

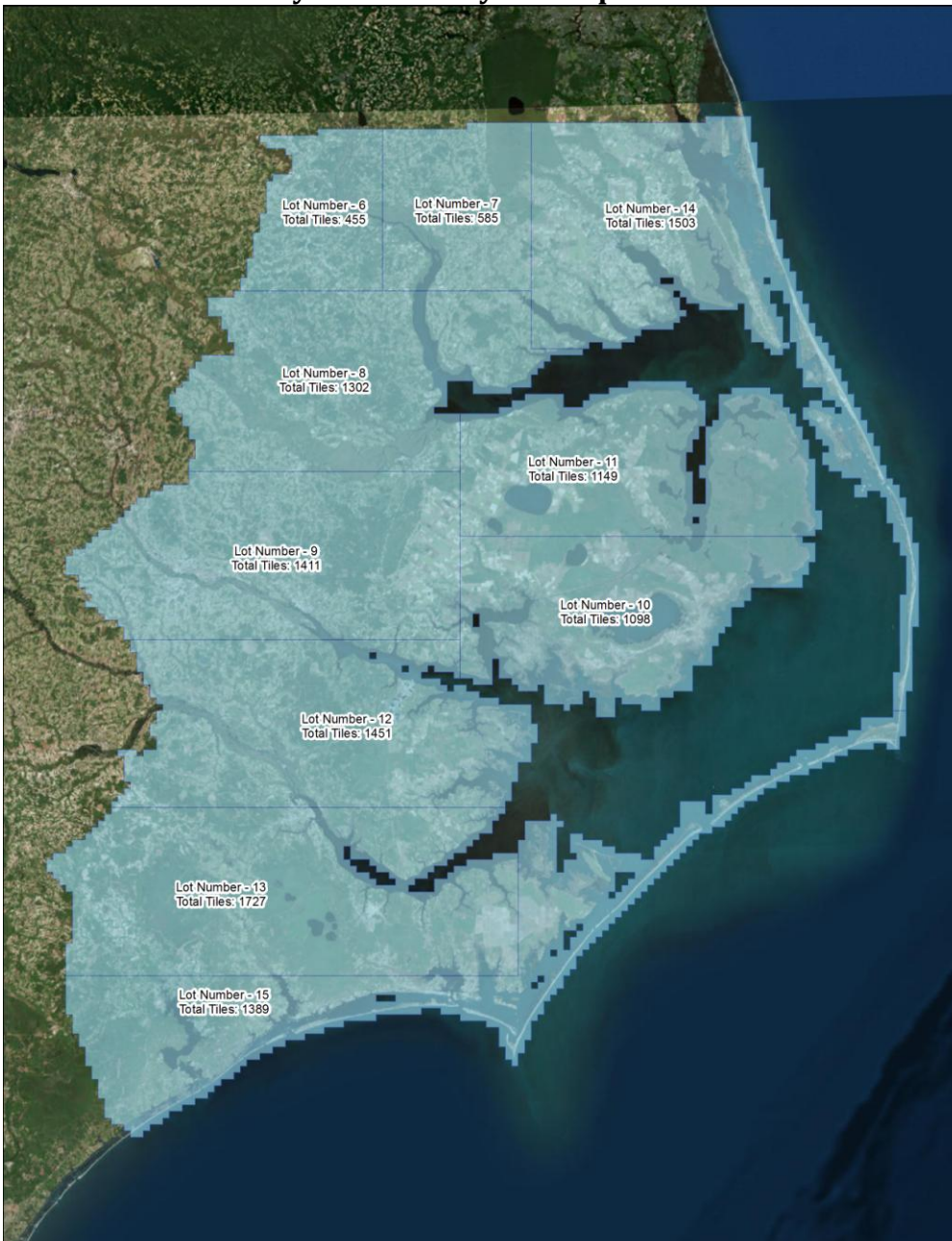


Delivery Lot Summary Report: Delivery Lot 12 September 22, 2014

USGS Contract: G10PC00026
USGS Task Order: G14PD00182
Task Order Name: North Carolina - Sandy LiDAR
Contractor: Photo Science, A Quantum Spatial Company

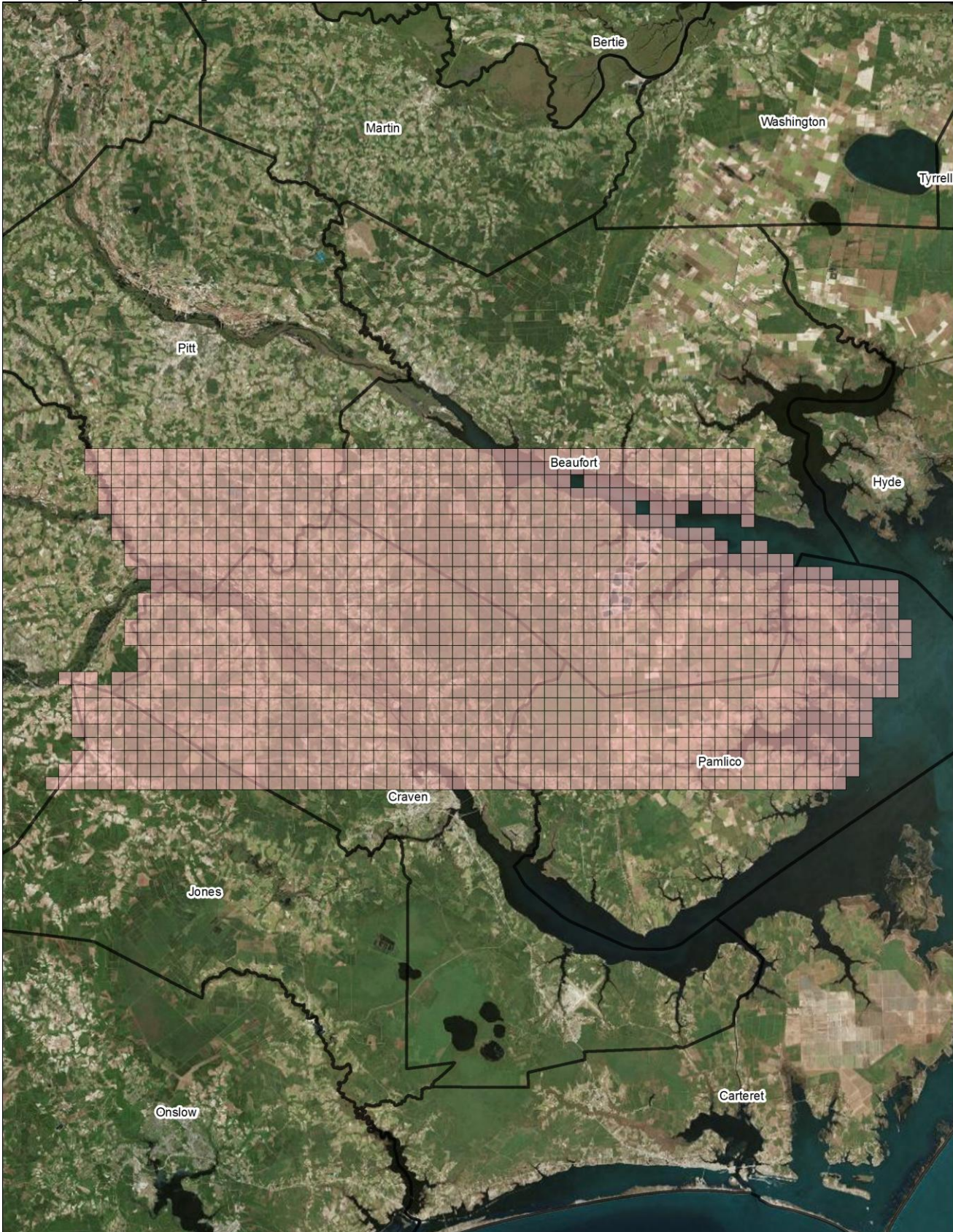
The following is a summary description of the deliverables and other pertinent information that comprise the shipment of Delivery Lot 12 to USGS on September 22, 2014.

Task Order 20 County AOI Delivery Lot Map:



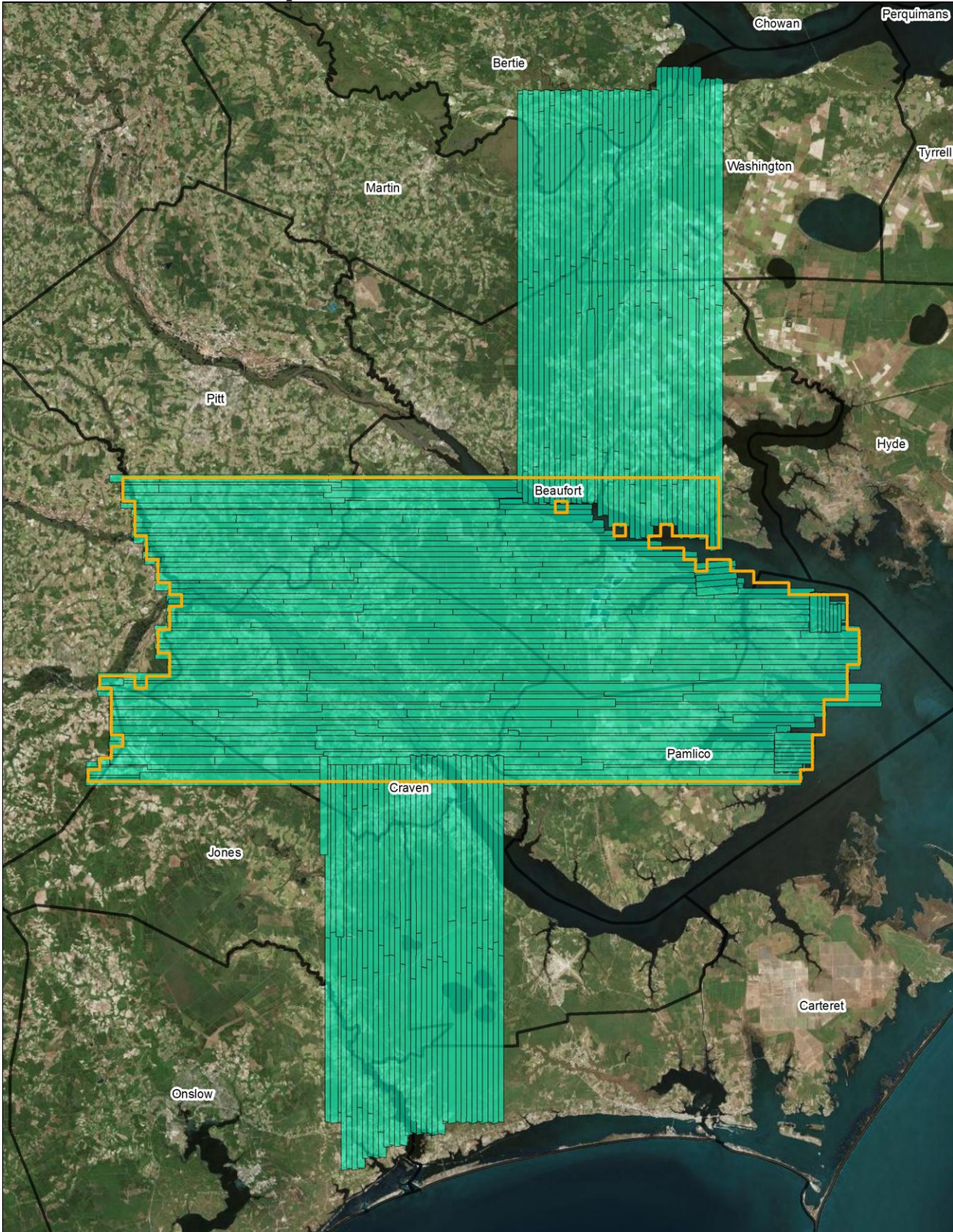


Delivery Lot 12 Map:



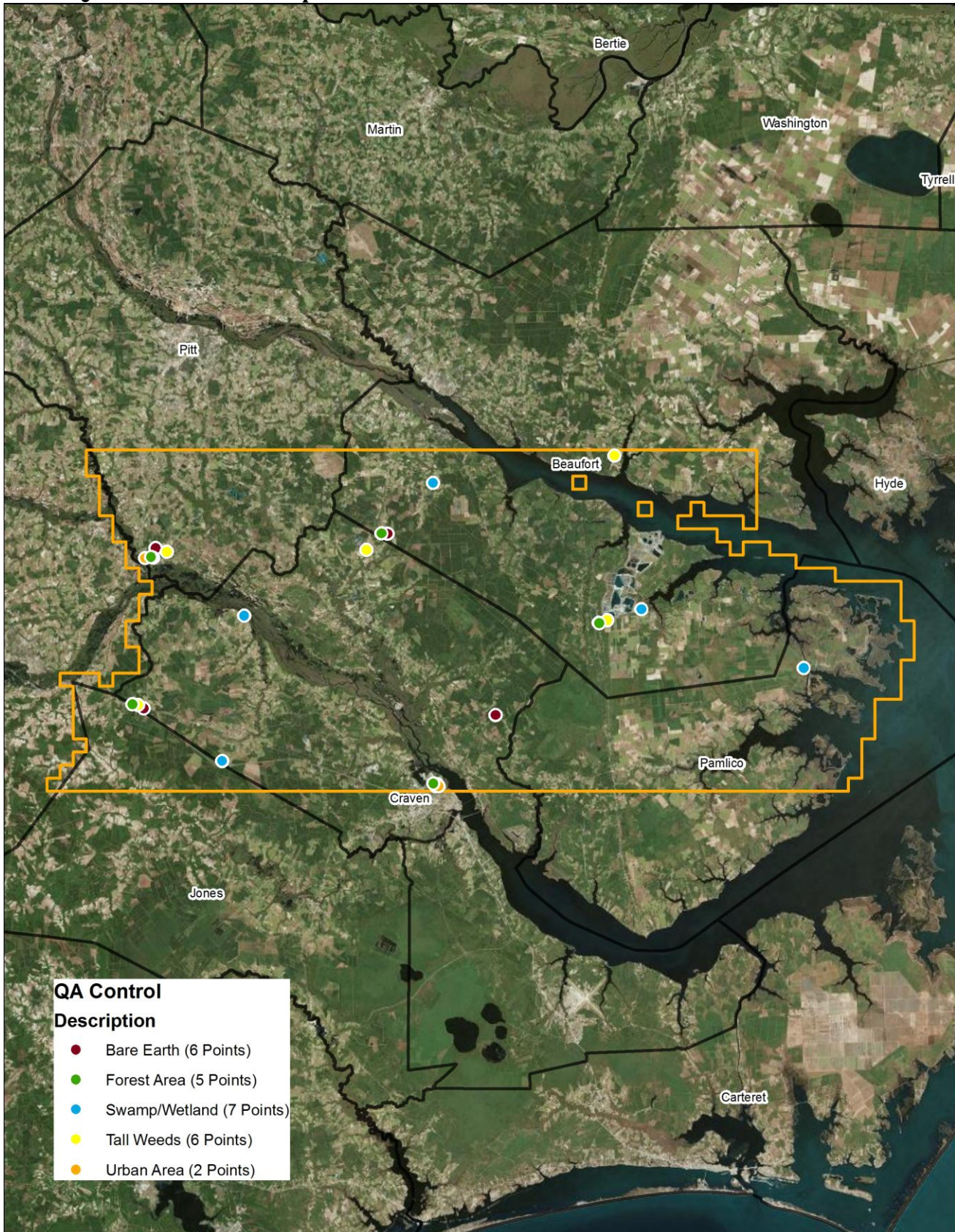


Lot 12 Raw Point Cloud Map:





Lot 12 QA Control Points Map:



**Task Order Spatial Reference System:**

- Horizontal: North Carolina SPCS, NAD83 (2011), Zone: 3200, US Feet
- Vertical: NAVD88, GEOID12a, US Feet

Deliverables Summary:

1. C.1.d.(i) Raw Point Cloud Data (calibrated and control adjusted): Included
 - LAS v1.3, Point Record Format 3
 - Total Number of Swath Files: 461
 - Total File Size: 840 GB (902,821,892,096 bytes)
 - Individual Swath Outline Shape File
2. C.1.d.(ii) Classified Point Cloud: Included
 - LAS v1.3, Point Record Format 3 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: 1,451
 - Tile Dimensions: 5,000' x 5,000'
 - Total File Size: 433 GB (465,777,041,408 bytes)
 - Delivery Lot 12 Tile Shape Files (Lot 12 Boundary & Lot 12 Individual Tiles)
3. C.1.d.(iii) Bare Earth Surface (Raster DEM): Included
 - Format: ERDAS .IMG
 - Resolution: 5 feet grid cell size
 - Hydro Conditioning: Hydro Flattened
 - Total Number of Tiles: 1,451
 - Tile Dimensions: 5,000' x 5,000' (same used for Classified Point Cloud)
 - Total File Size: 5.68 GB (6,109,708,288 bytes)
4. C.1.d.(iv) Control:
 - Complete Control Report dated June 13, 2014 containing published values and shape files for supplemental & QA check points previously delivered to M. Duncan, USGS NGTOC
 - Delivery Lot 12 QA Control Check Point Location Shape File Extract: Included
 - Deliver Lot 12 QA Control Check Point Published Values Extract .xls file: Included
5. C.1.d.(v) LiDAR Intensity Image: Included
 - Format: Grayscale, 8-bit, GeoTiff
 - Resolution: 5 feet grid cell size
 - Total Number of Tiles: 1,451
 - Tile Dimensions: 5,000' x 5,000' (same used for Classified Point Cloud)



- Total File Size: 1.93 GB (2,080,223,232 bytes)
6. C.1.d.(vi) Breaklines: Included
 - Format: esri File Geodatabase (.gdb)
 - Coverage: Lot 12 Continuous, Non-Tiled
 - Total File Size: 2.11 MB (2,220,032 bytes)
 7. C.1.d.(vii) Metadata: Included
 - Format: FGDC compliant, XML
 - File Types: Project, Lift, Tiled deliverable product group (classified .las, DEM, & Intensity)
 8. C.1.d.(viii) Project Report:
 - Delivery Lot Summary Report: Lot 12 Included
 - Overall Project Report: To Be Delivered upon final acceptance of all Delivery Lots.
 9. Lot 12 QA & Accuracy Reporting
 - FOCUS Report: Included
 - Lot 12 Provisional FVA/SVA/CVA Testing Results: .xls file Included
 - LAS Analysis (Excel File): Included
 - Raster Analysis (Excel File): Included

Lot 12 Provisional Accuracy Reporting:

- Number of QA Check Points falling within Delivery Lot 12 by Tested Land Cover Type:
 - Bare Earth (BE): 6
 - Forested (FO): 5
 - Swamp/Wetland (SW): 7
 - Tall Weeds (TW): 6
 - Urban (UA): 2
- Testing:

Raw FVA

	Count	Minimum	Maximum	St. Dev	RMSE	95%	95th	Mean	Median	Skew
RAW FVA	6	-0.300	0.160	0.159	0.147	0.289	-	-0.02	-0.02	-0.93

FVA, SVA, CVA

	Count	Minimum	Maximum	St. Dev	RMSE	95%	95th	Mean	Median	Skew
SVA	20	-0.088	0.577	0.224	0.319	-	0.571	0.23	0.19	0.19
CVA	26	-0.232	0.577	0.234	0.289	-	0.558	0.18	0.16	0.30
Bare Earth (FVA)	6	-0.232	0.178	0.164	0.150	0.294	-	-0.01	-0.03	0.07
Tall Weeds	6	0.118	0.486	0.145	0.285	-	0.458	0.25	0.19	1.03
Forested	5	0.029	0.577	0.210	0.377	-	0.555	0.33	0.29	-0.37
Urban	2	0.069	0.084	0.010	0.077	-	0.083	0.08	0.08	#DIV/0!
Swamp/Wetland	7	-0.088	0.571	0.308	0.345	-	0.555	0.19	-0.03	0.39



Delivery Lot Notes/Comments:

Delivery Lot 12 reflects the telephone and email dialogue between USGS (M. Duncan & QA Team) and Photo Science (M.Shillenn/A. Pike) regarding the modification to Delivery Lot shipment contents and supporting information provided by Photo Science on an incremental delivery lot basis in order to better support incremental QA review by USGS. Delivery Lot 12 also includes recent agreement between USGS and Photo Science on the population of the file source ID for classified tiled .las file using a numeric value of "65,535". All task order classified .las tiles file source ID will be populated with this numeric value.