

Request for Proposal
For Aerial Mapping Services
Ogle County, Illinois

September 4, 2012

Ogle County GIS Partnership

Final Draft Specifications for Digital Orthoimagery

September 4, 2012

Project Description

Ogle County GIS Partnership plans to obtain digital orthophotography.

The provision of these specifications is not a guarantee that a project will take place.

All data, data deliverables and documentation generated by this project will become the property of Ogle County GIS Partnership and will be made available to the public by Ogle County GIS Partnership according to their policies. The contractor shall not have a copyright, exclusive license or right to distribute or sell any of the deliverables.

If the project is not delivered in a timely fashion the contractor shall forfeit 1/5 of all retainage being held by the Partnership for every month the deliverables are late. Subsequently, 1 day shall be considered the equivalent 1 month and 1 month and 1 day shall be considered the equivalent of 2 months, etc. The Partnership may retain up to 10% payment for the work completed as project retainage. This retainage shall be released with the project final payment.

Project Timetable

If approved, the flight will take place in the Spring of 2013 with final delivery of digital orthophoto images and related deliverable items by Sept 1, 2013.

Selection Schedule. The selection schedule is anticipated to be as follows:

September 4	RFP released
September 21	Intent to Respond Form and Questions Due
September 26	Questions and Responses Circulated
October 5	Proposal Submission Deadline
Nov 1 – 2	Interviews
Nov 5 – Dec 1	Vendor Negotiation and Selection
December 14	Contract Signing

Funds

Project funds for the digital orthophotography are authorized by the Ogle County GIS Partnership. Funds will be available to pay for the work authorized by the Partnership, based on a selected proposal that meets the requirements of this RFP. While not committing funds in advance, the Partnership requests Respondents to provide a firm quote for future updates at Partnership option to the data provided as a result of this process.

Geographic Area

The project area will include all of Ogle County, plus a buffer of one mile beyond the county boundary and service area. Ogle County boundary map attached (pages 20 & 25)

General

All ratios and dimensions assume U.S. survey feet. No scale ratios or dimensions in these specifications are metric. **All digital products will be delivered in the Illinois State Plane, Western Zone projection using the NAD83 (1997) horizontal datum, in feet. All vertical measurements will be referenced to the NAVD 1988 datum, in feet, 1997 adjustment (HARN).** The County will make the existing LiDAR Data from 2009 available for inspection. The 2009 LiDAR is the property of Ogle County and is to be used for inspection purposes only. Data may not be reproduced, transmitted or duplicated.

Pixel size: 6 inches

Intended mapping scale: 1" = 100' (1:1200)

Forward lap: ground distance equivalent to 60% forward lap in a 1:7920 negative scale

Side lap: ground distance equivalent to 30% side lap in a 1:7920 negative scale

Flight characteristics must be consistent with the production of FEMA compliant two foot contours.

Ground Conditions

The imagery shall be obtained in the spring of 2013, when deciduous trees are bare and when the sun angle is at least 35 degrees. The imagery may not be obtained when the ground is obscured by clouds, snow, haze, fog or dust, other aircraft, or when cloud shadows appear on more than 5% (five percent) of the area in any one image. The imagery may not be obtained under conditions of stream overbank flooding.

Camera

This project requires the use of a digital camera(s) capable of capturing natural color (R G B bands). A panchromatic sensor is not required if black and white imagery can be created by combining the RGB bands.

Conventional analog film cameras will not be used on this project. Responses must identify the manufacturer and model number of the sensor(s) to be used and provide the spectral band information for the panchromatic (if any), and color image deliverables.

Radial Displacement (Buildings)

Due to the radial properties of the aerial camera, buildings will “lean” outward from the center of each exposure. The extent to which a building leans is a function of the height of the building and the distance from the nadir of the photo. This can be very detrimental to ortho imagery since the leaning buildings will obscure otherwise visible features. Potential problem areas that will require a spot photo(s) are: (general locational points)

Byron Nuclear Facility (2536860.09118, 1970946.19358)

Stillman Valley Elevators (2563887.45784, 198261.61078) – Entire County Only

Davis Junction Elevators (2587985.32111, 1981598.20081)

Creston Elevators (2623462.54562, 1919289.81045 & 2623782.19714, 1919361.43049)

Chana Elevators (255322.66868, 1936248.3154) – Entire County Only

Polo Elevators North (2452709.89397, 1943694.84055)

Polo Elevators South (2456377.2387, 1923266.01509)

There are several ways to correct this anomaly. Buildings can be modeled by capturing breaklines at all elevation levels, and using this “DTM” data in the rectification or the orthos. This is known as true ortho rectification. This is a very expensive and time consuming task and is typically cost effective only in downtown areas with extremely tall buildings. A second option is to capture single spot photos directly above small areas of tall buildings. These “spot shots” are single-photo rectified and “spliced” into the standard photo set. A third option is to select and rectify the frame of photography that is most centered over the building(s) of interest. The approach to be taken will be agreed upon prior to award of contract.

Radial Displacement (Bridges and Overpasses)

Displacement of bridges and overpasses must be corrected to mitigate the lean of these features at the intended usage scale of 1:1200

Positional Accuracy

The orthophoto images must meet National Map Accuracy Standards for positional accuracy at the intended usage scale.

It is understood that NMAS states the following for horizontal accuracy:

“For maps on publication scales larger than 1:20,000, not more than 10 percent of the points tested shall be in error by more than 1/30 inch, measured on the publication scale; for maps on publication scales of 1:20,000 or smaller, 1/50 inch. These limits of accuracy shall apply in all cases of position of well-defined points only.”

Map Scale Horizontal Accuracy

1”=100’ +/- 3.3 ft

It is also understood that NMAS states the following for vertical accuracy:

“Vertical accuracy, as applied to contour maps on all publication scales, shall be such that not more than 10 percent of the elevations tested shall be in error more than one-half the contour interval. In checking elevations taken from the map, the apparent vertical error may be decreased by assuming a horizontal displacement within the permissible horizontal error for a map of that scale”

Contour Scale Vertical Accuracy

2' Contour +/- 1 ft.

Image Clarity

The aerial photography will be taken in accordance with ASPRS Standards for Aerial Photography whereby the image acquisition shall not be secured when the ground is obscured by haze, snow, smoke, dust, flood waters, or environmental factors that may obscure ground detail. There also should not be any digital artifacts that adversely affect the proper tone value of the pixels, produced as a result of the image post-process.

Brightness/Contrast

In an effort to determine the optimum image quality parameters at the onset of the project, the selected vendor will submit sample images of varying contrast and brightness.

A review of the contrast and brightness of the sample imagery will be conducted during the prototype review meeting.

Shadows

The delivered images should allow identification of at least some, and preferably all, detail in shadow areas.

Mosaicking

Seam lines shall be placed in areas of consistent tonal balance and between buildings or bridges. A dynamic range adjustment shall be completed across the entire block of images to provide a tonally balanced product. The mosaicking parameters shall be carried from block to block to ensure the entire project area has consistent tonal qualities.

Ground Control

The contractor will employ airborne GPS.

The Ogle County GIS Partnership will provide the ground control survey. The successful vendor will determine the number of ground control points needed to meet accuracy standards and approximate location for each option and will include that information in the proposal. Control points necessary in addition to existing ground control points will be denoted.

All ground surveying work performed for this project will be done by a Professional Land Surveyor licensed by the State of Illinois using survey grade GPS equipment. No permanent monuments will be set by this project. Coordinates of control points will be reported in Illinois State Plane, Western Zone, using NAD83 (1997). Elevation values will utilize the NAVD 1988 datum. The unit of measure will be U.S. survey feet. GPS field surveys for this project will originate from second order or better NGS stations.

Survey control shall be appropriate to support the creation of two foot contours meeting National Map Accuracy Standards.

Aerotriangulation

Fully digital analytical aerotriangulation will be used as appropriate to supplement the ground control GPS data and the airborne GPS data acquired during the flight. The final report from this process will be approved by a certified photogrammetrist and is a deliverable for the project. Note that the orthoimagery must integrate seamlessly across the entire project area with no discontinuities along county boundaries.

Existing Digital Elevation Models

The Partnership will supply our LiDAR created from our 2009 aerials only to the successful vendor for use in preparation of the proposal deliverables.

Deliverables

General: all reports shall be delivered in digital form, as Adobe Acrobat (.pdf) documents unless noted otherwise.

1. Flight Lines And Exposure Index

ESRI shape files documenting the actual flight lines flown and their identifying exposure numbers will be delivered.

2. Aerotriangulation Report

This report shall document the process followed, including major steps and particular considerations influencing the process; provide the error and residuals statistics for the airborne GPS; a map showing the boundaries of the models, the locations of airborne GPS points utilized and ground control points (horizontal and vertical) utilized in the aerotriangulation process. The report will identify the software used in the FDAAT process. The acceptance criteria will be stated and the RMSE values for the x,y and z coordinates of each ground GPS block and airborne GPS block will be documented. The report will be signed by a certified photogrammetrist and by the contractor project manager.

3. Camera Specifications and Certification Reports

Camera specifications, including manufacturer, model, and the characteristics of the sensor will be provided. It is recognized that there is no current certification regime offered by the U.S. Geological Survey for digital cameras. Any evidence supporting the fact that the sensor is operating within its stated specifications should be included. The spectral ranges and sensitivity of the sensor will be documented for the red, blue, green and near-infrared data. It is assumed that panchromatic imagery will not be separately sensed and orthorectified but will instead be derived from the red, blue and green spectral bands. If this assumption is not true the contractor will document the differing resolution of each spectral band and the proposed use of panchromatic sharpening for the true color and color infrared deliverables. Exceptions to these assumptions should be documented in the proposal.

4. Sample Images

Within 30 days of the flight the contractor will deliver the raw, unrectified, unprocessed images for review.

5. Imagery

Tiles: Each file shall be provided in TIFF World File format and be non-compressed. The TIFF files shall not include any GeoTIFF header data. The successful Respondent shall include an ArcInfo polygon coverage, which indexes the individual image tiles. Tile format shall follow a modular layout, with each 1"=100' scale image covering 2,500' x 2,500'. Full tiles are required. Visible seams or sutures within a tile or between tiles, which exhibit a noticeable "edge" or "displacement" effect, will be grounds for rejection of that tile.

A single price for each imagery option will be provided for the afore mentioned deliverables.

Imagery Option 1 (Whole County with extended buffer)

Natural color digital orthoimages (24-bit - 256 levels of value for each color band (red, green, and blue) [3 band]
Photo scale of 1"=1200' Map scale of 1"=100'
1 Mile Buffer around the County and service area orthorectified.
See map page 20.
Ground pixel resolution will be 6".

Imagery Option 2 (Whole County with extended buffer)

Natural color digital orthoimages (24-bit - 256 levels of value for each color band (red, green, blue, infra-red) [4 band]
Photo scale of 1"=1200' Map scale of 1"=100'
1 Mile Buffer around the County and service area orthorectified.
See map page 20.
Ground pixel resolution will be 6".

Imagery Option 3 (Select Areas)

Natural color digital orthoimages (24-bit - 256 levels of value for each color band (red, green, and blue)
Photo scale of 1"=1200' Map scale of 1"=100'
Select areas around the County orthorectified.
See map page 23
Ground pixel resolution will be 6".

Imagery Option 4 (Whole County with 1 mile buffer)

Natural color digital orthoimages (24-bit - 256 levels of value for each color band (red, green, and blue) [3 band]
Photo scale of 1"=1200' Map scale of 1"=100'
1 Mile Buffer around the County orthorectified.
See map page 25
Ground pixel resolution will be 6".

Imagery Option 5 (Whole County with 1 mile buffer)

Natural color digital orthoimages (24-bit - 256 levels of value for each color band (red, green, blue, infra-red) [4 band]
Photo scale of 1"=1200' Map scale of 1"=100'
1 Mile Buffer around the County orthorectified.
See map page 25
Ground pixel resolution will be 6".

Any digital ortho imagery that does not meet the final specifications defined within the project contract must be corrected at no additional cost to the Partnership. Further, any and all re-flights must coincide with the same accepted specifications and flight parameters.

Delivery Medium:

Digital images will be delivered on external hard drive(s) which becomes the property of the Partnership.

Compressed County Overview and Township Datasets:

In addition to a complete set of uncompressed tiles, the selected vendor shall also provide a compressed single file overview of the County as a whole and a compressed single file overview of each township (MrSID). The data will be provided to the county on external hard drive or DVD/CD which becomes the property of the Partnership.

6. Imagery Metadata

The contractor shall provide metadata compiled to the current standard endorsed by the Federal Geographic Data Committee (FGDC) for each of the data deliverables. Currently, this is the Content Standard for Digital Geospatial Metadata Version 2 (FGDC-STD-001-1998). A separate report listing each tile and its date and time of acquisition is also required.

FGDC compliant metadata is also a required deliverable.

7. Elevation

The County desires specifications and pricing on LiDAR sufficient enough to generate 2 contour lines dependent on the particular scale of the source images. The County seeks pricing on the following work.

Elevation

LiDAR of the select areas around the county.
Raw Data and BareEarth both in xyz and las formats.
FEMA compliant for 2 ft contours.
See map page 23

The LiDAR data will be provided to the county in xyz and las formats usable in the ESRI ArcGIS software package. LiDAR data will be delivered in both raw data and bare earth formats.

Standard Terms and Conditions

RFP Contract Between Partnership and Respondents

After completing and returning **Intent to Respond Form** Respondents may fax or submit a written request for clarification by Friday Sept 21, 2012 by 4:00 pm to:

Mr. Larry Callant, GIS Coordinator
Ogle County GIS
105 S. 5th Street; Suite 202
Oregon, Illinois 61061
Fax: 815- 732-6273
Email: gis@oglecounty.org

Questions and answers will be distributed to all potential respondents that submit the **Intent to Respond Form** by Sept 26, 2012 by 4:00 pm CDT.

Type of Negotiations:

Negotiations may be undertaken with one or more of those Respondents whose proposals, as to price and other factors, show them to be qualified, responsible and capable of performing the work. The contract that may be entered into will be that most advantageous and capable of performing the work specified herein to the Partnership in terms of price, quality, delivery and other factors considered. The Partnership reserves the right to consider proposals or modifications thereof received thru negotiations at any time before award is made, if such action is in the best interest of the Partnership.

Rejection Of Proposals:

The Partnership reserves the right to reject any and all proposals received as a result of this RFP, or to negotiate separately with any source in a manner necessary to serve the best interests of the Partnership.

Incurring Costs:

The Partnership is not liable for any cost incurred by contractors prior to execution of a contract.

Final Products:

All final products must be submitted to the Partnership and will become the property of the Partnership without restrictions as to use.

The Partnership reserves the right to modify or alter the specific requirements of each of these products once a successful Respondent has been selected and the successful Respondent and Partnership enter into contract negotiations.

Addenda To The RFP:

In the event it becomes necessary to revise any part of this RFP, addenda will be provided via email or fax to those who have submitted a formal **Intent to Respond**.

Response Date:

To be considered, all issued agenda must be included and hardcopy proposals must arrive on or before 4:00 p.m CDT on October 5, 2012 and be delivered to:

Mr. Larry Callant, GIS Coordinator
Ogle County GIS
105 S. 5th Street; Suite 202
Oregon, Illinois 61061

Proposals:

To be considered, Respondents must submit a complete response to this RFP that must follow the format provided in **Required Content Form Respondent Proposal**. In addition, the Respondent must provide 4 copies of the complete proposal. No other distribution of proposals will be allowed by the Respondent. Proposals must be signed by an official authorized to bind the Respondent to its provisions. For this RFP, the proposal must remain valid for at least 90 days.

Acceptance Of Proposal Content:

The contents of the proposal of the successful Respondent will become contractual obligations, if a contract ensues. Failure of the successful Respondent to accept these obligations will result in disqualification of the respondent. Contents of this RFP become contractual obligations and shall govern over any other differing proposal obligations unless specifically denoted otherwise.

Economy Of Preparation:

Proposals should be prepared simply and economically, providing a straightforward, concise description of the Respondent's ability to meet the requirements of the RFP. Emphasis should be on brevity, completeness, and clarity of content. Overly long proposals should be avoided.

Oral Presentation:

Select Respondents who submit a proposal may be required to make an oral presentation of their proposal to the Partnership as appropriate. If necessary, the Partnership will schedule these presentations on Nov 1 and/or Nov 2, 2012.

Prime Respondent Responsibilities:

It is the responsibility of the selected Respondent to provide all products offered in the RFP regardless if they are created by a third party. Further, the Partnership will consider the selected Respondent to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the contract.

Contract Payment Schedule:

Payment for any contract entered into as a result of this RFP will be negotiated with the successful Respondent.

News Releases:

News releases pertaining to this RFP or the service, study, or project to which it relates will not be made from the Respondent without Partnership approval.

Disclosure Of Proposal Contents:

A summary of total price information for all submissions will not be furnished to those Respondents participating in this RFP upon their request. Cost and price information provided in the proposal will be held in confidence and will not be revealed or discussed with competitors. If a proposal contains any information that the Respondent does not want disclosed to the public or used by the Government for any purpose other than evaluation of their offer, each sheet of such information must be marked with the following legend:

“Information on this page is confidential and may be used only for evaluation purposes and may not be disclosed to other respondents.”

Independent Price Determination:

By submission of a proposal, the Respondent certifies, and in the case of a joint proposal each party thereto certifies as to its own organization, that in connection with this proposal:

- (1) The prices in the proposal have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Respondent or with any competitor; and
- (2) Unless otherwise required by law, the prices which have been quoted in the proposal have not been knowingly disclosed by the Respondent and will not knowingly be disclosed by the Respondent prior to award directly or indirectly to any other Respondent or to any competitor; and
- (3) No attempt has been made or will be made by the Respondent to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

Each person signing the proposal certifies that:

- (1) He/She is the person in the Respondent's organization responsible within that organization for the decision as to the prices being offered in the proposal and that he/she has not participated, and will not participate, in any action contrary to (1), (2) and (3) above: or
- (2) He/She is not the person in the Respondent's organization responsible within that organization for the decision as to the prices being offered in the proposal but that he/she has been authorized in writing to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to (1), (2) and (3) above, and as their agent does hereby so certify; and that he/she has not participated, and will not participate, in any action contrary to (1), (2) and (3) above.

Offerer Liability:

The Respondent will provide and maintain public liability, property damage, and worker's compensation insurance insuring, as they may appear, the interests of all parties to any agreement that results from this RFP. The Respondent is responsible for insuring that all precautions are exercised at all times for the protection of all persons and property. The Respondent shall secure all necessary certificates and permits from municipal or other public authorities and comply with all National, State and Municipal laws, ordinances and regulations as may be required. No work shall be performed outside of the U.S..

Required Content Form Respondent Proposal

Proposals must address each section listed below and be submitted in the format outlined below:

Business Organization:

State the full name and address of your organization and, if applicable, the branch office that will perform or assist in performing the work hereunder. Indicate whether you operate as an individual, partnership or corporation; if as a corporation, include the state in which you are incorporated. Briefly describe business history, operations, products, organization, key staff involved in this project and their relevant experience.

Technical Approach, Methodology, Time Frame, and Deliverables Provided:

State in succinct terms your understanding of the project presented by this RFP. Include a narrative description as to how the Respondent proposes to do their internal QC/QA work in order to complete the tasks and deliver the required products. List any exceptions taken to this RFP in a separate section.

Prior Experience In Digital Ortho Imagery Creation:

Proposals submitted should include, in this section, qualifying experience. This section should include project descriptions (including population and size of area), costs, and starting and completion dates of projects successfully completed. Also, the name, address, and phone number of the responsible official of the client organization who may be contacted. Include information on the experience of sub-contractors as it relates to their role in meeting the requirements of this RFP.

Sample of Products on DVD/CD:

The Partnership requests sample digital ortho data that will be similar to the products required here.

Cost Proposal:

See Proposal Response Form

Selection Criteria

Experience and Qualifications as Evidenced by:

1. Company background and history
 - Resumes for lead staff that would work on this project
 - Relevant experience with comparable projects covering similar geographic extents
 - Client references
2. Ability to Meet the Project Schedule and Complete the Project as Evidenced by:
 - Size of company; number of skilled employees
 - Adequacy of resources
 - Ability to meet scheduled completion dates
 - Understanding of project milestones
 - Client references
3. Quality of the Proposed Approach as Evidenced by:
 - Understanding and presentation of responses to technical issues
 - Use of modern technology
 - Project management plan incorporated in the response
 - Quality control procedures
 - Client references
4. Satisfactory relationship with the County based on prior work
5. Price
6. Project Deliverables

Digital Orthoimagery

Request for Proposals Ogle County GIS Partnership

INTENT TO RESPOND

This form indicates the firm's intent to respond to this Request for Proposal

Firm Name: _____

Primary Contact Person: _____

Primary Contact Person Position: _____

Address: _____

Telephone: _____

Fax: _____

Email: _____

MAIL, FAX or EMAIL By
Sept 21, 2012 To :

Mr. Larry Callant
Ogle County GIS
105 S. 5th Street; Suite 202
Oregon, Illinois 61061
Fax: 815- 732-6273
Email: gis@oglecounty.org

Digital Orthoimagery
Request for Proposals
Ogle County GIS Partnership
PROPOSAL RESPONSE FORM

Firm Name: _____

Primary Contact: _____

Address: _____

Telephone: _____

Fax: _____

Email: _____

Signature

Date

Proposal Response Form (continued)

All digital products will be delivered in the Illinois State Plane, Western Zone projection using the NAD83 (1997) horizontal datum, in feet. All vertical measurements will be referenced to the NAVD 1988 datum, in feet, 1997 adjustment (HARN).

Imagery Option # 1 Whole County with extended buffer page 20 Digital Orthophotos Negative Scale 1" = 700' Pixel Resolution: 0.5 ft (6 inch)	Color Imagery Band	Number of Tiles: Cost per Tile: Total Cost:
Imagery Option # 2 Whole County with extended buffer page 20 Digital Orthophotos Negative Scale 1" = 700' Pixel Resolution: 0.5 ft (6 inch)	Color Imagery 4 Band	Number of Tiles: Cost per Tile: Total Cost:
Imagery Option # 3 Selected Area Map page 23 Digital Orthophotos Negative Scale 1" = 700' Pixel Resolution: 0.5 ft (6 inch)	Color Imagery Band Select Areas of County	Number of Tiles: Cost per Tile: Total Cost:
Imagery Option # 4 Whole County with 1 mile buffer page 25 Digital Orthophotos Negative Scale 1" = 700' Pixel Resolution: 0.5 ft (6 inch)	Color Imagery Band	Number of Tiles: Cost per Tile: Total Cost:
Imagery Option # 5 Whole County with 1 mile buffer page 25 Digital Orthophotos Negative Scale 1" = 700' Pixel Resolution: 0.5 ft (6 inch)	Color Imagery 4 Band	Number of Tiles: Cost per Tile: Total Cost:

Proposal Response Form (continued)

All digital products will be delivered in the Illinois State Plane, Western Zone projection using the NAD83 (1997) horizontal datum, in feet. All vertical measurements will be referenced to the NAVD 1988 datum, in feet, 1997 adjustment (HARN).

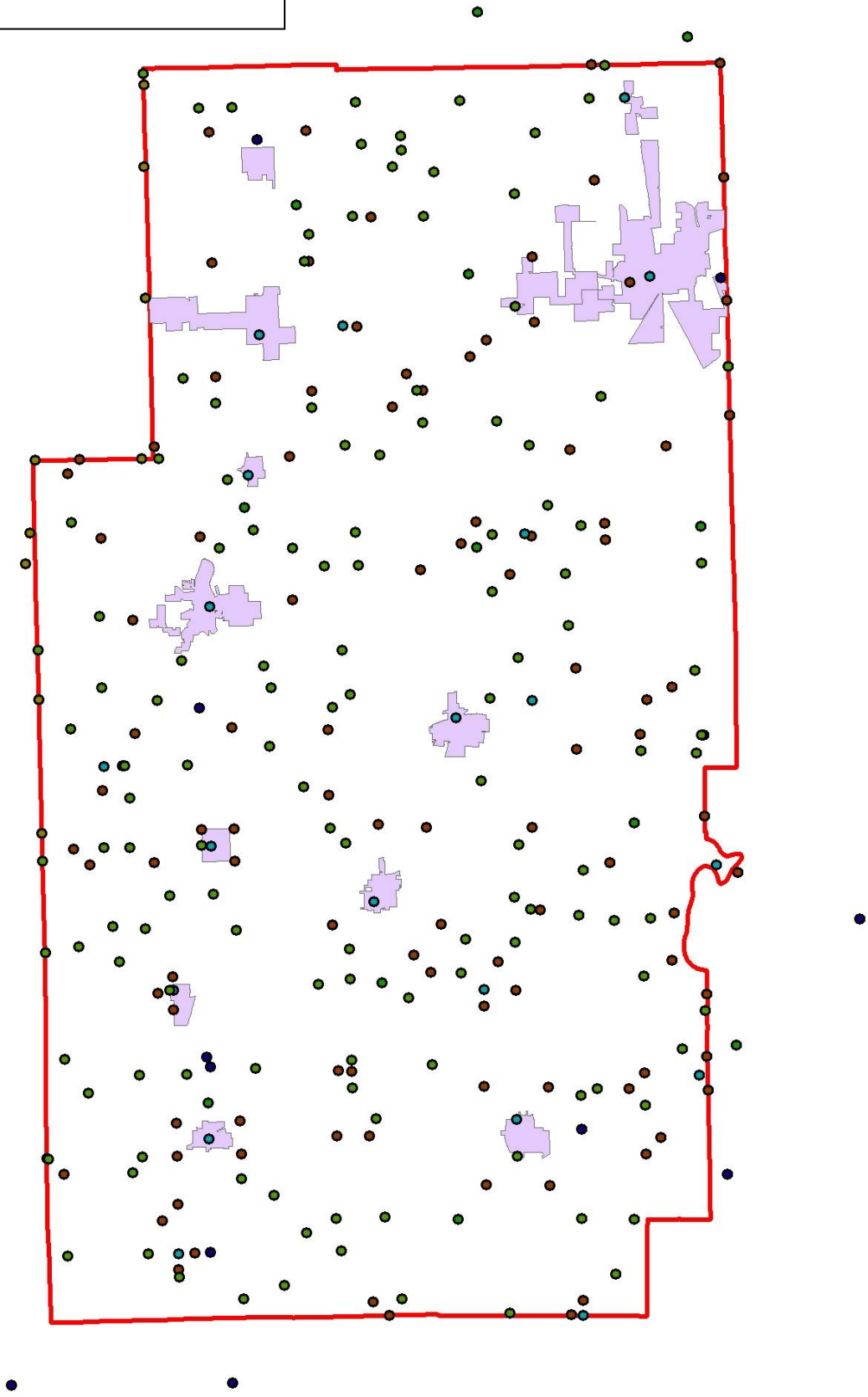
Elevation Option1 Selected Area Map page 23 LiDAR of Selected Areas Raw and Bare Earth Data FEMA Compliant 2'		Total Cost:
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Signature

Date

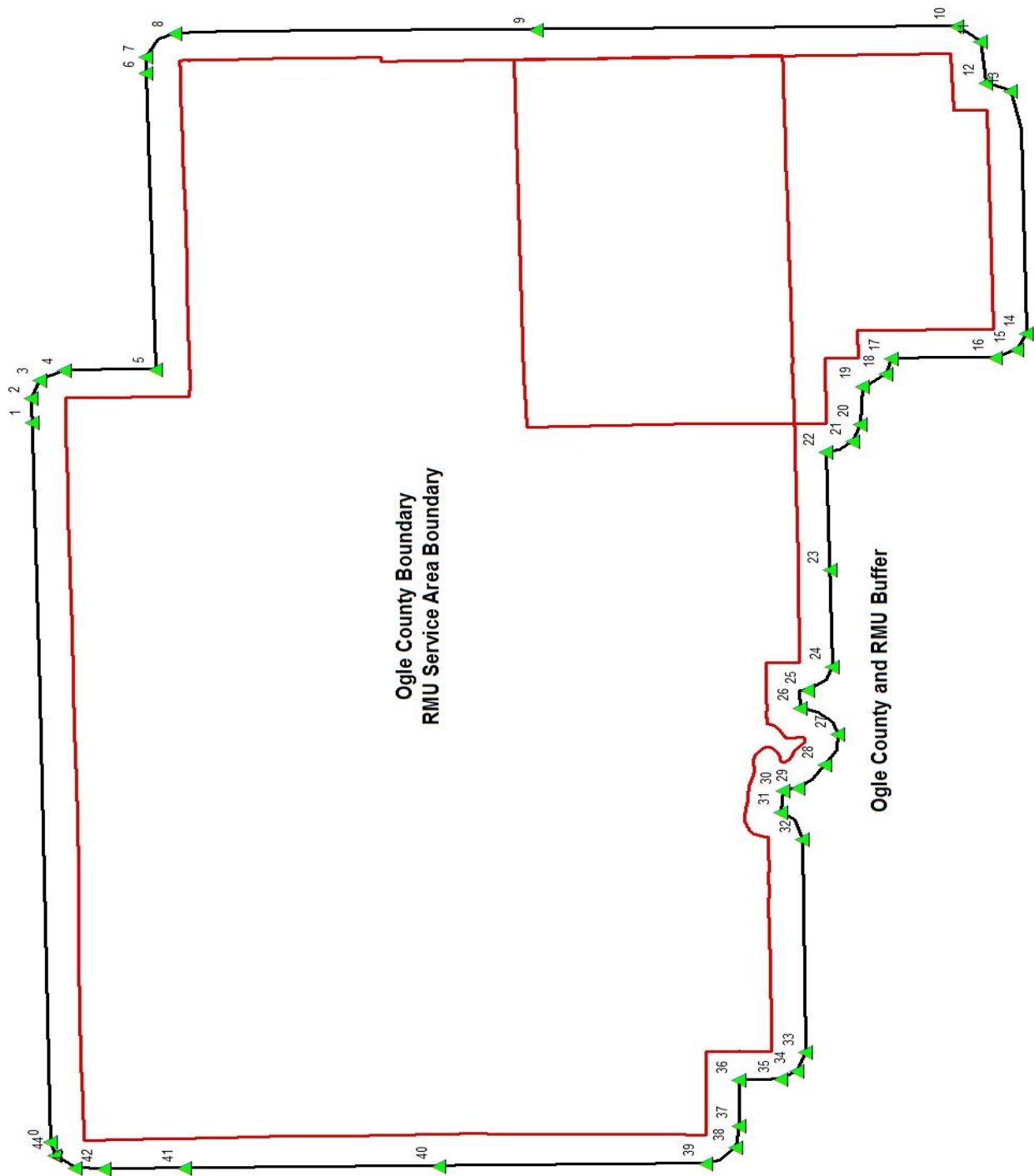
Available Ground Control Points

< ----- North



Ogle County with RMU Service Area
With Buffer

< ----- North



Ogle County with RMU Service Area With Buffer

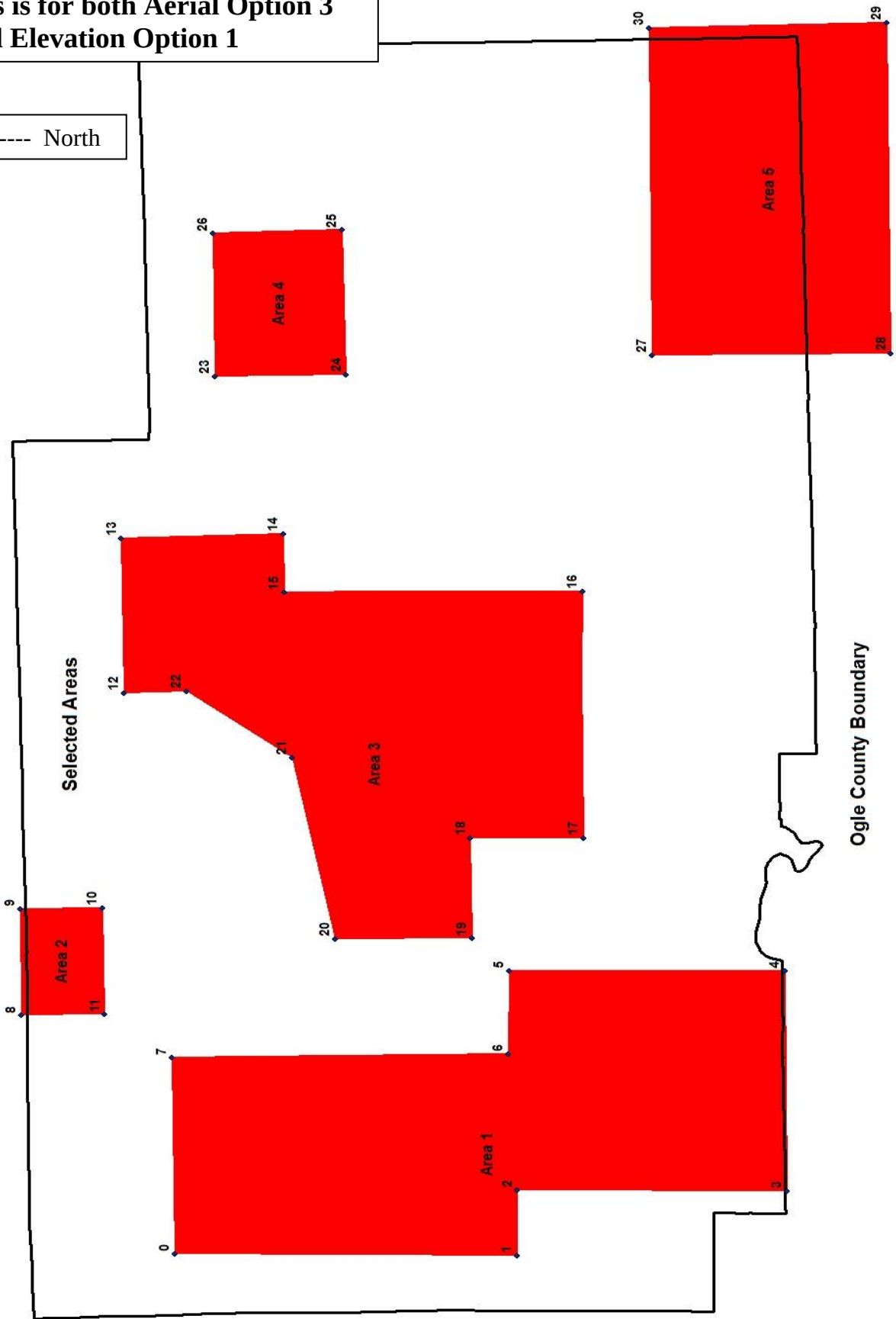
This is X,Y locations for buffer map page 19

NBR	POINT_X	POINT_Y
0	2425957.40692000000	2020716.02228000000
1	2561308.58265000000	2023595.31848000000
2	2565788.51837000000	2023701.98083000000
3	2569283.75537000000	2022392.14990000000
4	2571081.84814000000	2018499.42261000000
5	2571277.81317000000	2004166.39111000000
6	2626924.30206000000	2005636.49738000000
7	2629961.55542000000	2005650.95709000000
8	2634507.20599000000	2001105.30652000000
9	2635151.74997000000	1944129.20996000000
10	2635757.45563000000	1877988.88165000000
11	2632914.19366000000	1874283.47046000000
12	2625152.82532000000	1873504.30176000000
13	2623606.34918000000	1869569.47461000000
14	2577992.44238000000	1867070.14484000000
15	2574948.09692000000	1868571.44989000000
16	2573412.92548000000	1871959.64526000000
17	2573333.69751000000	1888255.68524000000
18	2570395.16785000000	1889145.52319000000
19	2568093.74988000000	1892846.50446000000
20	2561032.83685000000	1893239.90491000000
21	2557698.89001000000	1894329.64258000000
22	2555633.15027000000	1898518.54816000000
23	2533550.55368000000	1897986.78700000000
24	2515359.11096000000	1897548.72699000000
25	2510948.20093000000	1901416.99121000000
26	2507595.42078000000	1902647.44196000000
27	2502670.23981000000	1896767.14288000000
28	2496890.93396000000	1898809.47571000000
29	2492522.05804000000	1902960.87726000000
30	2491984.83783000000	1905318.62231000000
31	2488047.80585000000	1905659.20941000000
32	2482887.38947000000	1902393.96277000000

33	2442863.59491000000	1901861.07660000000
34	2439382.24890000000	1903171.36249000000
35	2437763.50653000000	1905774.51202000000
36	2437607.62201000000	1912225.56213000000
37	2429045.51611000000	1912233.79388000000
38	2424903.98029000000	1912785.77216000000
39	2421959.29346000000	1917538.73285000000
40	2421509.47076000000	1959523.59153000000
41	2421079.30728000000	1999673.52745000000
42	2420944.87811000000	2012220.67053000000
43	2421031.18762000000	2016805.45050000000
44	2423491.27600000000	2020011.49994000000

Selected Area Map
This is for both Aerial Option 3
And Elevation Option 1

< ----- North

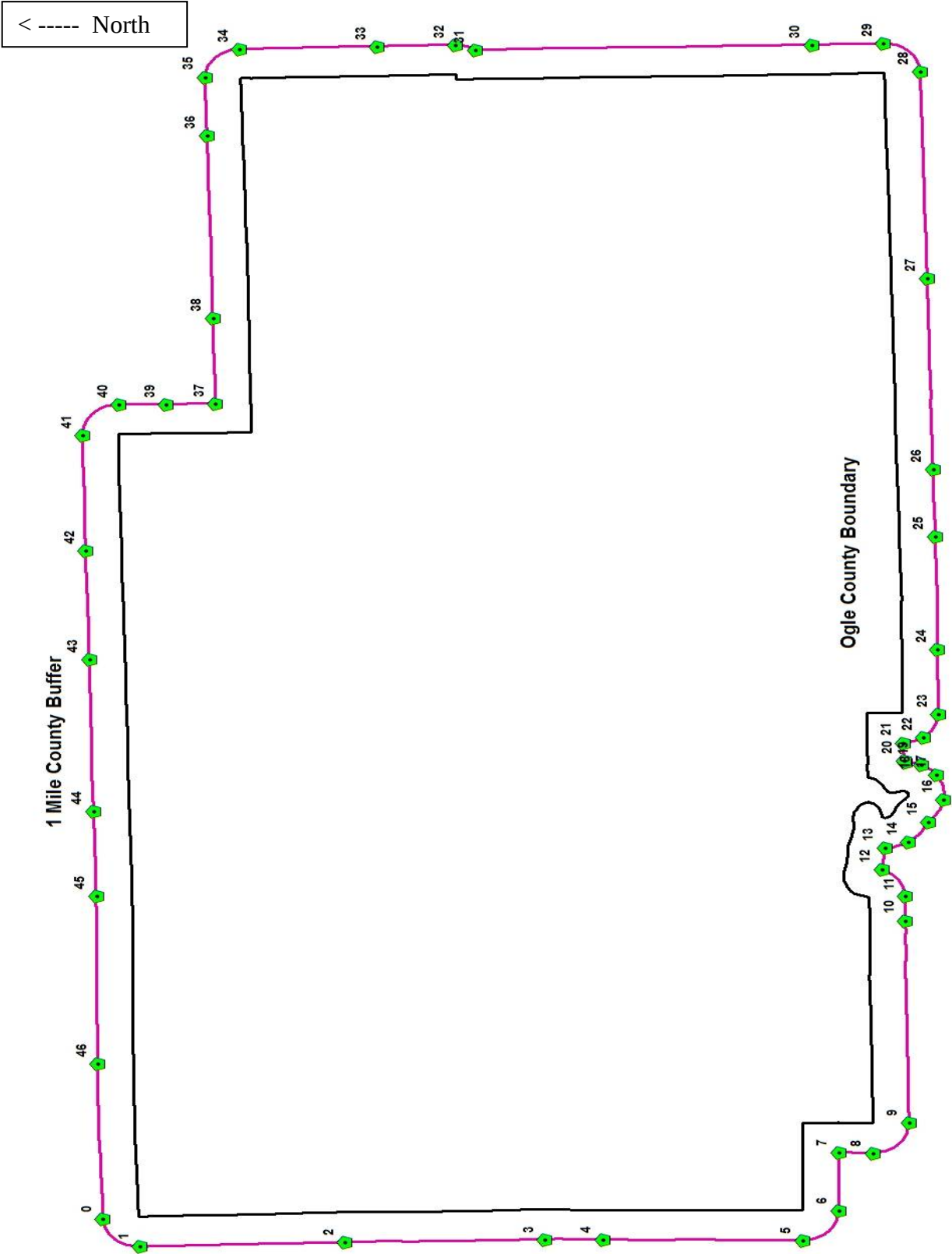


This is the Selected Area Map
This is for both Aerials Option 3
And Elevation Option 1

Area 1	67,598.46 Acres	2,944,588,938.63 Sq Ft
Area 2	4,663.75 Acres	203,153,140.27 Sq Ft
Area 3	60,638.32 Acres	2,641,407,504.01 Sq Ft
Area 4	9,888.72 Acres	430,752,756.58 Sq Ft
Area 5	41,266.28 Acres	1,797,559,371.15 Sq Ft

NBR	POINT_X	POINT_Y	Area_Name
0	2436464.664640000000	1995169.206200000000	Area 1
1	2436267.280640000000	1945801.505760000000	Area 1
2	2446610.201230000000	1945767.443690000000	Area 1
3	2446523.172610000000	1906962.670640000000	Area 1
4	2481593.985190000000	1907248.988400000000	Area 1
5	2481560.280900000000	1946998.378160000000	Area 1
6	2468386.586470000000	1947113.222170000000	Area 1
7	2467814.096460000000	1995550.953360000000	Area 1
8	2474459.863900000000	2017223.818020000000	Area 2
9	2491424.070740000000	2017410.237870000000	Area 2
10	2491610.490590000000	2005510.437100000000	Area 2
11	2474615.213780000000	2005199.737340000000	Area 2
12	2525837.371900000000	2002431.307360000000	Area 3
13	2550405.730510000000	2002788.166200000000	Area 3
14	2551146.898870000000	1979482.538870000000	Area 3
15	2541792.800880000000	1979345.769800000000	Area 3
16	2542007.821920000000	1936388.375030000000	Area 3
17	2502701.880670000000	1936222.909220000000	Area 3
18	2502646.041370000000	1952529.029630000000	Area 3
19	2486720.331860000000	1952283.914690000000	Area 3
20	2486649.561010000000	1972054.853490000000	Area 3
21	2515469.171370000000	1978189.430260000000	Area 3
22	2526094.171370000000	1993397.763590000000	Area 3
23	2576184.680200000000	1989341.578260000000	Area 4
24	2576445.575820000000	1970408.010260000000	Area 4
25	2599516.202980000000	1971004.343110000000	Area 4
26	2598957.140930000000	1989639.744690000000	Area 4
27	2579575.095120000000	1926387.071400000000	Area 5
28	2579844.451660000000	1891947.913840000000	Area 5
29	2632506.617280000000	1892621.648700000000	Area 5
30	2631669.882040000000	1926808.259870000000	Area 5

This is the County 1 mile buffer
This is for both Aerial Option 4
And Aerial Option 5



**This is the County 1 mile buffer
This is for both Aerial Option 4
And Aerial Option 5**

This is X,Y locations for buffer map page 24

ID NBR	POINT_X	POINT_Y
0	2425797.89475000000	2020705.63128000000
1	2420866.34737000000	2015238.65876000000
2	2421683.57522000000	1985057.58880000000
3	2422162.63982000000	1955581.02561000000
4	2422078.09901000000	1947014.22330000000
5	2421965.37793000000	1917537.66011000000
6	2427291.44910000000	1912239.76921000000
7	2437605.42819000000	1912211.58894000000
8	2437577.24792000000	1907167.32048000000
9	2442987.85990000000	1901869.42958000000
10	2479058.60644000000	1902348.49418000000
11	2483370.18787000000	1902376.67445000000
12	2488132.65362000000	1905871.02802000000
13	2491993.35071000000	1905420.14369000000
14	2493064.20100000000	1901953.97039000000
15	2496671.27565000000	1898995.04196000000
16	2500560.15302000000	1896740.62031000000
17	2505068.99633000000	1897867.83113000000
18	2506816.17312000000	1899981.35144000000
19	2507351.59826000000	1902348.49418000000
20	2507605.22070000000	1902630.29689000000
21	2510761.41102000000	1902714.83770000000
22	2511719.54023000000	1899727.72900000000
23	2515833.85976000000	1897473.30734000000
24	2527387.77076000000	1897642.38897000000
25	2547593.02488000000	1898008.73249000000
26	2559569.63994000000	1898318.71547000000
27	2593639.58727000000	1899192.30386000000
28	2630555.74193000000	1900234.97388000000
29	2635515.46958000000	1905645.58586000000
30	2635290.02742000000	1916241.36766000000
31	2634416.43902000000	1965754.10334000000
32	2635233.66688000000	1968741.21204000000
33	2634951.86417000000	1980266.94277000000
34	2634557.34038000000	2000556.73771000000
35	2629569.43246000000	2005685.54698000000
36	2619058.19147000000	2005403.74427000000

37	2571264.45230000000	2004163.81236000000
38	2586566.33931000000	2004530.15588000000
39	2571179.91149000000	2011406.14194000000
40	2571095.37067000000	2018366.66881000000
41	2565656.57842000000	2023692.73998000000
42	2545084.98078000000	2023241.85565000000
43	2525696.95452000000	2022762.79105000000
44	2498559.35379000000	2022114.64482000000
45	2483482.90895000000	2021720.12103000000
46	2453555.46142000000	2021494.67886000000