

*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:**

2016 USGS Lidar DEM: Yukon - Kuskokwim River Delta (AK)

### **1.2. Summary description of the data:**

**Product:** These are Digital Elevation Model (DEM) data for AK Yukon-Kuskokwim as part of the required deliverables for AK Yukon-Kuskokwim Lidar 2016 project. Class 2 (ground) lidar points in conjunction with the hydro breaklines and bridge breaklines were used to create a 1 meter hydro-flattened Raster DEM. Due to temporal issues related to tidally influenced streams within the AOI, water heights found in the interior of the project are occasionally higher than heights found along the coast. Occasionally, this will be evident in the digital elevation model.

**Geographic Extent:** AOI is located in the Yukon-Kuskokwim River delta between the communities of Chevak and Newtok in Western Alaska. Additional satellite areas of interest are located near the communities of Emmonak, Scammon Bay, and Mekoryuk Alaska. The areas of interest covers approximately 1,650 square miles.

**Dataset Description:** AK Yukon-Kuskokwim Lidar 2016 project called for the Planning, Acquisition, processing and derivative products of lidar data to be collected at a nominal pulse spacing (NPS) of 0.7 meter. Project specifications are based on the U.S. Geological Survey National Geospatial Program Base Lidar Specification, Version 1.2. The data was developed based on a horizontal projection/datum of NAD83, Universal Transverse Mercator, meters and vertical datum of NAVD88 (GEOID12B), meters. Lidar data was delivered as flightline-extent unclassified LAS swaths, as processed Classified LAS 1.4 files, formatted to 4877 individual 1000 m x 1000 m tiles as tiled Intensity Imagery, and as tiled bare earth DEMs; all tiled to the same 1000 m x 1000 m schema. Please note that delivery tiles 03VVH800710 and 03VWH110340 do not contain lidar points. The data boundary minimally intersects these tiles and a hydro breakline was digitized and subsequent DEM and Intensities TIFs were generated. There is no LAS 1.4 for tiles 03VVH800710 and 03VWH110340. The DEM IMG/Intensity tiff file count is 4879. The LAS 1.4 count is 4877.

**Ground Conditions:** Lidar was collected in late 2016 by Kodiak Mapping of Palmer Alaska, while no snow was on the ground 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, Kodiak Mapping established a total of 94 ground control points that were used to calibrate the lidar to known ground locations established throughout the project area. An additional 165 independent accuracy checkpoints, 117 in Bare Earth and Urban landcovers (117 NVA points), 48 in Tall Grass and Brushland/Low Trees categories (48 VVA points), were used to assess the vertical accuracy of the data. These checkpoints were not used to calibrate or post process the data.

The NOAA Office for Coastal Management (OCM) downloaded 4879 img files from the USGS site: [ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/Elevation/OPR/AK\\_Yukon-Kuskokwim\\_2016/](ftp://rockyftp.cr.usgs.gov/vdelivery/Datasets/Staged/Elevation/OPR/AK_Yukon-Kuskokwim_2016/) and processed the data to be available on the Digital Coast Data Access Viewer (DAV).

In addition to these bare earth Digital Elevation Model (DEM) data, the lidar point data that these DEMs were created from, are also available. These data are available for custom download at the link provided in the URL section of this metadata record.

Breakline data are also available. These data are available for download at the link provided in the URL section of this metadata record. These products have not been reviewed by the NOAA Office for Coastal Management (OCM) and any conclusions drawn from the analysis of this information are not the responsibility of NOAA or OCM.

**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:**

2016-08-30 to 2016-10-16

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

W: -166.510288, E: -164.341632, N: 62.838234, S: 60.34131

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

Process Steps:

- 2016-08-30 00:00:00 - LAS Point Classification: The point classification is performed as described below. The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare-earth surface is finalized, it is then used to generate all hydro-breaklines through a semi-automated process. All ground (ASPRS Class 2) lidar data inside of the Lake Pond and Double Line Drain hydro flattening breaklines were then classified to water (ASPRS Class 9)

using TerraScan/LP360 macro functionality. A buffer of 2.3 feet was also used around each hydro-flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 10). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed. All overlap data was processed through automated functionality provided by TerraScan to classify the overlapping flight line data to approved classes by USGS. The overlap data was classified using standard LAS overlap bit. These classes were created through automated processes only and were not verified for classification accuracy. Due to software limitations within TerraScan, these classes were used to trip the withheld bit within various software packages. These processes were reviewed and accepted by USGS through numerous conference calls and pilot study areas. All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. Global Mapper was used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for both the All Point Cloud Data and the Bare Earth. Woolpert Inc. proprietary software and LP360 was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information.

- 2016-08-30 00:00:00 - Hydro Flattened Raster DEM Process: Class 2 (ground) lidar points in conjunction with the hydro breaklines as well bridge breaklines were used to create a 1 meter hydro-flattened Raster DEM. Using automated scripting routines within ArcMap, an ERDAS Imagine IMG file was created for each tile. Each surface is reviewed using Global Mapper to check for any surface anomalies or incorrect elevations found within the surface.
- 2018-03-28 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded 4879 raster files from the USGS rockyftp site. The data were in UTM Zone 3 North coordinates and NAVD88 (Geoid12B) elevations in meters. The bare earth raster files were at a 1 meter grid spacing. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. Copied the files to https.

**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
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
  - 7.1.1. If data are not available or has limitations, has a Waiver been filed?
  - 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 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?

**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/52378>

**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?**

**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=8503>

[https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/AK\\_Yukon\\_Kuskokwim\\_DEM\\_20](https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/AK_Yukon_Kuskokwim_DEM_20)

**7.3. Data access methods or services offered:**

Data is available online for custom and bulk 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)*

**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*

**9. Additional Line Office or Staff Office Questions**

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