**TASK ORDER DETAIL** July 28, 2010

**USGS CONTRACT: G10PC00026**

**CONTRACTOR: PhotoScience**

**TASK ORDER NUMBER: G10PD02126**

**TASK NAME: Baldwin County Alabama (East & West) LiDAR Task Order**

The Contractor shall furnish all facilities, labor, materials, and equipment, unless specifically identified otherwise, to provide the mapping services and products in accordance with the specifications, terms, and conditions contained in Contract No. G10PC00026, and the following requirements specific to this Task Order, and in accordance with Contractor's proposal dated July 22, 2010 and in the amount of:

| **Task Order Fixed Price** | **$102,808.78** |
|---|---|

## SECTION C: DESCRIPTION/SPECIFICATIONS/WORK STATEMENT.

The following **Section C** additional requirements are applicable to this Task Order:

C.1. **Statement of Work (SOW):** Reference C.1 of the Contract. This task order is for Planning, Acquisition, processing, and derivative products of lidar data to be collected at a nominal pulse spacing (NPS) of 2.0 meters. Lidar data, and derivative products produced in compliance with this task order are done so under the specifications listed below, and are based on the ***"U.S. Geological Survey National Geospatial Program Lidar Guidelines and Base Specification, Version 13-ILMF 2010",*** of which sections I through IV are incorporated by reference, and included as **"Attachment C"** to this task order. The attached lidar specifications are required baseline specifications. In addition to the requirements listed below, variations from the specifications will be shown and noted below. **For any item which is not specifically addressed below, the attached version 13 specifications will be the required specification authority.**

This task order requests LiDAR surveys be collected in 2 AOI's that comprise 329 square miles in Baldwin County, Alabama. These 2 AOI's are immediately to the east and west of the *NGOM Alabama LiDAR (ARRA) task* that was collected by PhotoScience, Inc. in the Spring of 2010. This regional LiDAR elevation mapping will be used for modeling, predicting landscape change, promoting restoration of ecosystems, and mitigating risks associated with anthropomorphic and natural hazards.

C.1.a. **DATA ACQUISITION (COLLECTION):** The contractor shall be responsible for acquisition of lidar data of sufficient density and quality to meet the requirements specified in **Attachment C Section I**:

C.1.a.(i) **Collection area**: The collection area shall be defined as the Defined Project Area, buffered by a minimum of 100 meters. The Project Area is defined in **"Attachment A – Project Description and Diagram"** and further delineated by the ESRI ArcShape file included as **"Attachment B – Shape File(s)".**

C.1.a.(ii) **Nominal Pulse Spacing:** Nominal Pulse Spacing (NPS) shall be no greater than 2 meters; assessment to be made against single swath, first return data located within the geometrically usable center portion (typically ~90%) of each swath.

C.1.a.(iii) **Signal Returns** The laser system shall be configured to collect multiple echoes per pulse, with a minimum of a first return and a last return and at least one additional intermediate return. All returns captured during acquisition shall be delivered. Return number shall be recorded.

C.1.a.(iv) **GPS Times:** shall be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each return. Adjusted GPS Time is defined to be Standard (or satellite) GPS time minus $1*10^9$. See the LAS Specification for more detail.

C.1.a.(v) **Signal Strength:** The signal strength (intensity) of each return pulse shall be recorded.

C.1.a.(vi) **Clustering:** The spatial distribution of geometrically usable points is expected to be uniform and free from clustering. In order to ensure uniform densities throughout the data set:

C.1.a.(vi)(a) A regular grid, with cell size equal to the design NPS*2 will be laid over the data.

C.1.a.(vi)(b) At least 90% of the cells in the grid shall contain at least 1 lidar point.

C.1.a.(vi)(c) Assessment to be made against single swath, first return data located within the geometrically usable center portion (typically ~90%) of each swath

C.1.a.(vi)(d) Acceptable data voids identified elsewhere in this specification are excluded.

C.1.a.(vii) **Control:** LIDAR shall be acquired using the following control specifications.

C.1.a.(vii)(a) **Supplemental Ground Control**: Differentially corrected GPS Ground Control used to supplement the Airborne GPS positional accuracy.

C.1.a.(vii)(b) **Ground Control Quality Check points**: The Contractor shall collect a minimum of twenty (20) additional Ground Control points which shall be

delivered in ESRI Arc Shape format and will be used by the Government for validation.

(01) Twenty (20) check points shall be collected uniformly dispersed over the project area to verify fundamental vertical accuracy.

(02) Fundamental vertical accuracy checkpoints should be located only in open terrain, where there is a high probability that the sensor will have detected the ground surface without influence from surrounding vegetation.

(03) Checkpoints should be located on flat or uniformly sloping terrain and will be at least five (5) meters away from any breakline where there is a change in slope.

(04) The checkpoint accuracy shall satisfy a Local Network accuracy of 5-centimeteres at the 95% confidence level.

(05) Check points shall not be incorporated into the contractor's vertical solution.

C.1.a.(viii) **Vertical Accuracy Requirements:** Lidar collected under this task order shall be at a vertical accuracy NSSDA $RMSE_Z$ = 15cm (NSSDA $Accuracy_Z$ 95% = 30cm) or better; assessment procedures to comply with FEMA guidelines.

C.1.a.(ix) **Positional Accuracy Validation:** The absolute and relative accuracy of the data, both horizontal and vertical, relative to known control, shall be verified prior to classification and subsequent product development. A detailed report of this validation is a required deliverable

C.1.a.(x) **Relative Accuracy Requirements:** Relative accuracy of 7 - 10cm $RMSE_Z$ or better; assessment to be made swath-to-swath and within single swaths.

C.1.a.(xi) **Acquisition Window:** Acquisition window shall be January 1, 2011-March 31, 2011.

C.1.a.(xii) **Swath Length**: Long swaths (those which result in a LAS file larger than 2GB) shall be split into segments. Each segment shall thenceforth be regarded as a unique swath. Other swath segmentation criteria may be acceptable, with prior approval.

C.1.a.(xiii) **Overlap:** Flight line overlap of 10% or greater, as required to ensure there are no data gaps between the usable portions of the swaths. Collections in high relief terrain are expected to require greater overlap. Any data with gaps between the geometrically usable portions of the swaths will be rejected.

C.1.a.(xiv) **Data Voids:** Data Voids [areas => $(4*NPS)^2$, measured using $1^{st}$-returns only] within a single swath are not acceptable, except:

C.1.a.(xiv)(a) where caused by water bodies

C.1.a.(xiv)(b) where caused by areas of low near infra-red (NIR) reflectivity such as asphalt or composition roofing.

C.1.a.(xiv)(c) where appropriately filled-in by another swath

C.1.a.(xv) **Data Acquisition Conditions:**

C.1.a.(xv)(a) **Atmospheric**: Cloud and fog-free between the aircraft and ground

C.1.a.(xv)(b) **Ground**:

(01) Snow free; very light, undrifted snow may be acceptable in special cases, with prior approval.

(02) No unusual flooding or inundation, except in cases where the goal of the collection is to map the inundation.

C.1.a.(xv)(c) **Vegetation**: Leaf-off is preferred, however:

(01) As numerous factors will affect vegetative condition at the time of any collection, the USGS National Geospatial Program (NGP) only requires that penetration to the ground must be adequate to produce an accurate and reliable bare-earth surface suitable for incorporation into the 1/9 (3-meter) NED.

(02) Collections for specific scientific research projects may be exempted from this requirement, with prior approval.

C.1.a.(xvi) **Time of Day:** Time of day is not of concern.

C.1.b. **DATA PROCESSING AND HANDLING:** The contractor shall be responsible for post processing of lidar data of sufficient density and quality to meet the requirements specified in **Attachment C, Section II**. All processing should be carried out with the understanding that all point deliverables are required to be in fully compliant LAS format, v1.2 or v1.3. Data producers are encouraged to review the LAS specification in detail.

C.1.b.(i) **In BARE EARTH AREA**

C.1.b.(i)(a) **Data Accuracy:** Data collected under this Task Order shall meet the National Standard for Spatial Database Accuracy (NSSDA) accuracy standards. The NSSDA standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy. For example the metadata statement shall read, "Tested __ (meters, feet) vertical accuracy at 95 percent confidence level."

C.1.b.(i)(b) **Fundamental Vertical Accuracy** (FVA) of the TIN: 36.3 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSE of 18.5 cm in the "open terrain" land cover category. This is a required accuracy.

C.1.b.(i)(c) **Consolidated Vertical Accuracy (CVA):** 36.3 cm at a 95% confidence level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for LiDAR Data, i.e., based on the 95th percentile error in all land cover categories combined. This is a required accuracy.

C.1.b.(ii) **Hydro Flattening Requirements**:

C.1.b.(ii)(a) **Inland Ponds and Lakes**:

(01) ~2-acre or greater surface area (~350' diameter for a round pond)
(02) Flat and level water bodies (single elevation for every bank vertex defining a given water body).
(03) The entire water surface edge must be at or just below the immediately surrounding terrain.
(04) Long impoundments such as reservoirs, inlets, and fjords, whose water surface elevations drop when moving downstream, should be treated as rivers.

C.1.b.(ii)(b) **Inland Streams and Rivers**:

(01) 100' **nominal** width: This should not unnecessarily break a stream or river into multiple segments. At times it may squeeze slightly below 100' for short segments. Data producers should use their best professional judgment.
(02) Flat and level bank-to-bank (perpendicular to the apparent flow centerline); gradient to follow the immediately surrounding terrain.
(03) The entire water surface edge must be at or just below the immediately surrounding terrain.
(04) Streams should break at road crossings (culvert locations). These road fills should not be removed from DEM. However, streams and rivers should **not** break at bridges. Bridges should be removed from DEM. When the identification of a feature as a bridge or culvert cannot be made reliably, the feature should be regarded as a culvert.

C.1.b.(ii)(c) **Non-Tidal Boundary Waters**:

(01) Represented only as an edge or edges within the project area; collection does not include the opposing shore.
(02) The entire water surface edge must be at or below the immediately surrounding terrain.
(03) The elevation along the edge or edges should behave consistently throughout the project. May be a single elevation (i.e., lake) or gradient (i.e., river), as appropriate.

C.1.b.(ii)(d) **Tidal Waters**:

(01) Water bodies such as oceans, seas, gulfs, bays, inlets, salt marshes, very large lakes, etc. Includes any significant water body that is affected by tidal variations.

(02) Tidal variations over the course of a collection, and between different collections, will result in discontinuities along shorelines. This is considered normal and these "anomalies" should be retained. The final DEM should represent as much ground as the collected data permits.

(03) Variations in water surface elevation resulting in tidal variations during a collection should NOT be removed or adjusted, as this requires either the removal of ground points or the introduction of unmeasured ground into the DEM. The USGS NGP priority is on the ground surface, and accepts the unavoidable irregularities in water surface.

(04) Scientific research projects in coastal areas often have very specific requirements with regard to how tidal land-water boundaries are to be handled. For such projects, the requirements of the research will take precedence.

C.1.c. **DELIVERABLE PRODUCTS:** The following deliverable products shall be produced from the lidar produced in C.1.b above.

C.1.c.(i) **Raw Point Cloud Data:**

C.1.c.(i)(a) Fully compliant LAS v1.2 or v1.3, Point Record Format 1, 3, 4, or 5

C.1.c.(i)(b) LAS v1.3 deliverables with waveform data are to use external "auxiliary" files with the extension ".wdp" for the storage of waveform packet data. See the LAS v1.3 Specification for additional information.

C.1.c.(i)(c) Georeference information included in all LAS file headers

C.1.c.(i)(d) GPS times are to be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each return.

C.1.c.(i)(e) Intensity values in native radiometric resolution.

C.1.c.(i)(f) Full swaths, all collected points to be delivered.

C.1.c.(i)(g) 1 file per swath, 1 swath per file, file size not to exceed 2GB, as described in Section II, Paragraph 5.

C.1.c.(ii) **Classified Point Cloud**:

C.1.c.(ii)(a) Fully compliant LAS v1.2 or v1.3, Point Record Format 1, 3, 4, or 5

C.1.c.(ii)(b) LAS v1.3 deliverables with waveform data are to use external "auxiliary" files with the extension ".wdp" for the storage of waveform packet data. See the LAS v1.3 Specification for additional information.

C.1.c.(ii)(c) Georeference information included in LAS header

C.1.c.(ii)(d) GPS times are to be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each return.

C.1.c.(ii)(e) Intensity values (native radiometric resolution)

C.1.c.(ii)(f) Tiled delivery, without overlap

C.1.c.(ii)(g) Classification Scheme (minimum):

(01) Code 1 – Processed, but unclassified
(02) Code 2 – Bare-earth ground
(03) Code 7 – Noise (low or high, manually identified, if needed
(04) Code 9 – Water
(05) Code 10 – Ignored Ground (Breakline Proximity)
(06) Code 11 – Withheld (if the "Withheld" bit is not implemented in processing software)

C.1.c.(ii)(h) *Note: Class 7, Noise, is included as a convenience for the data producer. It is not required that all "noise" be assigned to Class 7.*

C.1.c.(ii)(i) *Note: Class 10, Ignored Ground, is for points previously classified as bare-earth but whose proximity to a subsequently added breakline requires that it be excluded during Digital Elevation Model (DEM) generation.*

C.1.c.(iii) **Bare Earth Surface (Raster DEM):**

C.1.c.(iii)(a) Cell Size no greater than 2 meters or 10 feet, and no less than the design Nominal Pulse Spacing (NPS).

C.1.c.(iii)(b) Delivery in an industry-standard, GIS-compatible, 32-bit floating point raster format (ERDAS .IMG preferred)

C.1.c.(iii)(c) Georeference information shall be included in raster file

C.1.c.(iii)(d) Tiled delivery, without overlap

C.1.c.(iii)(e) DEM tiles will show no edge artifacts or mismatch. A quilted appearance in the overall project DEM surface, whether caused by differences in processing quality or character between tiles, swaths, lifts, or other non-natural divisions, will be cause for rejection of the entire DEM deliverable.

C.1.c.(iii)(f) Void areas (i.e., areas outside the project boundary but within the tiling scheme) shall be coded using a unique "NODATA" value. This value shall be identified in the appropriate location within the file header.

C.1.c.(iii)(g) Vertical Accuracy of the bare earth surface will be assessed and reported in accordance with the guidelines developed by the NDEP and subsequently adopted by the ASPRS. The complete guidelines may be found in Section 1.5 of the Guidelines document. See:

http://www.ndep.gov/NDEP_Elevation_Guidelines_Ver1_10May2004.pdf

Vertical accuracy requirements using the NDEP/ASPRS methodology are:

FVA <= 24.5cm ACCz, 95% (12.5cm RMSEz)
CVA <= 36.3cm, 95th Percentile
SVA <= 36.3cm, 95th Percentile.

C.1.c.(iii)(h) All QA/QC analysis materials and results are to be delivered to the USGS.

C.1.c.(iii)(i) Depressions (sinks), natural or man-made, are not to be filled (as in hydro-conditioning and hydro-enforcement).

C.1.c.(iii)(j) Water Bodies (ponds and lakes), wide streams and rivers ("double-line"), and other non-tidal water bodies as defined in Section III are to be hydro-flattened within the DEM. Hydro-flattening shall be applied to all water impoundments, natural or man-made, that are larger than ~2 acre in area (equivalent to a round pond ~350' in diameter), to all streams that are nominally wider than 100', and to all non-tidal boundary waters bordering the project area regardless of size. The methodology used for hydro-flattening is at the discretion of the data producer.

C.1.c.(iv) **Control:** Control, as defined in C.1.a. above shall be delivered to the Government as specified in C.2. Digital Deliverables.

C.1.c.(v) **Metadata:** The following requirements for Metadata shall be met:

C.1.c.(v)(a) Collection Report detailing mission planning and flight logs.

C.1.c.(v)(b) Survey Report detailing the collection of control and reference points used for calibration and QA/QC.

C.1.c.(v)(c) Processing Report detailing calibration, classification, and product generation procedures including methodology used for breakline collection and hydro-flattening.

C.1.c.(v)(d) QA/QC Reports (detailing the analysis, accuracy assessment and validation of:

(01) The point data (absolute, within swath, and between swath)

(02) The bare-earth surface (absolute)
(03) Other optional deliverables as appropriate

C.1.c.(v)(e) Control and Calibration points: All control and reference points used to calibrate, control, process, and validate the lidar point data or any derivative products are to be delivered.

C.1.c.(v)(f) Geo-referenced, digital spatial representation of the precise extents of each delivered dataset. This should reflect the extents of the actual lidar source or derived product data, exclusive of Triangular Irregular Network (TIN) artifacts or raster NODATA areas. A union of tile boundaries or minimum bounding rectangle is not acceptable. ESRI Polygon shapefile is preferred.

C.1.c.(v)(g) Product metadata (FGDC compliant, XML format metadata). One file for each:
(01) Project
(02) Lift
(03) Tiled deliverable product group (classified point data, bare-earth DEMs, breaklines, etc.). Metadata files for individual tiles are not required.

C.1.c.(vi) **Project Report:** The contractor shall deliver a production report which details:

C.1.c.(vi)(a) A record of field work procedures.
C.1.c.(vi)(b) Data derivation and adjustments.
C.1.c.(vi)(c) Quality control procedures and results.
C.1.c.(vi)(d) Any problems encountered and solutions used in resolving such problems.
C.1.c.(vi)(e) Statistical report summarizing the results of the airborne GPS adjustment and the overall accuracy of the adjusted IMU data.
C.1.c.(vi)(f) Production report shall be Microsoft Word, Adobe PDF format or other compatible digital format.

## C.1.d. TILING SCHEME AND DATA FORMAT:

C.1.d.(i) **Tile Coverage:** Tiles which lie completely within the project area shall be complete to the tile edges. Tiles which lie partially outside the project boundary shall be complete to the project boundary with enough overlap beyond the project boundary to ensure that no parts of the project are omitted.

C.1.d.(i)(a) **Tile Size:**
(01) Tiles shall be 1500 meters x 1500 meters

(02) Tiled deliverables shall conform to the tiling scheme, without added overlap.

(03) Tiling scheme will be used for all tiled deliverables.

(04) Tiled deliverables shall edge-match seamlessly in both the horizontal and vertical.

C.1.d.(i)(b) **Spatial Reference System**:

(01) The Spatial Reference System shall be: *for the Conterminous United States (CONUS) is: UTM Zone 15, NAD83, Meters; NAVD88, Meters. Data should reference the most recent Geoid model approved by the NGS.)*

C.1.e. **NOTIFICATION:** The Government POC named below shall be notified within 24 hours of the start of acquisition of data. Notification can be made by e-mail and is for information purposes only, not permission to proceed.

C.1.f. **PERMITS:** The contractor shall be responsible for obtaining all permits which may be required in the performance of this task order, which shall include, but not be limited to any permits for acquisition of data in controlled or restricted airspace, and access to control points on the ground.

C.1.g. **USE AND DISTRIBUTION RIGHTS:** All deliverable data and documentation shall be free from restrictions regarding use and distribution. Data and documentation provided under this Task Order shall be freely distributable by government agencies.

C.1.g.(i) **NOTE: *"U.S. Geological Survey National Geospatial Program Lidar Guidelines and Base Specification, Version 13-ILMF 2010",*** Section IV, regarding data providers rights to resell data or derivative products as they see fit are specifically exempted from this task order.

C.1.h. **CERTIFICATIONS:** The contractor shall certify as part of its proposal that the work performed on this task order complies with Section 52.225-05 of the Federal Acquisition Regulations relating to Trade Agreements.

C.1.i. **THE GOVERNMENT POINT-OF-CONTACT (POC)** FOR THIS TASK ORDER: The Government Point of Contact for the original task order and any modifications shall be the POC listed below.

**Address:** USGS/NGTOC
**ATTN**: Patrick Emmett, MS 666
1400 Independence Road
Rolla, MO 65401

**Telephone:**(573) 308-3587
**FAX:**(573)-308-3810
**e-mail:** pemmett@usgs.gov

C.2. **Digital Deliverables**: Reference C.1 of the Contract.

C.2.a. **The Contractor shall deliver one copy** of the Lidar data products and documentation as specified in Section C.1 of this Task Order.

C.2.b. **Format:** Data shall be delivered in the formats specified in C.1.c above.

C.2.c. **Delivery Medium:** The digital data shall be delivered on external hard drive, i.e. (firewire, or USB2 – Less than USB2 is not acceptable). Files shall be stored into appropriate directories on the drive.

C.2.d. **Deliverable Validation:** Reference C.1 - 3.12 of the Contract. The Government may choose to contract with a separate contractor for validation on all submitted deliverables.

## SECTION D: - PACKAGING AND MARKING

D.1. No additional Section D requirements are applicable to this Task Order.

**SECTION E: - INSPECTION AND ACCEPTANCE** - The following Section E additional requirements are applicable to this Task Order:

E.1. **Inspection Period:** Reference E.4 GS0720 of the Contract. The inspection period begins the day after the data has been delivered. All deliverables will be validated within a thirty (30) calendar-day of the inspection period

E.2. **Inspection and Acceptance Procedures:** Reference E.5 E780 of the Contract. The Government will perform a full inspection of all deliverables in accordance with E.5 E780 (b) of the Contract.

**SECTION F: - DELIVERIES OR PERFORMANCE** - The following Section F additional requirements are applicable to this Task Order:

F.1. **Place of Delivery:** Reference F.2 GS0904 of the Contract. Contractor shall submit all requested deliverables to the address of the POC, as shown in Section C of this Task Order.

F.2. **Delivery Schedule:** Reference F.10 F981 of the Contract. The Government requires the following delivery schedule:

F.2.a. **Lot One (1):** Consisting of all required deliverables (including metadata) of the lidar data and its derived products as specified in the task order, shall be delivered no later than 30 days following completion of data acquisition, but in no case later than **May 31, 2011.**

F.3. **Negotiated Delivery Date(s)** for Task Order:

F.3.a. **Lot One (1)**- all requested deliverables, including metadata and reports, for **Baldwin County West** AOI LiDAR will be delivered no later than 70 days following completion of data acquisition but in no case later than **May 16, 2011**. Delivery will consist of one (1) complete copy of the data.

F.3.b. **Lot Two (2)** - all requested deliverables, including metadata and reports, for **Baldwin County East** AOI LiDAR will be delivered no later than 90 days following completion of data acquisition but in no case later than **May 31, 2011**. Delivery will consist of one (1) complete copy of the data.

F.4. **Nonconforming deliverables:** Nonconforming deliverables returned to contractor for rework shall be delivered in accordance with Contract clause E.6 E784 (b).

F.5. **Progress Reports:** Contractor shall submit a monthly progress report for this task order in accordance with Contract clause F.6 GS0921 and F.7 GS0931.

## SECTION G: - CONTRACT ADMINISTRATION DATA

G.1. No additional Section G requirements are applicable to this Task Order

## SECTION H: - SPECIAL CONTRACT REQUIREMENTS -The following Section H additional requirements are applicable to this Task Order:

H.1. **Applicable Regulations And Permits -- Aircraft Operations**: Reference H.5 H1344 of the contract. The contractor shall be responsible for applying for and obtaining any required permits for access, over-flight, or intrusion to restricted or otherwise limited ground access and/or airspace, which may be included within the requirement of this task order.

H.2. **Government Furnished Property:** Reference H1480 (Conditions Regarding Use Of GFP) of the contract. No Government furnished property is being supplied with this Task Order.

## SECTION I: - CONTRACT CLAUSES

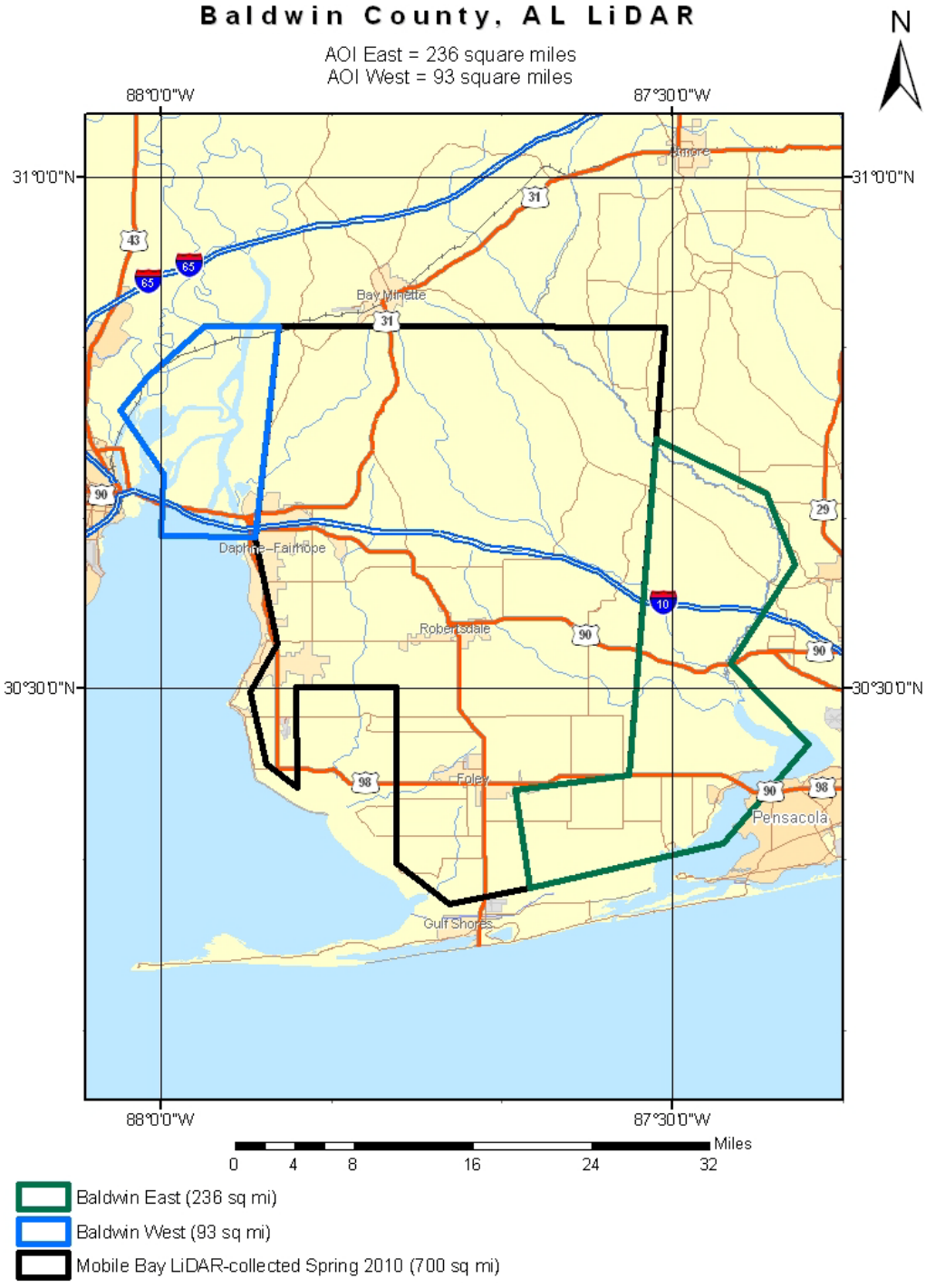
I.1. No additional detail is required for this Task Order.

## SECTION J: - LIST OF ATTACHMENTS TO THIS TASK ORDER

| | | | |
|---|---|---|---|
| J.1. | Attachment A - | Project Area Description | 1 Page |
| J.2. | Attachment B - | Shape files | 1 Page |
| J.3. | Attachment C - *USGS-NGP Lidar Guidelines and Base Specification v13(ILMF).pdf* | | 18 Pages |

**TASK ORDER Attachment A -**
**Baldwin County Alabama (East & West) LiDAR** – Project Description and Diagram

The AOI includes approximately 329 square miles of Baldwin County Alabama.




**END "ATTACHMENT A"**

**TASK ORDER Attachment B -**
**Baldwin County Alabama (East & West) LiDAR** – Project Shape Files

**THIS SECTION CONSISTS OF THE FOLLOWING DATA SET(S)**

**Baldwin_County_East.zip**
**Baldwin_County West.zip**

**END "ATTACHMENT B**

**THIS SECTION CONSISTS OF THE FOLLOWING DOCUMENT:**

***USGS-NGP Lidar Guidelines and Base Specification v13(ILMF).pdf***

**END "ATTACHMENT C"**