(MULTIPLE RETURN LiDAR TECHNOLOGY MAY BE USED AT VENDOR'S DISCRETION)

Position of Planimetric features shall comply with Class 2 - ASPRS Accuracy Standards for Large Scale Maps as described in 3.3.2.7. Annotation and titling will be optimized for 1"=100' topographic maps. Planimetric mapping should be in accordance with standard topographic mapping procedures and should show general planimetric and cultural features including, but not limited to:

- a. Edge of Paved & Unpaved Roads, Railroads and Runways
- b. Retaining Walls and Bridges
- c. Hydrography, including intermittent streams defined by contours
- d. Towers, Masts, and other large structures.
- e. Building footprints over 20' on one side
- f. Edge of wooded areas
- g. Parking lots classified by type (paved or gravel)
- h. Property fence lines not parallel to highways or streets
- i. Street and stream names
- j. Sidewalks will **NOT** be delineated.
- k. Driveways classified by type (paved or gravel).

The City of Columbia has planimetrics of the requested area from a flight in 2002. It is left to the discretion of the Offeror to base the cost on updating the City's current information or recreating the planimetrics completely from the new images. Each Offeror will be provided with a sample of several of the panels to help with this determination.

3.3.3.8. DELIVERABLES

- a. DEM/DTM files developed to produce the topographic maps.
- b. AutoCAD 2004 files of the Topographic/Planimetric maps tiled into individual DWG files. Paneling of drawing files should be based on the grid system that will be provided and edge matched with no overlap buffer. Butt-matching may be used. Contours are to be produced in 3D with proper elevations assigned to each polyline.
- c. Seamless Topographic/Planimetric map of the entire City proposed area shown on PHASE II Topographic/Planimetric Contract Map, in an ESRI Personal Geodatabase. Feature Classes of the planimetric features identified in Section 3.3.3.7 should be provided for the City proposed area shown on PHASE II Topographic/Planimetric Contract Map. Contours in an ESRI Personal Geodatabase shall be assigned proper elevation attribute data.
- d. All digital files will be delivered on DVD-ROMs.

3.4. INSURANCE REQUIREMENTS

- 3.4.1. The Contractor shall not commence work under this contract until they have obtained all insurance required under this paragraph and such insurance has been approved by the County, nor shall the Contractor allow any subcontractor to commence work on their subcontract until all similar insurance required of subcontractor has been so obtained and approved. All policies shall be in amounts, form and companies satisfactory to the County which must carry an A-6 or better rating as listed in the A.M. Best or equivalent rating guide. Insurance limits indicated below may be lowered at the discretion of the County.
- 3.4.2. **Compensation Insurance** - The Contractor shall take out and maintain during the life of this contract, **Employee's Liability and Worker's Compensation Insurance** for all of their employees employed at the site of work, and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor. Worker's Compensation coverage shall meet

Missouri statutory limits. Employers' Liability limits shall be \$500,000.00 each employee, \$500,000.00 each accident, and \$500,000.00 policy limit. In case any class of employees engaged in hazardous work under this Contract at the site of the work is not protected under the Worker's Compensation Statute, the Contractor shall provide and shall cause each subcontractor to provide Employers' Liability Insurance for the protection of their employees not otherwise protected.

- 3.4.3. **Comprehensive General Liability Insurance** - The Contractor shall take out and maintain during the life of this contract, such comprehensive general liability insurance as shall protect them and any subcontractor performing work covered by this contract, from claims for damages for personal injury including accidental death, as well as from claims for property damages, which may arise from operations under this contract, whether such operations be by themselves or for any subcontractor or by anyone directly or indirectly employed by them. The amounts of insurance shall be not less than \$2,000,000.00 combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death. If the Contract involves any underground/digging operations, the general liability certificate shall include X, C, and U (Explosion, Collapse, and Underground) coverage. If providing Comprehensive General Liability Insurance, then the Proof of Coverage of Insurance shall also be included.
- 3.4.4. **Proof of Carriage of Insurance** - The Contractor shall furnish the County and City with Certificate(s) of Insurance which name the County of Boone and City of Columbia as additional insured in an amount as required in this contract, contain a description of the project or work to be performed, and requiring a thirty (30) day mandatory cancellation notice. In addition, such insurance shall be on occurrence basis and shall remain in effect until such time as the County has made final acceptance of the facility contracted.
- 3.4.5. **INDEMNITY AGREEMENT:** To the fullest extent permitted by law, Contractor shall indemnify, hold harmless and defend the County and City, their directors, officers, agents, and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees) arising by reason of any act or failure to act, negligent or otherwise, of Contractor, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with contractor or a subcontract for part of the services), of anyone directly or indirectly employed by contractor or by any subcontractor, or of anyone for whose acts the contractor or its subcontractor may be liable, in connection with providing these services. This provision does not, however, require contractor to indemnify, hold harmless, or defend the County of Boone and City of Columbia from its own negligence.

3.5. CONTRACT TERM AND CONDITIONS

- 3.5.1. The successful Offeror is prohibited from assigning, transferring, conveying, subletting, or otherwise disposing of this agreement or its rights, title or interest therein, or its power to execute such agreement to any other person, company or corporation without the prior consent and approval in writing by the County.
- 3.5.2. Offeror must clearly state in writing any restrictions or deviations from these specifications. In the absence of such statement, the County will assume that all items/services offered are in strict compliance with the technical and financial requirements, contract terms and conditions as described in these specifications. The proposal of the Contractor will be included as part of the final contract.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

PROPOSAL SUBMISSION INFORMATION

4. Response to Proposal

4.1. Submission of Proposals:

- 4.1.1. When submitting a proposal, the Offeror should include the **original and seven (7) additional copies**.
- a. The Offeror shall submit the proposal to:
- Boone County Purchasing Department
Attn: Melinda Bobbitt, CPPB, Director of Purchasing
601 E. Walnut Street, Room 208
Columbia, MO 65201
- b. The proposals must be delivered no later than **10:30 a.m. on October 17, 2006**. Proposals may not be accepted after this date and time.
- 4.1.2. To facilitate the evaluation process, the Offeror is encouraged to organize their proposal into distinctive sections that correspond with the individual evaluation categories described herein.
- a. Each distinctive section should be titled with each individual evaluation category and all material related to that category should be included therein.
- b. The signed response page from the original RFP and all signed amendments should be placed at the beginning of the proposal.
- c. The Proposal must, at a minimum, address all mandatory and desired services, equipment, materials, etc. Responses will fully describe how the service will be performed and what hardware/software (if any) is required at the County to access the service.
- 4.1.3. The Offeror is cautioned that it is the Offeror's sole responsibility to submit information related to the evaluation categories, and that the County is under no obligation to solicit such information if it is not included with the proposal. The Offeror's failure to submit such information may cause an adverse impact on the evaluation of the proposal. Any Offeror whose responses deviate from the outlined specifications may automatically be disqualified.
- 4.1.4. Offeror's Contacts: Offerors and their agents (including subcontractors, employees, consultants, or anyone else acting on their behalf) must direct all of their questions or comments regarding the RFP, the evaluation, etc. to the buyer of record indicated on the first page of this RFP. Offerors and their agents may not contact any County employee other than the buyer of record regarding any of these matters during the solicitation and evaluation process. Inappropriate contacts are grounds for suspension and/or exclusion from specific procurements. Offerors and their agents who have questions regarding this matter should contact the buyer of record.

4.2. Competitive Negotiation of Proposals: The Offeror is advised that under the provisions of this Request for Proposal, the County reserves the right to conduct negotiations of the proposals received or to award a contract without negotiations. If such negotiations are conducted, the following conditions shall apply:

- 4.2.1. Negotiations may be conducted in person, in writing, or by telephone.
- 4.2.2. Negotiations will only be conducted with potentially acceptable proposals. The County reserves the right to limit negotiations to those proposals, which received the highest rankings during the initial evaluation phase.

- 4.2.3. Terms, conditions, prices, methodology, or other features of the Offeror's proposal may be subject to negotiation and subsequent revision. As part of the negotiations, the Offeror may be required to submit supporting financial, pricing and other data in order to allow a detailed evaluation of the feasibility, reasonableness, and acceptability of the proposal.
- 4.2.4. The mandatory requirements of the Request for Proposal shall not be negotiable and shall remain unchanged unless the County determines that a change in such requirements is in the best interest of the entities.

4.3. Evaluation and Award Process:

- 4.3.1. After determining a responsible Offeror and a responsive proposal through the determination that the proposal satisfies the mandatory requirements stated in the Request for Proposal, the evaluator(s) shall use both objective analysis and subjective judgment in conducting a comparative assessment of the proposal in accordance with the evaluation criteria stated below:
 - a. **Method of Performance**
 - b. **Experience/Expertise**
 - c. **Cost**
- 4.3.2. After an initial evaluation process, a question and answer interview may be conducted with the Offeror, if deemed necessary by the County. In addition, the Offeror may be asked to make an oral presentation of their proposal to the evaluation team at a designated Boone County location. Attendance cost shall be at the Offeror's expense. All arrangements and scheduling will be coordinated by the County.

4.4. Evaluation:

- 4.4.1. Experience and reliability of the Offeror's organization are considered subjectively in the evaluation process. Therefore, the Offeror is advised to submit any information, which documents successful and reliable experience in past performances, especially those performances related to the requirements of this RFP.
- 4.4.2. **Qualifications Statement/References:** The Offeror shall provide the following information related to previous and current services/contracts performed by the Offeror's organization and any proposed subcontractors which are similar to the requirements of this RFP
 - a. **Offeror Qualifications:** Attach supporting documentation for the following:
 - i. Offeror Identification and Information
 - ii. Office Location
 - iii. When Organized / When Incorporated
 - iv. Offeror's Qualifications and Experience
 - v. Staff Qualifications
 - vi. Subcontracts/Subcontractors
 - b. **References:** Name other entities (government agencies/municipalities preferred) for which you have provided similar services in the last five (5) years and provide a current contact name, email address and phone number for each account. Include a minimum of four references.
- 4.4.3. The Offeror should submit a copy of all licenses, certifications, accreditation, and/or permits, which may be required by state, federal, and/or local law, statute, or regulation in the course of conduct of the Offeror's business. If not submitted with the proposal, the County reserves the right to request and obtain a copy of any license or certification required to perform the defined services prior to contract award.
- 4.4.4. Proposals will be subjectively evaluated based on the Offeror's distinctive plan for performing the requirements of the RFP. Therefore, the Offeror should present a written narrative, which demonstrates the method or manner in which the Offeror proposes to satisfy these requirements. The language of the narrative should be straightforward and limited to facts, solutions to problems, and plans of action.
- 4.4.5. Where the words "shall" or "must" are used, they signify a required minimum function of system capacity that will heavily impact the Offeror's final response rating.

- 4.4.6. Where the words “should”, “may” or “desired” are used, they signify that the feature or capacity is desirable but not mandatory; therefore, the specifications in question will possess minimal impact on the Offeror’s final response rating.
- 4.4.7. The method by which the proposed method of performance is written will be left to the discretion of the Offeror. However, the Offeror should address each specific paragraph and subparagraph of the Specifications by paragraph and page number as an item for discussion. Immediately below these numbers, write descriptions of how, when, by whom, with what, to what degree, why, where, etc, the requirements will be satisfied.

4.5. Rejection / Withdrawal of Proposals Response:

Rejection of Proposals: The right is reserved by the County at its discretion to reject any or all proposals or parts thereof. The County reserves the right to waive defects or informalities, to negotiate with Offerors and to accept the proposal deemed to be in the best interest of the County.

Withdrawal of Proposals: Proposals may be withdrawn on written request from the Offeror at the address shown in the solicitation prior to the time of acceptance.

Negligence on the part of the Offeror in preparing the proposal confers no right of withdrawal after the time fixed for the acceptance of the proposals.

4.6. Validity of Proposal Response:

Offerors agree that proposals will remain firm for a period of ninety (90) calendar days after the date specified for the return of proposals.



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

RESPONSE / PRICING PAGE

In compliance with this Request for Proposal and subject to all the conditions thereof, the Offeror agrees to furnish the services/equipment/supplies requested and proposed and certifies he/she has read, understands, and agrees to all terms, conditions, and requirements of this proposal and is authorized to contract on behalf of the firm named below. (Note: This form must be signed. All signatures must be original and not photocopies).

Company Name: _____

Address: _____

Telephone: _____ Fax: _____

Federal Tax ID (or Social Security #): _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

E-Mail Address: _____

RESPOND TO ALL ITEMS LISTED ON VENDOR RESPONSE SHEET
THE COUNTY WILL ONLY AWARD ONE OPTION FOR PHASE I
THE CITY OF COLUMBIA WILL ONLY AWARD ONE OPTION FOR PHASE II

5.1. Base Bid:

Digital Orthophotography – Topographics / Planimetrics

Total square miles = 691

5.1.1. Phase I – County 1”=100’ & 1”=200’ Orthophotography

A. OPTION 1

- 1. Cost for 286 sqmi - 1”=100’ **Color** Orthophotography \$ _____
- 2. Cost for 405 sqmi - 1”=200’ **Color** Orthophotography \$ _____
- Total \$ _____

B. OPTION 2

- 1. Cost for 286 sqmi - 1”=100’ **B&W** Orthophotography \$ _____
- 2. Cost for 405 sqmi - 1”=200’ **B&W** Orthophotography \$ _____
- Total \$ _____

5.1.2. Phase II – City Topographic / Planimetric

A. OPTION 1

- 1. Cost for 11 sqmi – New Planimetrics and New 2’ Contours \$ _____
- 2. Cost for 26 sqmi – Update Planimetrics and New 2’ Contours \$ _____
- Total \$ _____

B. OPTION 2

- 1. Cost for 11 sqmi – New Planimetrics and New 2’ Contours \$ _____
- 2. Cost for 26 sqmi – Update Planimetrics and New 2’ Contours \$ _____
- 3. Cost for 61 sqmi – Update Planimetrics \$ _____
- Total \$ _____

5.2. Alternate Bids:

5.2.1. Ground Control

Option 1 – (Excludes 183 sqmi area surrounding the City of Columbia)

Cost for 508 sqmi Ground Control \$_____

5.2.2. Optional digital file format

Option 1 – MrSID photomosaic \$_____

5.3. Additional Charges (if any) – List any additional charges below – Attach supporting documentation, if necessary.

_____ \$_____

_____ \$_____

_____ \$_____

_____ \$_____

_____ \$_____

Total \$_____

5.4. Delivery Dates

a. Estimated date of Aerial flight: _____

b. Estimated delivery date for PHASE I (County Orthophotography): _____

c. Estimated days to complete PHASE II (City Topographics / Planimetrics): _____

EXHIBIT C

(Please complete and return with Response Page)

Certification Regarding
Debarment, Suspension, Ineligibility and Voluntary Exclusion
Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 29 CFR Part 98 Section 98.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988, Federal Register (pages 19160-19211).

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS FOR CERTIFICATION)

- (1) The prospective recipient of Federal assistance funds certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective recipient of Federal assistance funds is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Name and Title of Authorized Representative

Signature

Date



MID-MISSOURI PUBLIC PURCHASING COOPERATIVE

“NO BID RESPONSE FORM”

**NOTE: COMPLETE AND RETURN THIS FORM ONLY IF YOU DO NOT WANT TO
SUBMIT A PROPOSAL RESPONSE**

If you do not wish to respond to this RFP request, but would like to remain on the Boone County vendor list **for this service/commodity**, please remove form and return to the Purchasing Department by mail or fax.

If you would like to FAX this “No Bid” Response Form to our office, the FAX number is (573) 886-4390.

**Bid: MM49 – DIGITAL ORTHOPHOTOGRAPHY AND PLANIMETRIC AND
TOPOGRAPHIC MAPPING**

Business Name: _____

Address: _____

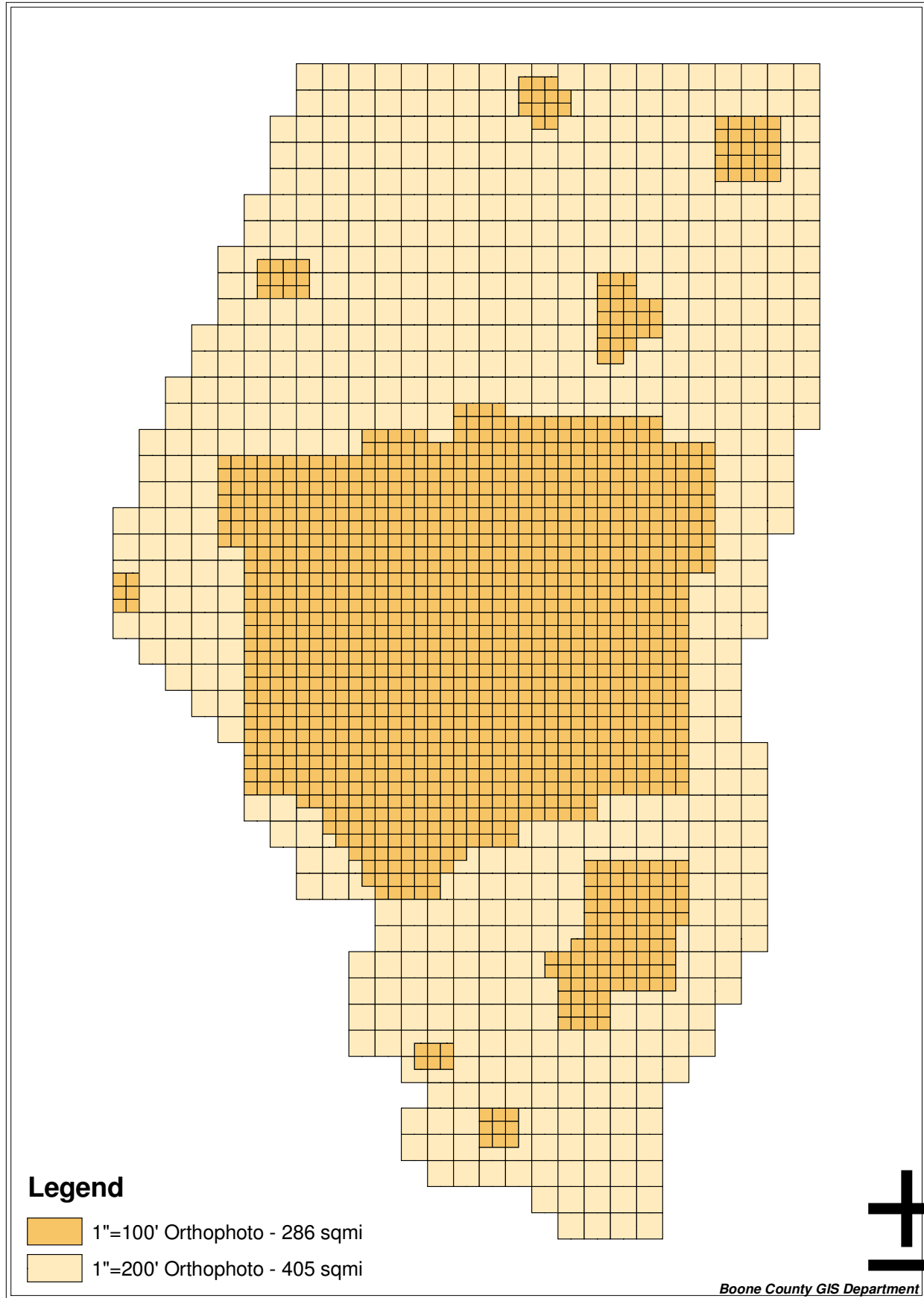
Telephone: _____

Contact: _____

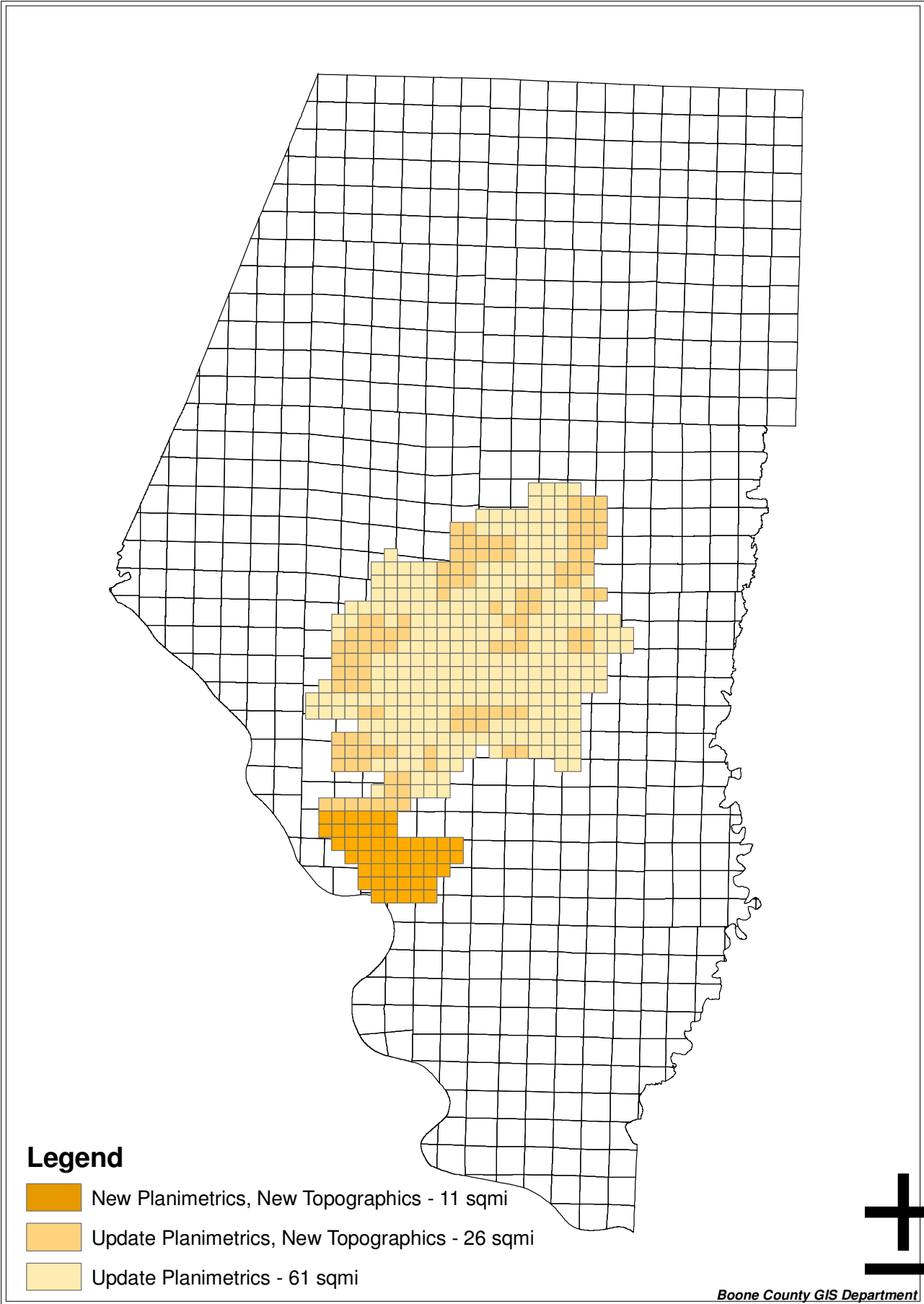
Date: _____

Reason(s) for not submitting proposal response:

PHASE I – Orthophotography Contract Map



PHASE II – Topographic / Planimetric Contract Map



GEOGRAPHIC REFERENCE SYSTEM DIAGRAM
(The monuments shown are Missouri Department of
Natural Resources first order monuments)

