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:

2007 Southwest Florida Water Management District (SWFWMD) LiDAR: Hillsborough/ Little Manatee Districts

1.2. Summary description of the data:

EarthData International collected ADS-50 derived LiDAR over a portion of Hillsborough and Manatee Counties with

a one meter post spacing. The period of collection was between 12 January and 20 January 2007. The collection was performed by

EarthData Aviation, using a Leica ALS-50 LiDAR system, including an inertial measuring unit (IMU) and a dual frequency GPS

receiver. This project required eleven lifts of flight lines be collected. The product generated consisted of LiDAR bare earth

elevation models in LAS format. This data set is one component of a digital terrain model (DTM) for the Southwest Florida Water

Management District's FY 2007 Hillsborough County - Watershed Management Plan Topographic Information Mapping (L762) and FY 2007

Little Manatee River Watershed Management Plan (L604), encompassing approximately 453 square miles in Hillsborough County and 82

square miles in Manatee County. The 2007 LiDAR data set is comprised of 3-D mass points delivered in the LAS file format based

upon the District's 5,000' x 5,000' grid with 505 cells in the Hillsborough area with an additional 91 cells in the Little

Manatee area. An additional 12 cells were added to the Hillsborough area. The other DTM component is 2-D and 3-D breakline

features in the ESRI ArcGIS Personal Geodatabase format. The breaklines were collected using Aerial photography captured for

the Southwest Florida Water Management District FY 2007 Digital Orthophoto (B089) Central District One-foot Orthophoto project.

The stream breaklines were the corrected to the hillshade LiDAR data. Contours (2-foot) were generated from the DTM that meet

the National Standard for Spatial Data Accuracy (NSSDA) for 2-foot contours (FEMA specifications). Bare earth LiDAR mass point

data display a vertical accuracy of at least 0.3-feet root mean square (RMSE) in open and unobscured areas with standard

reflective quality.

Original contact information:

Contact Name: Mapping and GIS section

Contact Org: Southwest Florida Water Management District

Phone: 352.796.7211

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:
2007-01-12 to 2007-01-20

1.5. Actual or planned geographic coverage of the data:
W: -82.407173, E: -82.065375, N: 28.185085, S: 27.634385

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)

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:
- 2007-03-27 00:00:00 - The airborne GPS data were processed and integrated with the IMU. The results were imported into the processing system for use in the LiDAR bore sight. The raw LiDAR data was downloaded onto a production server. The ground control and airport GPS base station were used in conjunction with the processed ABGPS results for the LiDAR bore sight. The properly formatted processing results were used for subsequent processing.
- 2007-05-14 00:00:00 - EarthData has developed a unique method for processing LiDAR data to identify and remove elevation points falling on vegetation, buildings,

and other aboveground structures. The algorithms for filtering data were utilized within EarthData's proprietary software and commercial software written by TerraSolid. This software suite of tools provides efficient processing for small to large-scale, projects and has been incorporated into ISO 9001 compliant production work flows. The following is a step-by-step breakdown of the process. Lidar editing workflow process for 2007 SWFWMD 1.Initial Lidar classification - initial classification is performed by separating the last return points and other return points into different files. Only last return points will be used in Bare Earth editing. This step is accomplished during pre-processing phase. The First of Many and intermediate returns will be merged back with last returns after Bare Earth Editing and QC is completed for point cloud deliverables. 2. Lidar editing - the Lidar Last Return is edited to bare earth using a combination of automated and manual filtering techniques. Existing orthophotography over the project area will be used as a reference to ensure that the editor is correctly classifying points in areas that are either heavily vegetated or ambiguous in nature. Each tile will be individually edited to make sure noise and vegetation points have been reclassified properly. 3. QC of Lidar classification - immediately following Lidar Editing, QC is performed to verify that points are correctly classified. Each tile will be individually viewed and will be checked for consistent point density for each classification and land cover type. For example, consistent density in marsh areas and open fields will be verified. Each tile will be checked to make sure noise and vegetation points have been removed. Areas of heavy vegetation will be reviewed in profile to ensure redundant check. An overall QC of the entire project area will be done in blocks of tiles to ensure consistency between tiles. 4. Breaklines - photogrametrically-collected breaklines will be compiled to delineate specified features in accordance with the project scope. This is an interactive process using photogrametrically-derived stereo pairs in a 3D environment. Features typically collected would define tops and bottoms of slopes, roads, ditches, ponds, rivers and lakes. Breaklines in wetland areas will be collected with sufficient detail to ensure that hydrographic features are correctly represented to support generation of 1' contours to the 2' vertical accuracy requirement. The wetland breaklines will be collected as closed polygons and will be used in Step 8 for reclassifying wetland points.
- 2007-05-14 00:00:00 - 5. QC of breaklines - breaklines will be verified in a stereo environment by senior technicians who were not involved in the compilation. Wetland boundaries will be verified using existing orthophotography and lidar hill shades color-coded by elevation. This process will be used to ensure that water conditions at time of lidar acquisition were consistent with the imagery used to compile breaklines. If there are any significant discrepancies, breaklines will be modified as necessary. 6. Streams are verified against Lidar hill shades to more accurately locate and define the path. 7. Breakline draping - following this QC step, breaklines will be draped to the lidar ground points. This will include roads but will exclude ditches. All vector data is reviewed after this process to assure that vectors have been properly assigned elevations in comparison to the lidar surface. 8. Reclassification - lidar points in wetlands and along ditches will be reclassified to

Class 10. Islands in water Class 10 is a new classification not defined in the SWFWMD scope of work. 9. Final lidar QC - a TIN surface will be generated from lidar ground points and breaklines for a final QC. This step will ensure that the terrain is consistent and there are no anomalies present. 10. Formatting - the final lidar tiles will be formatted for delivery. The edited Lidar Last return points and the First of Many and Intermediate return points are merged together to complete the Point Cloud deliverable. This step will also include the restoration of header information that is removed during processing using Terrascan software. In order to restore this data and provide SWFWMD-required information, EarthData has written a program to ensure the proper data is added to the file header. 11. Deliverables - Breakline Geodatabase deliverable files are created. Contours are generated, a visual QC of contours is performed, and the geodatabase deliverable is created.
- 2008-01-01 00:00:00 - Contour Creation after the Lidar is refined to the Bare Earth surface this surface was combined with 2D photogrametrically collected and draped to the Lidar surface to establish an elevation on the breakline. The breakline location was also observed in relation to where the lidar indicated terrain breaks. In areas that were obscured, such as dense vegetation, the lidar data took precedence. As a general rule the lidar data took precedence. After the breaklines and lidar data were reconciled to each other the data was hydrologically enforced to make sure that the flow on the streams was down hill. MicroStation is then used to generate the contours. The contours are created at 1 foot with a 2 foot specification. After the contours are created they are then reviewed for accuracy and consistency. After the review is completed the contours are translated into an ESRI geodatabase for delivery.
- 2008-04-28 00:00:00 - The NOAA Office for Coastal Management (OCM) received the files in LAS format. The files contained Lidar intensity and elevation measurements. The data was in Florida State Plane Projection and NAVD88 vertical datum. OCM performed the following processing to the data to make it available within the Digital Coast Data Access Viewer (DAV): 1. The data were converted from Florida State Plane West Zone 0902 coordinates to geographic coordinates. 2. The data were converted from NAVD88 (orthometric) heights to GRS80 (ellipsoid) heights using Geoid 03. 3. The LAS data were sorted by latitude and the headers were updated. 4. Vertical unit of measure converted from feet to meters.

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:
- 1.6. Type(s) of data
- 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/50020

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=79
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/79/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;

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.