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:
2009 USACE NCMP Topobathy Lidar: Matanzas Inlet, FL

1.2. Summary description of the data:
These files contain topographic lidar data classified as ground (2) and unclassified (1) in accordance with the American Society for Photogrammetry and Remote Sensing (ASPRS) classification standards. These data were collected by the Compact Hydrographic Airborne Rapid Total Survey (CHARTS) system along the coast of Florida. CHARTS integrates topographic and bathymetric lidar sensors, a digital camera and a hyperspectral scanner on a single remote sensing platform for use in coastal mapping and charting activities. Data coverage generally extends along the coastline from the waterline inland 500 meters (topography) and offshore 1,000 meters or to laser extinction (bathymetry). The topographic lidar sensor has a pulse repetition rate of 9 kHz at 1064 nm (near-infrared wavelength). The bathymetric lidar sensor has a pulse repetition rate of 1 kHz at 532 nm (green wavelength). Native lidar data is not generally in a format accessible to most Geographical Information Systems (GIS). Specialized in-house and commercial software packages are used to process the native lidar data into 3-dimensional positions that can be imported into GIS software for visualization and further analysis. The 3-D position data are sub-divided into a series of LAS files, each covering approximately 5 kilometers of shoreline. The file index is provided by the shape file, "FL_Boxes.shp", and the numbers used to identify files are in the "Box" field of the shape file. The LAS file naming convention is based on the year, project, area name, "Box," and the product type. An example file name is " 2009_NCMP_FL_NewInlet_229_GeoClassified.las", where 2009 is the year of data collection, NCMP is the project under which data were collected, FL_NewInlet is the area of data collection, 229 is the "Box" number and "GeoClassified" is the product type. The format of the file is LAS version 1.0.

In addition to the lidar point data, topobathy bare earth Digital Elevation Models (DEMs) at a 1 meter grid spacing, created from the lidar point data are also available from the NOAA Digital Coast. The link to this data is provided in the URL section of this metadata record. DEMs at a 1 meter grid spacing, created from all classifications, are available by request at coastal.info@noaa.gov.

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:
2009-09-27

1.5. Actual or planned geographic coverage of the data:
W: -81.247758, E: -81.212731, N: 29.734463, S: 29.66931

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 USACE collected, processed, and provided the data to the NOAA Office for Coastal Management (OCM). OCM received the data and processed it to be available for custom download from the Data Access Viewer (DAV) and for bulk download from AWS.

Process Steps:
- These data were collected using the CHARTS system. It is owned by the Naval Oceanographic Office and operated through contract. The system collects topographic lidar data at 9kHz, bathymetric lidar data at 1kHz and RGB imagery at 1Hz. A CASI-1500 hyperspectral line scanner is integrated with the system as well. Aircraft position, velocity and acceleration information are collected through a combination of Novatel and POS A/V 410 equipment. All raw data streams are transferred to the office for downloading and processing in SHOALS GCS software. Aircraft position data are processed using POSPac software and the results are combined with the lidar data to produce 3-D positions for each lidar shot. Upon inspection and QA/QC in the software packages Fledermaus and PFM_ABE, anomalous data are flagged as invalid. PFM_ABE's chartsLAS module then converts all valid data from ellipsoid to orthometric heights based on the NGS' GEOID03 model and exports topographic data as a series of LAS files with a single file per flightline per 5km box.
- The flightline LAS files are imported into the TerraScan V11 module within MicroStation V8.0. The resulting LAS files are thinned to eliminate duplicate points. A customized classification macro is used to distinguish ground points (2) and unclassified points (1). The classification results are QC'd and any misclassified points are manually edited. In areas of dense vegetation the bare ground points might be incorrectly classified due to the inability of the laser to penetrate the

canopy and reach the bare ground. In these areas, JALBTCX defaults to the algorithm's "ground" surface instead of manually reclassifying those points. The points are exported to an ASCII file containing the following fields: longitude, latitude, elevation (orthometric), intensity, classification, mirror angle, time (GPS time), number of echos, and echo number. The ASCII file is converted to LAS with the txt2las code from LAStools (http://www.cs.unc.edu/~isenburg/lastools/).
- Horizontal positions, provided in decimal degrees of latitude and longitude, are referenced to the North American Datum of 1983 (NAD83). Vertical positions are referenced to the NAD83 ellipsoid and provided in meters. The National Geodetic Survey's (NGS) GEOID03 model is used to transform the vertical positions from ellipsoid to orthometric heights referenced to the North American Vertical Datum of 1988 (NAVD88).
- 2022-06-10 00:00:00 - The NOAA Office for Coastal Management (OCM) received 2 las files for the Matanzas Inlet, FL area from USACE JALBTCX. The lidar data had elevation and intensity measurements. The data were in geographic coordinates (NAD83) and NAVD88 (GEOID03) elevations in meters. The data were classified as: 1 - Unclassified, 2 - Ground. OCM processed all classifications of points to the Digital Coast Data Access Viewer (DAV). Classes available on the DAV are: 1, 2.   OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. An internal OCM script was 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 las files to convert the elevations from NAVD88 to ellipsoid using the GEOID03 model, to assign the geokeys, to sort the data by gps time and zip the data to database and to Amazon 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/67372

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=9526/details/9526
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/9526/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.