

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:

2018 AK DGGS Lidar: Turnagain Pass, Alaska

### 1.2. Summary description of the data:

The State of Alaska Division of Geological & Geophysical Surveys (DGGS) used lidar to produce a digital terrain model (DTM) and digital surface model (DSM) of Turnagain Pass, southcentral Alaska, during snow-free ground conditions. This dataset includes point cloud data, a 32-bit digital terrain model and digital surface model, and an intensity image covering Turnagain Pass located southeast of Anchorage within the Chugach National Forest on the Kenai Peninsula in southcentral Alaska. The lidar and Global Navigation Satellite System (GNSS) data were collected on September 2, 2018, and processed using Terrasolid. This data collection is released as a Raw Data File with an open end-user license. All files can be downloaded free of charge from the Alaska Division of Geological & Geophysical Surveys website (<http://doi.org/10.14509/30567>).

The NOAA Office for Coastal Management (OCM) downloaded this data set from this AK DGGS site:

<https://elevation.alaska.gov/>

These files were processed to make the data available for custom and bulk download from the NOAA Digital Coast Data Access Viewer (DAV) . The total number of files downloaded and processed was 229.

### 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:

2018-09-02

### 1.5. Actual or planned geographic coverage of the data:

W: -149.331846, E: -149.022184, N: 60.866217, S: 60.707115

### 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 data were collected for the Alaska Division of Geological and Geophysical Surveys ( DGGs) and made available on the AK DGGs Elevation Portal (<https://elevation.alaska.gov/> ). The NOAA Office for Coastal Management (OCM) downloaded the data from this site to make the data available for custom downloads from the NOAA Digital Coast Data Access Viewer and for bulk downloads from the AWS S3 bucket.

Process Steps:

- 2018-09-02 00:00:00 - Airborne survey - This lidar survey was flown at an average elevation of 200 m above ground level and a ground speed of approximately 40 meters per second with a fixed-wing Cessna 180. Elevation data were acquired with a Riegl VUX1-LR laser scanner integrated with a GNSS and Northrop Grumman IMU system. The integration was designed by Phoenix LiDAR systems. Lidar data were acquired at a pulse rate ranging from 50,000 pulses per second in the alpine areas to 400,000 pulses per second over forested areas, a scan rate of 200 revolutions per second, and a scan angle range of 80-280 degrees. The accompanying report provides additional detail regarding flight conditions.
- 2018-09-02 00:00:00 - Ground survey - Ground control and check points were collected on September 2, 2018. A Trimble R7 GNSS receiver with Zephyr-2 antenna was deployed near the center of the study area and provided a base station occupation and real-time kinematic (RTK) corrections to points surveyed with a rover Trimble R8-4 GNSS receiver (internal antenna). 78 total ground control points and check points were collected to be used for calibration and assessment of the vertical accuracy of the point cloud. All points were collected on a paved road surface.
- 2019-01-01 00:00:00 - Lidar dataset processing - Raw data were processed using Terrasolid software to produce integrated files for navigation correction and a point cloud for calibration. The navigation was corrected using Inertial Explorer software, where the GNSS and IMU data are integrated to establish correct flight path and orientation of the lidar sensor. Internal consistency of the dataset was improved by calibrating the point cloud data using global, flight line, and fluctuation (within individual flightlines) tielines in Terrasolid software. The point cloud was classified for ground points as well as low, medium, and high vegetation ( 0.01-0.5 m, 0.5-3 m, and 3-60 m heights above the ground, respectively, in accordance with ASPRS lidar classification codes). Some manual processing was required to eliminate erratically placed points and misclassified ground points. All low points and air points were eliminated from the dataset. A LAS dataset was

created in ArcMAP, from which a 50 cm DTM, DSM, and intensity image were produced. The DTM was derived from elevation values of ground-classified points only, and built using the binning technique of minimum elevation and linear void fill. The DSM was derived from elevation values from first returns from all point classes, and built using the binning technique of average elevation values and linear void fill. The intensity image was derived from intensity values of first return points.

- 2022-09-08 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded 229 laz files from the Alaska Division of Geological and Geophysical Surveys Elevation Portal (<https://elevation.alaska.gov/>). The files contained classified elevation and intensity measurements for the 2018 Turnagain Pass project. The data were in UTM Zone 6 NAD83 (2011), meters coordinates and NAVD88 (GEOID12B) elevations in meters. The data had the following classifications: 1 - Unclassified, 2 - Ground, 3- Low Vegetation, 4 - Medium Vegetation, 5 - High Vegetation, 7 - Noise, 8 - Model Key Point. OCM processed all points to the Digital Coast Data Access Viewer (DAV). OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. Internal OCM scripts were run to check the number of points by classification and by flight ID and the gps and intensity ranges. 2. Internal OCM scripts were run on the laz files to convert from UTM Zone 6 NAD83 (2011) meters coordinates to geographic coordinates, to convert from NAVD88 elevations to ellipsoid elevations using the GEOID12B model, to assign the geokeys, to sort the data by gps time and zip the data to database and to the AWS S3 bucket.

**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/67860>

**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](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=9582/details/9582>  
<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid12b/9582/index.html>

**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.*