

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:

2011 FEMA Lidar: Chemung Watershed (NY) (AOI 2)

1.2. Summary description of the data:

LiDAR data was acquired by Tuck Mapping Solutions, Inc. (TMSI) for the Chemung Watershed and broken down into two AOIs based on the level of processing performed on the dataset. AOI-1 covers approximately 709 square miles, which is the full extent of the acquisition boundary plus a 100-meter buffer around the perimeter of this boundary. AOI-1 was delivered as full-swath, calibrated, and boresighted flight lines in LAS format. A subset of AOI-1, delineated by a buffer around the major stream networks, covers approximately 308 square miles.

RAMPP will make the following products available to FEMA by uploading the digital data to the MIP, where applicable, or via hard drives. The deliverables for this Technical Support Data Notebook (TSDN) submittal include written certification that the topographic data development meets minimum Federal Emergency Management Agency (FEMA) standards and specifications. In cases where data do not meet the required standards and specifications, an explanation is included. Additionally, the related metadata file has been uploaded to the Mapping Information Platform (MIP). Deliverables will include raw point clouds and classified point clouds (see report for details), hydro-lines, low confidence polygons, qa/qc report, survey report and a summary report. Classifications include ASPRS Class 1,2,7,9,11. Acquisition AOI-2 fulfills this dataset (see Page 3 of the Final Topographic Data Developmental Report).

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:

2011-04-30 to 2011-05-10

1.5. Actual or planned geographic coverage of the data:

W: -77.547053, E: -76.958932, N: 42.586629, S: 42.028889

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:

- 2011-05-01 00:00:00 - Acquisition LiDAR data was acquired by Tuck Mapping Solutions, Inc. (TMSI) for the Chemung Watershed and broken down into two AOIs based on the level of processing performed on the dataset. AOI-1 covers approximately 709 square miles, which is the full extent of the acquisition boundary plus a 100-meter buffer around the perimeter of this boundary. AOI-1 was delivered as full-swath, calibrated, and boresighted flight lines in LAS format. A subset of AOI-1, delineated by a buffer around the major stream networks, covers approximately 308 square miles. This dataset (AOI-2) was processed by TMSI to classify bare-earth ground points and hydro features and was delivered as a tiled, classified, point cloud in LAS format using the following classification scheme: Class 1 - Processed but unclassified Class 2 - Bare-earth ground Class 7 - Low points and noise Class 9 - Water Class 11 - Withheld

- 2011-07-01 00:00:00 - Processing Processing of the LiDAR data begins with refinement of the initial boresight alignment parameter in the ALS Processor configuration file (.reg) delivered with the raw data. For projects that have more than one lift, the boresight for each lift has to be completed individually because it may differ slightly from lift to lift. Lift boresighting is accomplished using the tri-directional calibration flight lines over the project area. One calibration flight line is flown bi-directionally overlapping a project flight line within the lift. This bi-directional calibration will also be used as a parallel flight line with the adjacent flight line. There is a cross flight line collected perpendicular to both. All three lines along with the parallel project flight line are examined to ensure that they agree, within expected system tolerances, in the overlapping areas. The two bi-directional flight lines are used to diagnose Roll and Pitch. The two parallel flight lines are used to diagnose and correct Heading error. The two perpendicularly overlapping flight lines are used to examine Variable Scan Angle error. To begin lift boresight, the raw LiDAR data of the calibration flight lines will be processed with the initial boresight parameters determined from the LiDAR Sensor Calibration. Once the boresighting is done for the calibration flight lines, the adjusted settings will be applied to the complete lift and checked for consistency. For a well-maintained LiDAR system, functioning correctly under normal operating conditions, actual boresight angles can be considered constant throughout a single mission. Therefore, once the boresight angles have been adjusted based on the calibration flight lines, the same corrections can be applied to the entire lift. Under optimal circumstances, the boresight parameters determined for the calibration flight lines should be the same

for all flight lines in the lift, but residual errors can occur. To correct for this, all of the overlaps between flight lines (side lap) and intersections of the project cross flight lines should be examined for internal consistency. If the results of the boresights start showing drift in the middle of the lift or the misalignment between flight lines starts exceeding project accuracy specifications, boresight parameters need to be adjusted to correct these errors. Once boresight adjustments are completed for each individual lift, the technician checks and corrects the vertical misalignment of all the flight lines and also the matching between data and ground truth. This process includes calculating the zbias value for each flight line so that all flight lines are vertically aligned and the entire data set match to the ground control points within the project specified accuracy range. The technician will run a final vertical accuracy check after the z correction. The result will be analyzed against the project specified accuracy to verify it meets the requirement.

- 2011-07-01 00:00:00 - Quality Risk Assessment, Mapping, and Planning Partners (RAMPP) performed a limited review of the Chemung Watershed, New York dataset. 100% of the data was checked for completeness and 5% of the data was visually examined at the micro level for qualitative issues according to the scope of work. A vertical accuracy assessment was performed on the first return points in the Level 1-processed dataset (AOI-1) and the full point cloud in the Level 2-processed dataset (AOI-2). No major completeness or quality issues were identified. Both datasets meet the Federal Emergency Management Agency's (FEMA) vertical accuracy specifications. Based on the limited qualitative and vertical accuracy assessments conducted by RAMPP on the data delivered, the Chemung Watershed, NY delivery meets the applicable project specifications as set forth by the IDIQ Subcontract # HSFEHQ-09-D- 0369-U005, Task Order HSFEHQ-10-J-0006, revised September 3, 2010.

- 2016-06-14 00:00:00 - The NOAA Office for Coastal Management (OCM) received AOI 2 of the Chemung Watershed project boundary. The dataset included topographic LAS files as part of a FEMA data delivery. The files contained lidar easting, northing, elevation, as well as ancillary collection attributes. The data were received in UTM 18 (meters) and were vertically referenced to NAVD88 using the "latest" geoid, which was assumed to be the Geoid09 model due to the provided collection dates (as GPS times were usable for this determination). OCM performed the following processing for data storage and Digital Coast provisioning purposes: 1. The LAS files were converted from feet to meters, removing erroneous elevations. 2. The LAS files were converted from orthometric (NAVD88) heights to ellipsoidal heights using the Geoid09 model but remaining in meters. 3. The LAS files were converted from a Projected Coordinate System to a Geographic Coordinate system with decimal degree units.

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/49887>

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-](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

[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=5029>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/5029/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=5029;](https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=5029)

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.