

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:

2013 MDEQ-FEMA Rankin-Simpson Co. Lidar Survey

1.2. Summary description of the data:

Fugro as a subconsultant to MGI was authorized to undertake this project, as a part of Work Order No. 112,

dated November 1, 2012, issued to MGI in accordance with the terms and conditions of the Professional

Services Agreement between MGI and the Mississippi Department of Environmental Quality (MDEQ), dated

February 17, 2004. This Light Detection and Ranging (LiDAR) dataset is a survey of the Middle Pearl-Strong

River Basin in Rankin and Simpson Counties, Mississippi. The project area consists of approximately 973

square miles.

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:

2013-01-06, 2013-01-07, 2013-01-31, 2013-02-01

1.5. Actual or planned geographic coverage of the data:

W: -90.2566139, E: -89.7281777, N: 32.5947464, S: 31.9160127

1.6. Type(s) of data:

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

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:

- 2013-06-13 00:00:00 - The technician processed the raw data to LAS format flight lines using the final GPS/IMU solution. This LAS data set was used as source data for boresight. The technician used commercial software to calculate initial boresight adjustment angles based on sample areas selected in the lift- mini project. These areas cover calibration flight lines collected in the lift, cross tie, and production flight lines. These areas are well distributed in the lift coverage and cover multiple terrain types that are necessary for boresight angle calculation. The technician then analyzed the result and made any necessary additional adjustment until it is acceptable for the mini project. Once the boresight angle calculation is complete for the mini project, the adjusted settings were applied to all of the flight lines of the lift and checked for consistency. The technician utilized commercial and proprietary software packages to analyze the matching between flight line overlaps for the entire lift to ensure that systematic errors are minimized for the lift and the results meet project requirements. Once all lifts are completed with boresight adjustment individually, the technician checked and corrected the vertical misalignment of all flight lines and also the matching between data and ground truth. The technician ran a final vertical accuracy check of the boresighted flight lines against the surveyed ground control points after the z correction to ensure the accuracy requirement of 18.5cm RMSE was met; see Attachment B: Accuracy Assessment Report for results. Pre-processing. Once boresighting is complete for the project, the project was set up for automatic classification first. The LiDAR data was cut to production tiles. The flight line overlap points, Noise points and Ground points were classified automatically in this process.

- 2013-06-13 00:00:00 - Post-processing. Fugro has developed a unique method for processing LiDAR data to identify and re-classify elevation points falling on vegetation, building, and other above ground structures into separate data layers. The steps are as follows: Fugro utilized commercial software as well as proprietary software for automatic filtering. The parameters used in the process were customized for each terrain type to obtain optimum results. Once the automated filtering was completed, the files were run through a visual inspection to ensure that the filtering was not too aggressive or not aggressive enough. In cases where the filtering was too aggressive and important terrain features were filtered out, the data was either run through a different filter within local area or was corrected during the manual filtering process. Interactive editing was completed in visualization software which provides manual and automatic point classification tools. Fugro utilized commercial and proprietary software for this process. Vegetation and artifacts remaining after automatic data post-processing were reclassified manually through interactive editing. The hard edges of ground features that were automatically filtered out during the automatic filtering process were brought back into ground class during manual editing. The technician

reviewed the LiDAR points with color shaded TINs for anomalies in ground class during interactive filtering. All LAS tiles went through peer review after the first round of interactive editing was finished. This helps to catch misclassification that may have been missed by the interactive editing. After the manual editing and peer review, and finalization of bare earth filtering, all tiles went through another final automated classification routine. This process ensures only the required classifications are used in the final product (all points classified into any temporary classes during manual editing were then re-classified into the project specified classifications). The classified LiDAR point cloud work tiles went through a water classification routine based on the collected water polygons. Also, during this process, the points originally classified as flight line overlap went through an automated classification to filter ground points and low points inside overlap areas.

- 2013-11-23 00:00:00 - The NOAA Office for Coastal Management (OCM) received topographic files in .laz format from the Mississippi Department of Environmental Quality (MDEQ). The files contained lidar elevation measurements. The data were received in Mississippi State Plane West 2302, NAD83 coordinates and were vertically referenced to NAVD88 using the Geoid12a model. The vertical units of the data were feet. OCM performed the following processing for data storage and Digital Coast provisioning purposes: 1. The topographic laz files were converted from a Projected Coordinate System (Mississippi State Plane West 2302) to a Geographic Coordinate system (NAD83). 2. The topographic laz files' horizontal units were converted from feet to decimal degrees. 3. The topographic laz files were cleaned of erroneous bad elevations. 4. The topographic laz files' were converted from NAVD88 elevations to NAD83 ellipsoidal elevations using Geoid12a 5. Classification 11 was moved to classification 12 due to OCM system requirements (OCM class 11 is reserved for bathymetric points, though these points are truly overlap points, Class 12).

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/49824>

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?

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=2595>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/2595/index.html>

7.3. Data access methods or services offered:

This data can be obtained on-line at the following URL:

<https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=2595>

;

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.