

TASK ORDER DETAIL**USGS CONTRACT: G10PC00093****CONTRACTOR: Digital Aerial Solutions****TASK ORDER NUMBER: G11PD00236****TASK NAME: Suwannee River Expansion 1.0 Meter LiDAR**

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. G10PC00093, and the following requirements specific to this Task Order.

Task Order Fixed Price	\$319,209.33
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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 1.0 meter. 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 *“FEMA Procedure Memorandum No. 61- Standards for Lidar and Other High Quality Digital Topography”* and the *“U.S. Geological Survey National Geospatial Program Lidar Guidelines and Base Specification, Version 13-ILMF 2010”* located at the following site: [http://lidar.cr.usgs.gov/USGS-NGP%20Lidar%20Guidelines%20and%20Base%20Specification%20v13\(ILMF\).pdf](http://lidar.cr.usgs.gov/USGS-NGP%20Lidar%20Guidelines%20and%20Base%20Specification%20v13(ILMF).pdf), of which sections I through IV are incorporated by reference. These specifications are 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 a proposal for LiDAR surveys to be collected over approximately **950** square miles within the Suwannee River watershed located in north-central Florida, as shown in Attachment A. Vertical RMSE for this task shall be 9.25 cm. This will be a hydro-**flattened** task. This task order also has one additional requirement to provide a mosaic of the bare earth surface digital elevation models (DEMs) for the three Upper Suwannee priority areas of the Florida Three-Area Lidar ARRA Task Order Number G10PD02794. The collective areas of interest are shown

in “Attachment A – Project Description and Diagram” and further delineated in “Attachment B – Shape File(s)”.

- 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 the Defined Project Area, buffered by a minimum of 100 meters. The Project Area is represented in “Attachment A – Project Description and Diagram” and further defined by the ESRI Arc Shape file included as “Attachment B – Shape File(s)”
- C.1.a.(ii) **Nominal Pulse Spacing:** Nominal Pulse Spacing (NPS) shall be no greater than **1.0** 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 control shall be acquired using a registered land surveyor licensed by the state of Florida according to 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 **eighty** (80) additional Ground Control points for the project area which shall be delivered in ESRI Arc Shape format and will be used by the Government for validation.
- (01) **Sixty** (60) check points shall be collected uniformly dispersed over the project area to verify fundamental vertical accuracy.
- Urban
 - Bare earth and low grass
 - Brush lands and low trees
- (02) **Twenty** (20) check points shall be collected uniformly dispersed over the project area to verify supplemental vertical accuracy.
- Supplemental vertical accuracy check point classes should include:
- Hardwood Coniferous -Mixed
 - Upland hardwood forests
 - Mixed Wetland Hardwoods
 - Wetland Forests – Mixed
 - Coniferous Plantations
- C.1.a.(vii)(c) 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.
- C.1.a.(vii)(d) All 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.
- C.1.a.(vii)(e) All checkpoint accuracy shall satisfy a Local Network accuracy of 5-centimeteres at the 95% confidence level.
- C.1.a.(vii)(f) 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 $RMSE_z = 0.30$ feet or 9.25 cm (NSSDA $Accuracy_z 95\% = 0.6$ feet or 18.2 cm) or better; assessment procedures to comply with “*FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix A: Guidance for Aerial Mapping and Surveying*”. Accuracy for the lidar point cloud data shall be reported independently from accuracies of derivative products (i.e., DEMs). Point

cloud data accuracy shall be tested against a Triangulated Irregular Network (TIN) constructed from bare-earth lidar points. Each landcover type representing 10% or more of the total project area shall be tested and reported as a Supplemental Vertical Accuracy (SVA).

- 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 shall be ≤ 7 cm $RMSE_z$ within individual swaths and ≤ 10 cm within swath overlap (between adjacent swaths)
- C.1.a.(xi) **Acquisition Window:** Acquisition window shall remain as the winter/spring 2011 leaf off season between March 1, 2011 and April 15, 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. Reference **Attachment C, Section II**. Data Processing and Handling.
- C.1.a.(xiii) **Overlap:** Flight line overlap of 20% 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 $\Rightarrow (4 * NPS)^2$, measured using 1st-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. Data shall be acquired to minimize the effects of variable water elevations within the project area. Contractor shall seek approval to acquire LiDAR data prior to 72 hours following a rain event of 0.5 inches or greater within the project area. LiDAR data shall not be acquired during high water events and/or recent rain events which may affect the resultant digital elevation model. If weather conditions and/or hydrologic conditions are not acceptable to meet the acquisition window, the Contractor must receive approval before flying.

C.1.a.(xv)(c) **Vegetation:** Leaf-off is preferred. As numerous factors will affect vegetative condition at the time of any collection, this task only requires that penetration to the ground must be adequate to produce an accurate and reliable bare-earth surface.

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: 0.6 feet or 18.2 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSE of 9.25 cm in the “open terrain” land cover category. This is a required accuracy.

C.1.b.(i)(c) **Supplemental Vertical Accuracy (SVA):** 1.19 feet or 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 method. This is a required accuracy.

- C.1.b.(i)(d) **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 method 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 National Geospatial Program (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 (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) 5,000-ft x 5,000-ft 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) Bare earth DEM cell Size shall be 5 feet.
- C.1.c.(iii)(b) Delivery in an industry-standard, GIS-compatible, 32-bit ESRI Float Grid format.
- C.1.c.(iii)(c) Georeference information shall be included in raster file
- C.1.c.(iii)(d) 5,000-ft x 5,000-ft tiled delivery shall be contiguous and without overlap. Tiles shall be suitable for creating seamless data mosaics.
- C.1.c.(iii)(e) DEM tiles within this task will show no edge artifacts or mismatch. Every effort shall be made to eliminate edge artifacts between this task and adjoining tasks. 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 National Digital Elevation Program (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 \leq 0.6 ft or 18.2 cm ACCz, 95% (0.3 ft or 9.25 cm RMSEz)
CVA \leq 36.3 cm, 95th Percentile
SVA \leq 1.19 ft or 36.3 cm, 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.(iii)(k) **Bare Earth Surface DEMs Mosaic:** A mosaic of the bare earth surface, 32-bit floating point ESRI Grid format DEMs shall be provided in MrSID compression at a 1:20 ratio.
- (01) One (1) mosaic each of the individual Areas of Interest (AOIs) comprising the Suwannee River Expansion Task Order.
 - (02) One (1) mosaic for the three contiguous Areas A, B, and C of the Upper Suwannee, Florida Three-Area ARRA LiDAR task, Task Order Number G10PD02794, shall be produced as delineated in Attachment A – Upper Suwannee DEM Mosaic. Additionally, four (4) tiles identified as SPN_ID 59754, 60294, 60834, and 61374 from Area D of the Suwannee River Expansion and contiguous to Area C of the Upper Suwannee, Florida Three-Area, project area shall be included in this Upper Suwannee DEM mosaic.

- 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 Triangulated 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 **5000 feet x 5000 feet** and shall be filled to the tile edge.
- (02) Tiles shall be referenced to the Florida state grid provided in **“Attachment B – Shapefile(s).”**
- (03) Tiled deliverables shall conform to the tiling scheme, without added overlap and without gap.
- (04) Tiling scheme will be used for **all tiled deliverables.**
- (05) Tiled deliverables shall edge-match seamlessly in both the horizontal and vertical.

C.1.d.(i)(b) **Tile Naming Conventions:**

(01) **LiDAR Tiles (LAS)** naming convention shall follow:

LIDYYYY_TILENUMBER_Z.LAS

Where:

LID stands for LiDAR

YYYY is the year

TILENUMBER is the appropriate cell number values found in the 2007 Florida Statewide Index

Z is the appropriate Florida State Plane Zone (N)

Z is the appropriate Florida State Plane Zone (W) *Reference C.1.e. (iv)(b)*

e.g.: LID2011_00279_N.LAS

(02) **Digital Elevation Model (DEM)** naming convention shall follow:

DEMXXXXXX where **XXXXXX** is the tile number in the 2007 Florida Statewide Index, State Plane North Zone and corresponds to the shape file “SPN_ID field.”

Tile numbers containing fewer than **six (6)** digits, shall not contain a leading zero.

- C.1.e. **DATUMS, COORDINATE SYSTEMS, AND UNITS:** Data delivered shall be in the following datum:
- C.1.e.(i) **Horizontal Datum** shall be in NAD83/2007 HARN
 - C.1.e.(ii) **Vertical Datum** shall be in NAVD88; to 2 decimal places
 - C.1.e.(iii) Data should reference the most recent Geoid model approved by the NGS.
 - C.1.e.(iv) **Coordinate Systems:**
 - C.1.e.(iv)(a) **Full project area:** One (1) copy of the data shall be in Florida State Plane North FIPS 0903, U.S Survey Feet
 - C.1.e.(iv)(b) **Area A SPW:** Additionally, one (1) copy of the data, as defined in “Attachment A – Suwannee River Expansion,” shall be in Florida State Plane West FIPS 0902, U.S. Survey Feet

(All references to the Unit of Measure “Feet” or “Foot” must specify either “International” or “U.S. Survey”)
 - C.1.f. **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.g. **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.h. **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.h.(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.i. **CERTIFICATIONS:** The contractor shall certify as part of its proposal that the work performed on this task order complies with Section 52.225-5 of the Federal Acquisition Regulations relating to Trade Agreements.

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

Address: USGS-National Geospatial Technical Operations Center (NGTOC)

ATTN: Gail Dunn, MS 663
1400 Independence Road
Rolla, MO 6540

Telephone: (573) 308-3765
FAX: (573) 308-3810
E-mail: gdunn@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 GS0720 of the Contract. The inspection period begins the day after the data has been delivered. All deliverables will be validated within a sixty (60) calendar-day of the inspection period

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

E.3. **Nonconforming deliverables:** Nonconforming deliverables returned to contractor for rework shall be delivered in accordance with Contract clause E784.

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

- F.1. **Place of Delivery:** Reference 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 F981 of the Contract. The Government requires the following delivery schedule:
- F.2.a. **Lot One (1):** Lidar acquisition to be completed by **April 15, 2011**, weather and ground conditions permitting.
- F.2.b. **Lot Two (2): Area A and Area A SPW,** consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics 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 15, 2011.**
- F.2.c. **Lot Three (3): Area D,** consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **60 days following completion of data acquisition, but in no case later than June 15, 2011.**
- F.2.d. **Lot Four (4): Area B,** consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **90 days following completion of data acquisition, but in no case later than July 15, 2011.**
- F.2.e. **Lot Five (5): Area C,** consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **120 days following completion of data acquisition, but in no case later than August 15, 2011.**
- F.2.f. **Lot Six (6):** The **Upper Suwannee bare earth DEM mosaic**, as specified in the task order, shall be delivered no later than **150 days following completion of data acquisition, but in no case later than September 15, 2011.**
- F.3. **Negotiated Delivery Date(s)** for Task Order:
- F.3.a. **Lot One (1):** Lidar acquisition to be completed by April 15, 2011, weather and ground conditions permitting.

- F.3.b. Lot Two (2): Area A and Area A SPW**, consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics 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 15, 2011.**
- F.3.c. Lot Three (3): Area D**, consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **60 days following completion of data acquisition, but in no case later than June 15, 2011.**
- F.3.d. Lot Four (4): Area B**, consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **90 days following completion of data acquisition, but in no case later than July 15, 2011.**
- F.3.e. Lot Five (5): Area C**, consisting of all required deliverables (including metadata) of the lidar data and its derived products, and the bare earth DEM mosaics as specified in the task order, shall be delivered no later than **120 days following completion of data acquisition, but in no case later than August 15, 2011.**
- F.3.f. Lot Six (6): The Upper Suwannee bare earth DEM mosaic**, as specified in the task order, shall be delivered no later than **150 days following completion of data acquisition, but in no case later than September 15, 2011.**
- F.4. NOTE: Areas may be substituted in order of delivery.
- F.5. **Progress Reports:** Contractor shall submit a monthly progress report for this task order in accordance with Contract clause GS0931 and GS0938.

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 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.

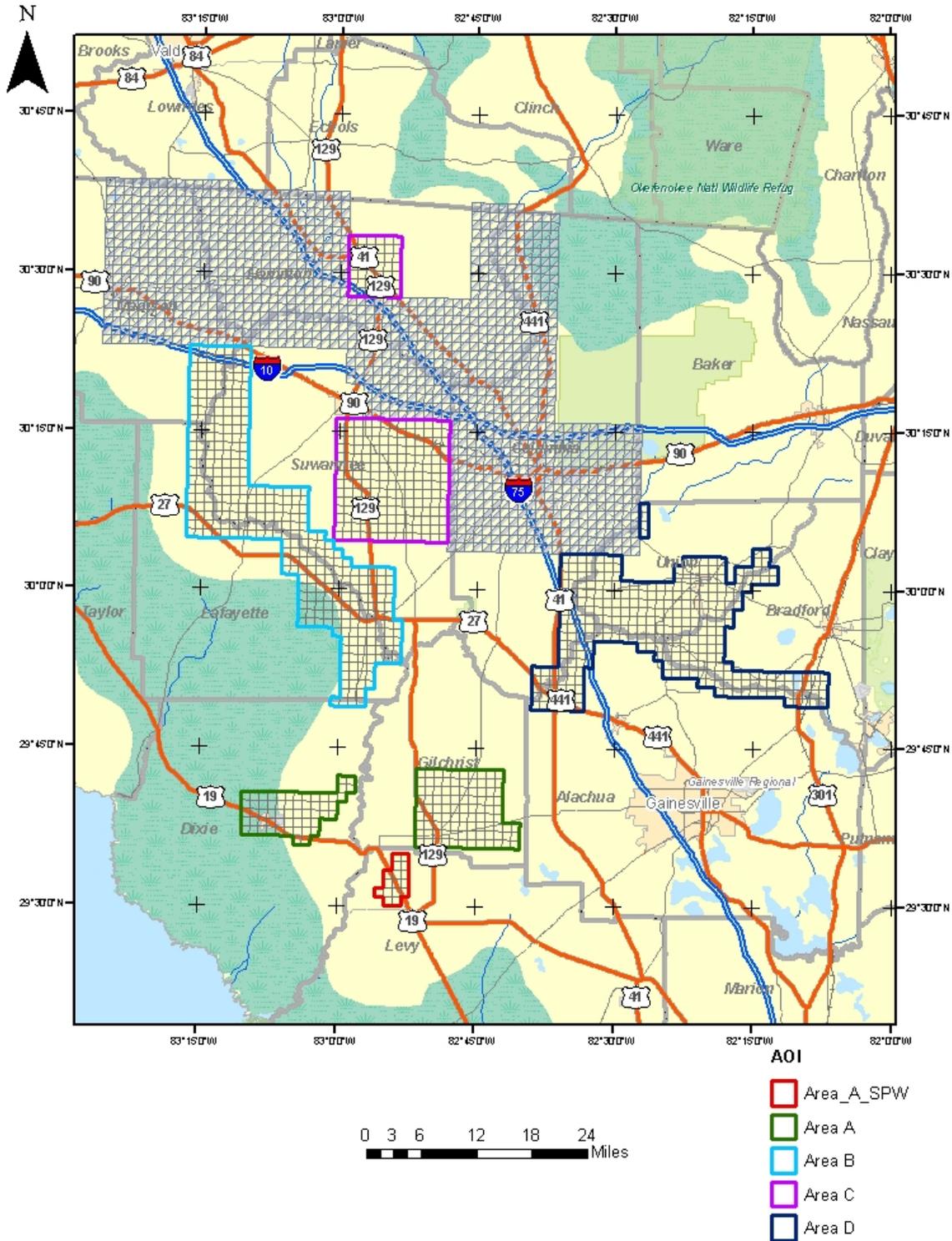
SECTION J: - LIST OF ATTACHMENTS TO THIS TASK ORDER

J.1.	Attachment A -	Project Area Description	1 Page
J.2.	Attachment B -	Shape file	1 Page
J.3.	Attachment C –	<i>U.S. Geological Survey-National Geospatial Program Lidar Guidelines and Base Specification v13(ILMF).pdf</i>	18 Pages
J.4.	Attachment D –	<i>FEMA Procedure Memorandum No. 61 – Standards for Lidar and Other High Quality Digital Topography</i>	26 Pages

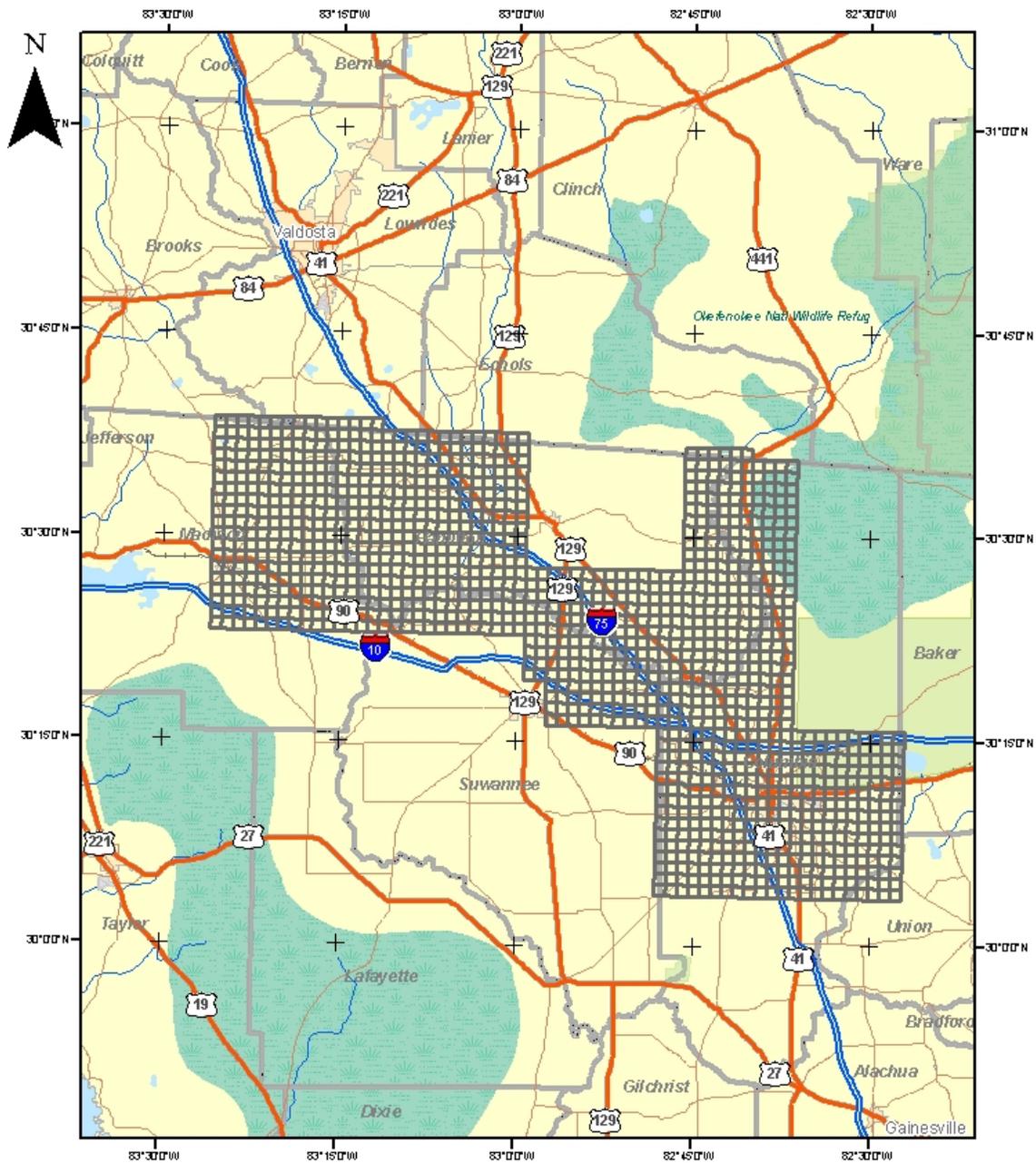
Suwannee River Expansion 1.0 Meter – Project Description and Diagram

The Suwannee River Expansion 1.0 Meter Lidar Task includes the acquisition and processing of lidar based on the “*U.S. Geological Survey National Geospatial Program Base Lidar Specification, Version 13*” with a few variations.

Suwannee River Expansion (SRE) 1.0-m NPS LiDAR



Upper Suwannee DEM Mosaic



AOI

- Upper_Suwannee_A
- Upper_Suwannee_B
- Upper_Suwannee_C



END "ATTACHMENT A"

Suwannee River Expansion 1.0 Meter Lidar – Project Shape Files

THIS SECTION CONSISTS OF THE FOLLOWING DATA SET(S)

Suwannee_River_Expansion.zip

Upper_Suwannee_3_Priority_Areas.zip

END “ATTACHMENT B”

THIS SECTION CONSISTS OF THE FOLLOWING DOCUMENT:

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

END “ATTACHMENT C”

THIS SECTION CONSISTS OF THE FOLLOWING DOCUMENT:

FEMA61 - pdf

END “ATTACHMENT D”