

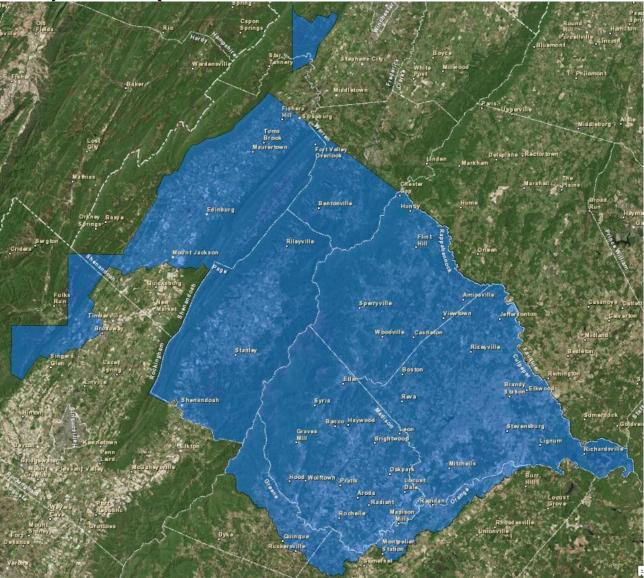
Delivery Lot Summary Report: Delivery Lot 6

November 25, 2014

USGS Contract: G10PC00026 USGS Task Order: G13PD00377/G13PD00874 Task Order Name: Shenandoah, VA LiDAR / Multi-Hazards Shenandoah, VA LiDAR **Contractor: Photo Science, A Quantum Spatial Company**

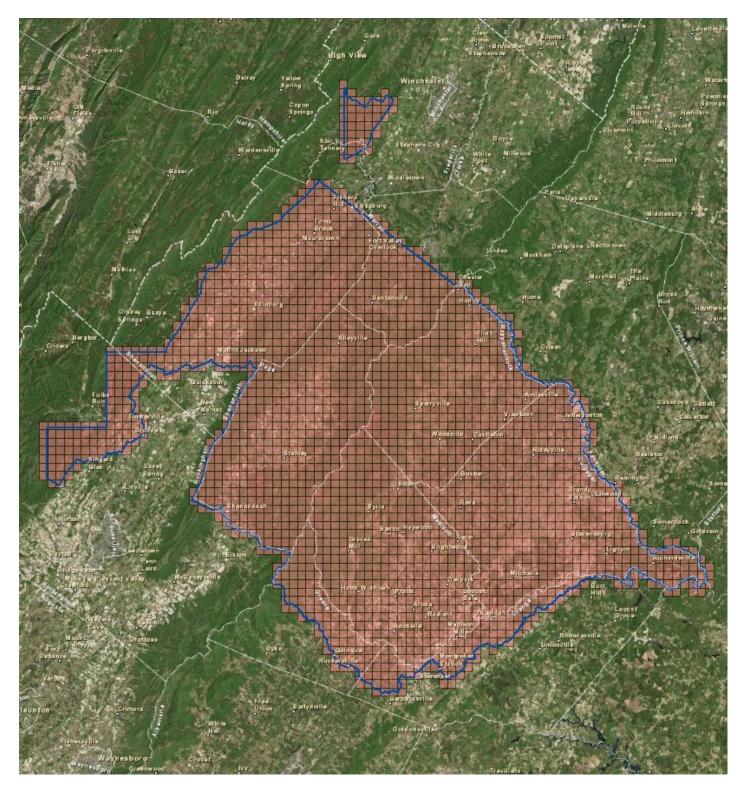
The following is a summary description of the deliverables and other pertinent information that comprise the shipment of Delivery Lot 6 to USGS on November 25, 2014.

Delivery Lot 6 AOI Map:



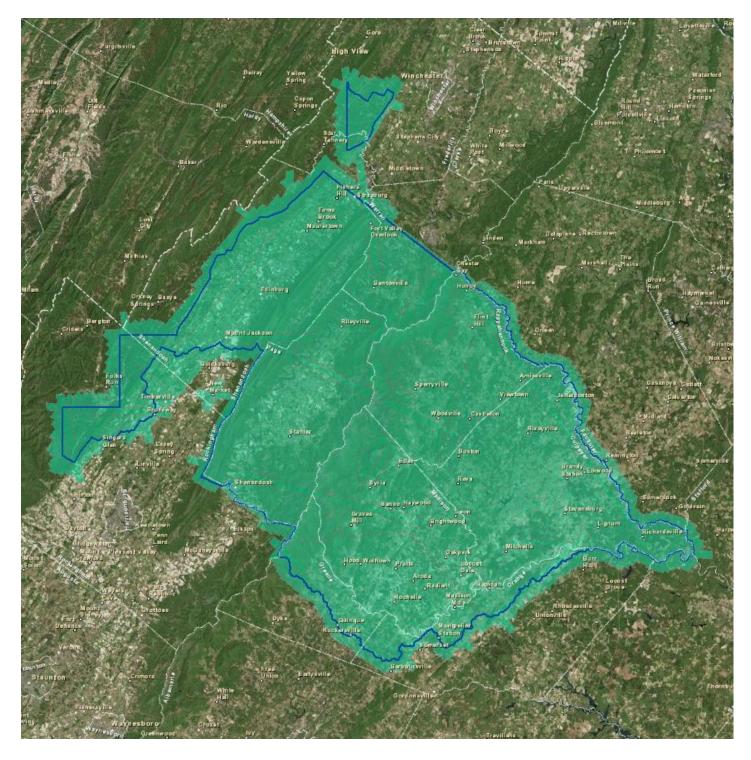


Delivery Lot 6 Tile Map:





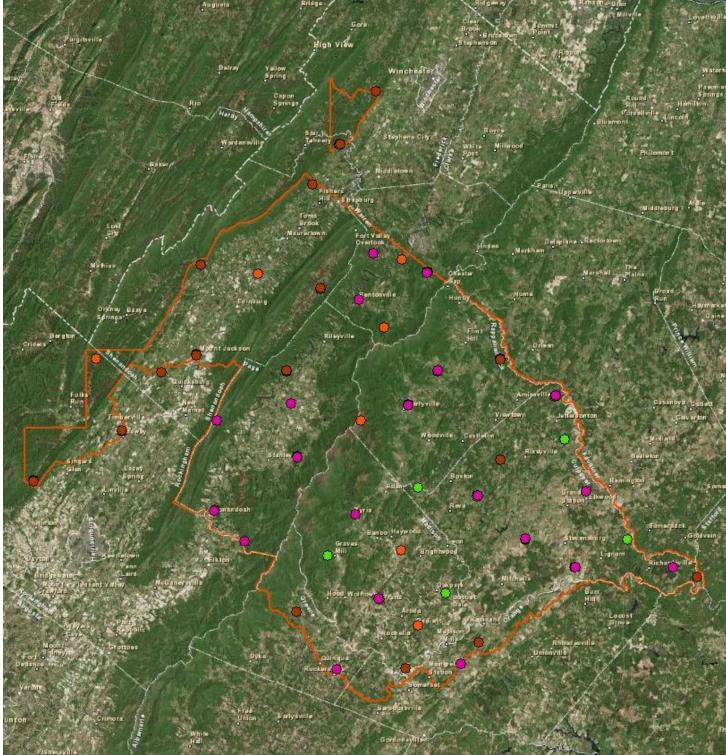
Lot 6 Raw Point Cloud Map:





quantumspatial

Lot 6 QA Control Points Map:





Task Order Spatial Reference System:

- Horizontal: Virginia North SPCS, NAD83 (2011), Zone: 4501, US Feet
- Vertical: NAVD88, GEOID12a, US Feet

Deliverables Summary:

- 1. C.1.d.(i) Raw Point Cloud Data (Uncalibrated and unclassified): Included
 - LAS v1.2, Point Record Format 1
 - Total Number of Swath Files: 310
 - Total File Size: 669 GB (718,541,660,160 bytes)
 - Individual Swath Outline Shape File
- 2. C.1.d. (i) Unclassified Point Cloud Data (Calibrated and control adjusted): Included
 - LAS v1.2, Point Record Format 1 including File Source ID w/assigned value of 65,535
 - Classification Schema:
 - (01) Code 0 Processed, never classified
 - Total Number of Tiles: 2,333
 - Tile Dimensions: 5,000' x 5,000'
 - Total File Size: 870 GB (934,964,158,464 bytes)
- 3. C.1.d.(ii) Classified Point Cloud: Included
 - LAS v1.2, Point Record Format 1 including File Source ID w/assigned value of 65,535
 - Classification Schema:
 - (01) Code 1 Processed, but unclassified
 - (02) Code 2 Bare-earth ground
 - (03) Code 7 Noise
 - (04) Code 9 Water
 - (05) Code 10 Ignored Ground (Breakline Proximity)
 - (06) Code 17 Overlap Default
 - (07) Code 18 Overlap Ground
 - (08) Code 25 Overlap Water
 - Total Number of Tiles: 2,333
 - Tile Dimensions: 5,000' x 5,000'
 - Total File Size: 870 GB (934,963,941,376 bytes)
 - Delivery Lot 6 Tile Shape Files (Lot 6 Boundary & Lot 6 Individual Tiles)

4. C.1.d.(iii) Bare Earth Surface (Raster DEM): Included

- Format: ERDAS .IMG
- Resolution: 2.5 feet grid cell size
- Hydro Conditioning: Hydro Flattened
- Total Number of Tiles: 2,333
- Tile Dimensions: 5,000' x 5,000' (same used for Classified Point Cloud)
- Total File Size: 34.0 GB (36,589,201,079 bytes)



- 5. C.1.d.(iv) Control:
 - Delivery Lot 6 QA Control Check Point Location Shape File Extract: Included
 - Delivery Lot 6 Supplemental Calibration Control Point Location Shape File Extract: Included
- 6. C.1.d.(v) LiDAR Intensity Image: Included
 - Format: Grayscale, 8-bit, GeoTiff
 - Resolution: 2.5 feet grid cell size
 - Total Number of Tiles: 2,333
 - Tile Dimensions: 5,000' x 5,000' (same used for Classified Point Cloud)
 - Total File Size: 12.2 GB (13,129,900,032 bytes)
- 7. C.1.d.(vi) Breaklines: Included
 - Format: ESRI Shape File (.shp)
 - Coverage: Lot 6 Continuous, Non-Tiled
 - Total File Size: 3.21 MB (3,371,008 bytes)
- 8. C.1.d. (vii) Contours: Included
 - Format: ESRI File Geodatabase (.gdb)
 - Coverage: Lot 6 Continuous, Non-Tiled
 - Total File Size: 15.2 GB (16,330,878,976 bytes)
- 9. C.1.d.(viii) Metadata: Included
 - Format: FGDC compliant, XML
 - File Types: Project, Lift, Tiled deliverable product group (classified .las, DEM, & Intensity)
- 10. C.1.d.(ix) Project Report:
 - Delivery Lot Summary Report: Lot 6 Included
 - Overall Project Report: Included
- 11. Lot 6 QA & Accuracy Reporting
 - FOCUS Report: Included
 - Lot 6 Provisional FVA/SVA/CVA Testing Results: .xls file Included
 - LAS Analysis (Excel File): Included
 - Raster Analysis (Excel File): Included

Lot 6 Provisional Accuracy Reporting:

- Number of QA Check Points falling within Delivery Lot 6 by Tested Land Cover Type:
 - Bare Earth (BE): 28
 - Forested (FO): 28
 - Tall Weeds (TW): 24
 - Urban (UA): 20
- Testing:

FVA, SVA, CVA

	Count	Minimum	Maximum	St. Dev	RMSE	95%	95th	Mean	Median	Skew
SVA	54	-0.120	1.030	0.266	0.333	-	0.768	0.20	0.14	1.36
CVA	100	-0.390	1.030	0.249	0.283	-	0.611	0.14	0.09	1.16
Bare Earth & Low Grass (FVA)	28	-0.390	0.320	0.156	0.153	0.301	-	-0.01	0.01	-0.40
High Grass, Weeds, and Crops	24	-0.070	1.030	0.317	0.473	-	0.894	0.36	0.28	0.49
Forested, fully covered by trees	28	-0.280	0.610	0.195	0.249	-	0.491	0.16	0.17	0.11
Urban Areas	20	-0.120	0.280	0.098	0.107	-	0.185	0.05	0.06	0.36

Delivery Lot Notes/Comments: