

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

2019 - 2020 USGS Lidar: Matanuska - Susitna Borough, AK

1.2. Summary description of the data:

Dataset Description: The Matanuska - Susitna Borough 3DEP LiDAR project called for the planning, acquisition, and processing of LiDAR data collected at an aggregate nominal pulse spacing (ANPS) of 0.71 meters. Project specifications are based on the U.S. Geological Survey National Geospatial Program Base LiDAR Specification, Version 1.3. The data was developed based on the NAD83 horizontal datum and NAVD88 (GEOID12B) vertical datum. Data was projected in Alaska State Plane Zone 4. All units are in US Survey Feet. LiDAR data was delivered as processed Classified LAS 1.4 files, formatted to 4236 individual 3,000 ft x 3,000 ft tiles.

Product: Classified LAS 1.4 files formatted to 4236 3,000 ft x 3,000 ft tiles for the Matanuska - Susitna 3DEP Project Area.

Delivery 1/B1: (Work Unit 180695) - 3745 tiles

Delivery 2/B2: (Work Unit 213376) - 491 tiles

Geographic Extent: This dataset and derived products encompass an area covering approximately 1099 square miles in south west Alaska.

Delivery 1/B1: (Work Unit 180695) - 951 square miles

Delivery 2/B2: (Work Unit 213376) - 148 square miles

Derived products include: tiled Intensity Imagery, tiled DZ orthos, tiled bare earth DEMs and shaded relief rasters, tiled Highest Hit Digital Surface Models and shaded relief rasters, tiled 1 ft contour shapefiles, 2D building footprints, and 3D waters edge breaklines.

Ground Conditions:

Delivery 1/B1: (Work Unit 180695)

LiDAR was collected in summer 2019, while the presence of snow on the ground was at

a minimum and rivers were at or below normal levels. In order to post process the LiDAR data to meet task order specifications and meet ASPRS vertical accuracy guidelines, McClintock and Associates established a total of 57 ground control points distributed throughout the Matanuska - Susitna Borough 3DEP, Alaska project area. LiDAR data was calibrated to these known ground locations. An additional 93 independent accuracy checkpoints, 52 in Bare Earth and Urban landcovers (NVA points) and 41 in Tall Grass, Tundra and Shrub categories (VVA points), were used to assess the vertical accuracy of the project data. These checkpoints were not used to calibrate or post process the data.

Delivery 2/B2: (Work Unit 213376)

Lidar was collected in summers of 2019 and 2020, while the presence of snow on the ground was at a minimum and rivers were at or below normal levels. In order to post process the lidar data to meet task order specifications and meet ASPRS vertical accuracy guidelines, McClintock Land Associates established a total of 13 ground control points distributed throughout the Matanuska - Susitna Borough 3DEP, Alaska project area. Lidar data was calibrated to these known ground locations. An additional 34 independent accuracy checkpoints, 25 in Bare Earth and Urban landcovers (NVA points) and 9 in Tall Grass, Forest and Shrub categories (VVA points), were used to assess the vertical accuracy of the project data. These checkpoints were not used to calibrate or post process the data.

This metadata record supports the data entry in the NOAA Digital Coast Data Access Viewer (DAV). For this data set, the DAV is leveraging the Entwine Point Tiles (EPT) hosted by USGS on Amazon Web Services.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2019-09-13 to 2019-10-07, 2019-09-13, 2019-09-17, 2020-06-25, 2020-08-29

1.5. Actual or planned geographic coverage of the data:

W: -150.479683, E: -146.957574, N: 62.030171, S: 61.200404

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Model (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:**2. Point of Contact for this Data Management Plan (author or maintainer)****2.1. Name:**

NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:

coastal.info@noaa.gov

2.5. Phone number:

(843) 740-1202

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:**3.2. Title:**

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

Yes

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

Unknown

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

The NOAA Office for Coastal Management (OCM) ingested references to the USGS

Entwine Point Tile (EPT) files hosted on Amazon Web Services (AWS) into the Digital Coast Data Access Viewer (DAV). The DAV accesses the point cloud as it resides on AWS under the usgs-lidar-public-container.

Process Steps:

- 2020-01-08 00:00:00 - LiDAR Pre-Processing: 1. Review flight lines and data to ensure complete coverage of the study area and positional accuracy of the laser points. 2. Resolve kinematic corrections for aircraft position data using kinematic aircraft GPS and static ground GPS data. 3. Develop a smoothed best estimate of trajectory (SBET) file that blends post-processed aircraft position with sensor head position and attitude recorded throughout the survey. 4. Calculate laser point position by associating SBET position to each laser point return time, scan angle, intensity, etc. Create raw laser point cloud data for the entire survey in *.las format. Convert data to orthometric elevations by applying a geoid correction. 5. Import raw laser points into manageable blocks to perform manual relative accuracy calibration and filter erroneous points. Classify ground points for individual flight lines. 6. Using ground classified points per each flight line, test the relative accuracy. Perform automated line-to-line calibrations for system attitude parameters (pitch, roll, heading), mirror flex (scale) and GPS/IMU drift. Calculate calibrations on ground classified points from paired flight lines and apply results to all points in a flight line. Use every flight line for relative accuracy calibration. 7. Adjust the point cloud by comparing ground classified points to supplemental ground control points. 8. Single swath nominal pulse spacing (NPS) was designed to be 0.50 meters at nadir. Aggregate Nominal Pulse Spacing (ANPS) was calculated to be 3.76 meters for the pilot dataset using all valid first return points.
- 2020-01-08 00:00:00 - LiDAR Post-Processing: 1. Classify data to ground and other client designated classifications using proprietary classification algorithms. 2. Manually QC data classification 3. After completion of classification and final QC approval, calculate final NVA for the project using ground control quality check points.
- Original point clouds in LAS/LAZ format were restructured as Entwine Point Tiles and stored on Amazon Web Services. The data were re-projected horizontally to WGS84 web mercator (EPSG 3857) and the vertical units were converted to meters (NAVD88 Geoid12B).
- 2023-06-21 00:00:00 - The NOAA Office for Coastal Management (OCM) created references to the Entwine Point Tile (EPT) files that were ingested into the NOAA Digital Coast Data Access Viewer (DAV). No changes were made to the data. The DAV will access the point cloud as it resides on Amazon Web Services (AWS) under the usgs-lidar-public container. These are the AWS URLs being accessed: https://s3-us-west-2.amazonaws.com/usgs-lidar-public/AK_MatSuBorough_B1_2019/ept.json
https://s3-us-west-2.amazonaws.com/usgs-lidar-public/AK_MatSuBorough_B2_2019/ept.json

5.1.1. If data at different stages of the workflow, or products derived from these

data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 5.2. Quality control procedures employed
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.4. Approximate delay between data collection and dissemination
- 8.3. Approximate delay between data collection and submission to an archive facility

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

<https://www.fisheries.noaa.gov/inport/item/70176>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

Yes

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:

<https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=9850/details/9850>

https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/AK_MatSuBorough_2019

7.3. Data access methods or services offered:

Data is available online for bulk and custom downloads.

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

NCEI_CO

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

Data is backed up to tape and to cloud storage.

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.