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| New York Great Lakes:Cayuga, Wayne, Oswego, Jefferson and Saint Lawrence CountiesDelivery ReportDelivery Report Produced for USGS |
| Report Date: 12/01/2015 |
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**NY Great Lakes LiDAR –Deliverables Overview Checklist**

[x]  **Raw Point Cloud Data**

 [x]  LAS version 1.2

 [x]  Georeferenced

[x]  GPS Times are included

[x]  Intensity values are included

[x]  Full swaths

[x]  1 file per swath, 1 swath per file

[x]  **Classified Point Cloud Data**

 [x]  LAS Version 1.2

 [x]  Correct Georeference Information

 [x]  Contains GPS Times

 [x]  Contains Intensity Values

 [x]  Tile to 1500m x 1500m Tile Grid

 [x]  Classified with class 1 – Unclassified, class 2 – Bare-Earth Ground, 7 – Noise, 9 –

 Water, 10-Ignored Ground, 11- Withheld

[x]  **Bare Earth Surface (Raster DEM)**

[x]  Cell size of 1m

[x]  IMG File format

[x]  Georeferenced

 [x]  Tiled with no overlap

 [x]  Reviewed for edge-matching and artifacts

 [x]  Free of void areas

 [x]  Hydrographic features have been flattened according to SOW

[x]  **Survey Data**

 [x]  Surveyed Quality Check point report, photos, and coordinate listing

 [x]  Check points as a shapefile

[x]  **Metadata**

 [x]  FGDC Compliant metadata for:

[x]  Deliverables (Lift Data, LAS, Bare Earth DEM, Breaklines, Intensity Imagery and Project)

[x]  **Project Reports**

 [x]  Collection Report detailing mission planning, flight logs, acquisition, and calibration

 [x]  Control Points used by Acquisition Partner are listed

 [x]  Processing report

 [x]  QA/QC Reports

[x]  **Extents**

 [x]  Tile grid in Shapefile format derived from the LiDAR Deliverable

 [x]  Project Boundary delivered as shapefile

 [x]  Tile grid, 1500m x 1500m, named according to USNG naming conventions and in Shapefile format

[x]  **Breakline Data**

[x]  3D Breakline Data for Ponds and Lakes, Streams and Rivers, and Bridge Breaklines in GDB and shapefile

 format

[x]  **Intensity Imagery**

[x]  Intensity imagery in GeoTIFF format with 1 m pixel size

# Raw Point Cloud Data

Raw swaths for this delivery (Cayuga, Wayne, Oswego, Jefferson and St. Lawrence Counties) have been provided. The Raw Point Cloud Data is delivered in LAS v1.2 with all required header information including: Georeference information, GPS times, and Intensity Values

# Classified Point Cloud

Classified point cloud data has been delivered tiled to 1500m x 1500m tiles and named according to US National Grid Standards. This delivery consists of 2344 LiDAR tiles. The tiles have been delivered in LAS format. One tile in the final tile grid do not have an associated LAS file. Tile 18TVP8580980 was an area that the acquisition provider was unable to collect due to restricted airspace limitations (documented in the project project).

# Bare Earth Surface (Raster DEM)

A total of 2345 1500m x 1500m tiled bare earth raster DEMs in IMG format have been delivered for this project. All tiles have a cell size of 1 m and have been reviewed to ensure that they meet the project required specifications.

# Survey Data

All survey control data, reports and photos have been included in this delivery for the full project. Accuracy assessment points have been provided in ESRI shapefile format.

# Metadata

Project level metadata for each of the deliverables (Swath Data, LAS, Bare Earth DEM, Breaklines, Intensity Imagery, and Project) is included in XML format. Metadata was reviewed through the USGS metaparser tool to ensure that it is FGDC compliant.

# Project Report

A comprehensive project report has been provided in PDF format as part of the final delivery for the full project. This report includes the LiDAR acquisition and processing information along with detailed information on the production and quality control process used for the development of all deliverables.

# Extents

Three ESRI shapefiles are included with this delivery. One shapefile is the boundary of the delivery area. The second shapefile is the tile grid of the delivered tiles, extracted from the tile grid that meets the 1500m x 1500m tile grid specifications. The third shapefile is derived from the extents of the actual LAS deliverable to ensure that all delivered LiDAR for this project have been accounted for. The extents have been verified against the project boundary to ensure that there is full coverage.

# Breakline Data

3D breaklines identifying ponds and lakes, streams and rivers, and bridge breaklines have been delivered in an ESRI GDB and shapefile format. All breaklines and polygons were derived to meet the project specifications as outlined in the SOW.

# Intensity Imagery

Intensity imagery is delivered tiled to 1500m x 1500m tiles that are named according to the final tile USNG name tile grid. The imagery is in GeoTIFF format with 1 meter pixel size. The intensity imagery is created from the first returns of the full point cloud LiDAR data. The project delivery consists of 2345 GeoTIFF tiles.

# Contour data

Contour data for this delivery area will be shipped next week.

# Other Comments

All data was delivered on one hard drive.