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 USGS Lidar: Charlevoix County, MI

1.2. Summary description of the data:

This metadata record describes the Classified Point Cloud for the 2018 Michigan LiDAR project covering approximately 416 square miles in Charlevoix County. Data classes available are 1 (unclassified), 2 (ground), 7 (low noise), 9 (water), 10 (ignored ground), 17 (bridge deck) and 18 (high noise).

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:

2018-05-08 to 2018-05-10

1.5. Actual or planned geographic coverage of the data:

W: -85.388303, E: -84.731645, N: 45.371616, S: 45.113826

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):
Process Steps:
- 2018-01-01 00:00:00 - At selected locations throughout the site, accurate GPS coordinates and elevations are surveyed and the points are marked with targets.
- 2018-01-01 00:00:00 - New LiDAR data is captured for the project area using a Leica ALS70 LiDAR instrument an integrated IPAS20 GPS/INS system mounted within a Aero Commander twin engine airplane.
- 2018-01-01 00:00:00 - The airborne GPS data is post-processed in Inertial Explorer

software and LEICA CloudPro software to determine the LiDAR sensor's angle and orientation in the terrain (project) coordinate system and datums during the survey.
- 2018-01-01 00:00:00 - The post processed GPS/INS solution is applied to the raw lidar data to orient and project the data points into the project area reference system as an unclassified point cloud.
- 2018-01-01 00:00:00 - The georeferenced lidar data is then classified and edited in Terrasolid Terrascan software. Data is classified to produce: Class 1: unclassified, Class 2: ground, Class 7: low point, Class 9: water, Class 10: ignored ground, Class 11: withheld.
- 2018-01-01 00:00:00 - The classified lidar data is exported as 2500 X 2500 foot tiles in the LAS format with any or all classes required to produce derivative products.
- OCM downloaded 1,810 laz files from the USGS rockyftp site. The data were in NAD83(2011) / Michigan Central (ft) projected coordinate system with NAVD88 orthometric height in feet. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. The LAStools software scripts lasinfo and lasvalidate were run on the laz files to check for errors. 2. An internal OCM script was run to check the number of points by classification and by flight ID and the gps and intensity ranges. 3. Internal OCM scripts were run on the laz files to assign the geokeys, to sort the data by gps time, convert to geographic coordinates and ellipsoidal heights by reversing the application of Geoid12b, and zip the data to database and to https.
- 2023-08-02 00:00:00 - NOAA OCM downloaded 13 laz files from this USGS rockyftp site: https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS_LPC_MI_Charlevoix_TL_2018_LAS_2019/laz/ and added them to this dataset. The data were in NAD83(2011) / Michigan Central (Int ft) projected coordinate system with NAVD88 (Geoid 12B) orthometric elevations in feet. 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 assign the geokeys, to sort the data by gps time, convert to geographic coordinates and ellipsoidal heights by reversing the application of Geoid12B, to convert from vertical elevations in feet to meters, and to zip the data to database and to AWS S3.

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/58712

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=9004
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/9004/index.html

7.3. Data access methods or services offered:
Data is available online for bulk or 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.