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:

Braden River - Aerial Topographic Mapping

1.2. Summary description of the data:

This metadata record describes the ortho & LIDAR

mapping of the Braden River area, FL. The mapping

consists of LIDAR data collection, contour generation,

and production of natural color orthophotography with a 1ft

pixel using imagery collected with a Wild RC-30 Aerial

Camera. Additionally, this area was collected at a 30-cm

GSD using color imagery collected with a Leica ADS-40

Aerial Digital Camera as part of the Sarasota County

project area. More information on the ADS-40 imagery

collected over Braden River can be found in the metadata

for the Sarasota County project.

Original contact information:

Contact Name: Harold Rempel

Contact Org: EarthData International

Title: Project Manager

Phone: 301-948-8550

Email: metadata@earthdata.com

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:
2005-05-20

1.5. Actual or planned geographic coverage of the data:
W: -82.53037, E: -82.287044, N: 27.461523, S: 27.341756

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

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:

- 2004-10-11 00:00:00 - New ground control was established to control and orient the photography, and included both photo-identifiable features and artificial targets. The ground control network and airborne GPS data was integrated into a rigid network through the completion of a fully analytical bundle aerotriangulation adjustment. 1. The original aerial film was scanned at a resolution of 1,210 DPI. The scans were produced using Z/I Imaging PhotoScan flatbed metric scanners. Each unit has a positional accuracy of 1.5 microns and a radiometric resolution of 1,024 gray levels for each of three color layers. 2. The raster scans were given a preliminary visual check on the scanner workstation to ensure that the raster file size is correct and to verify that the tone and contrast were acceptable. A directory tree structure for the project was established on one of the workstations. This project was then accessed by other workstations through the network. The criteria used for establishment of the directory structure and file naming conventions accessed through the network avoids confusion or errors due to inconsistencies in digital data. The project area was defined using the relevant camera information that was obtained from the USGS camera calibration report for the aerial camera and the date of photography. The raster files were rotated to the correct orientation for mensuration on the softcopy workstation. The rotation of the raster files was necessary to acommodate different flight directions from one strip to the next. The technician verified that the datum and units of measurement for the supplied control were consistent with the project requirements. 3. The photogrammetric technician performed an automatic interior orientation for the frames in the project area. The softcopy systems that were used by the technicians have the ability to set up predefined fiducial templates for the aerial camera(s) used for the project. Using the template that was predefined in the interior orientation setup, the software identified and measured the eight fiducial positions for all the frames. Upon completion, the results were reviewed against the tolerance threshold. Any problems that occurred during the automatic interior orientation would cause the software to reject the frame and identify it as a potential problem. The operator

then had the option to measure the fiducials manually.
- 2004-10-11 00:00:00 - 4. The operator launched the point selection routine which automatically selected pass and tie points by an autocorrelation process. The correlation tool that is part of the routine identified the same point of contrast between multiple images in the Von Gruber locations. The interpolation tool can be adjusted by the operator depending on the type of land cover in the triangulation block. Factors that influence the settings include the amount of contrast and the sharpness of features present on the photography. A preliminary adjustment was run to identify pass points that had high residuals. This process was accomplished for each flight line or partial flight line to ensure that the network has sufficient levels of accuracy. The points were visited and the cause for any inaccuracy was identified and rectified. This process also identified any gaps where the point selection routine failed to establish a point. The operator interactively set any missing points. 5. The control and pass point measurement data was run through a final adjustment on the Z/I SSK PhotoT workstations. The PhotoT program created a results file with the RMSE results for all points within the block and their relation to one another. The photogrammetrist performing the adjustments used their experience to determine what course of action to take for any point falling outside specifications. 6. The bundle adjustment was run through the PhotoT software several times. The photogrammetrist increased the accuracy parameters for each subsequent iteration so, when the final adjustment was run, the RMSE for the project met the accuracy of 1 part in 10,000 of the flying height for the horizontal position (X and Y) and 1 part in 9,000 or better of the flying height in elevation (Z). The errors were expressed as a natural ratio of the flying height utilizing a one-sigma (95%) confidence level. 7. The accuracy of the final solution was verified by running the final adjustment, placing no constraints on any quality control points. The RMSE values for these points must fall within the tolerances above for the solution to be acceptable. the adjustment with the RMSE values for each point measured. The .XYZ file contains the adjusted X, Y, Z,coordinates for all the measured points and the .PHT file contains the exterior orientation parameters of each exposure station.
- 2004-08-10 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. 1. Using the lidar data set provided by EarthData, the technician performs calibrations on the data set. 2. Using the lidar data set provided by EarthData, the technician performed a visual inspection of the data to verify that the flight lines overlap correctly. The technician also verified that there were no voids, and that the data covered the project limits. The technician then selected a series of areas from the dataset and inspected them where adjacent flight lines overlapped. These overlapping areas

were merged and a process which utilizes 3-D Analyst and EarthData's proprietary software was run to detect and color code the differences in elevation values and profiles. The technician reviewed these plots and located the areas that contained systematic errors or distortions that were introduced by the lidar sensor. 3. Systematic distortions highlighted in step 2 were removed and the data was re-inspected. Corrections and adjustments can involve the application of angular deflection or compensation for curvature of the ground surface that can be introduced by crossing from one type of land cover to another. 4. The lidar data for each flight line was trimmed in batch for the removal of the overlap areas between flight lines. The data was checked against a control network to ensure that vertical requirements were maintained. Conversion to the client-specified datum and projections were then completed. The lidar flight line data sets were then segmented into adjoining tiles for batch processing and data management. 5. The initial batch-processing run removed 95% of points falling on vegetation. The algorithm also removed the points that fell on the edge of hard features such as structures, elevated roadways and bridges. 6. The operator interactively processed the data using lidar editing tools. During this final phase the operator generated a TIN based on a desired thematic layers to evaluate the automated classification performed in step 5. This allowed the operator to quickly re-classify points from one layer to another and recreate the TIN surface to see the effects of edits. Geo-referenced images were toggled on or off to aid the operator in identifying problem areas. The data was also examined with an automated profiling tool to aid the operator in the reclassification. 6.The data was separated into a bare-earth DEM. A grid-fill program was used to fill data voids caused by reflective objects such as buildings and vegetation. The final DEM was written to an ASCII XYZ and LAS format. 7. The reflective surface data was also delivered in ASCII XYZ and LAS format. 8. Final TIN files are created and delivered.
- 2004-12-10 00:00:00 - This process describes the method used to compile breaklines to support the lidar digital elevation model data. Around the perimeter of the lidardata set to complete the surface model, breaklines were photogrammetrically derived . The following step-by-step procedures were utilized for breakline development. The breakline file contains three dimensionally accurate line strings describing topographical features. The relationship of lidar points to breaklines will vary depending on the complexity and severity of the terrain. Breaklines were collected where necessary to support the final product. Examples of some such locations include along the edges of roads, stream banks and centerlines, ridges, and other features where the slope of the terrain changes. 1. Using the imagery provided by EarthData Aviations, breakline data was captured in the MicroStation environment, which allowed the photogrammetrist to see graphically where each lidar X, Y, and Z point and any breaklines fall in relation to each other. This unique approach allowed for interactive editing of the breakline by the photogrammetrist. The technician generated a set of temporary contours for the stereo model in the ZI work environment to provide further guidance on the breakline placement. The technician added and/or repositioned breaklines to improve the accuracy as

required. Once these processes were completed, the temporary guidance contours were deleted, and the data were passed to the editing department for quality control and formatting. 4. The breakline data set was then put into an ESRI shape file format 5. The 1 foot contours were generated in Microstation (using 2 foot specifications) with an overlay software package called TerraSolid. Within TerraSolid, the module Terramodler was utilized to first create the tin and then a color relief was created to view for any irregularities before the contour generator was run. The contours were checked for accuracy over the DTM and then the Index contours were annotated. At this point the technician identified any areas of heavy tree coverage by collecting obscure shapes. Any contours that were found within these shapes do not meet Map Accuracy Standards and are coded as obscure. The dataset was viewed over the orthos before the final conversion. The contours were then converted to Arc/Info where final QC AMLs were run to verify that no contours were crossing. The contours were delivered in shp format as a merged file.
- 2012-08-06 00:00:00 - The NOAA Office for Coastal Management (OCM) received zipped files in PNT format. The files contained ASCII LiDAR point cloud data for intensity and elevation measurements. OCM performed the following processing on the data for data storage purposes and Digital Coast provisioning: 1. The data were converted from projected State Plane (Florida West 0902) coordinates to geographic (NAD83) coordinates 2. The data were converted from NAVD88 heights (in feet) to ellipsoid heights using Geoid03 (in meters) 3. The LAS files were run through a program to remove error value based on elevation. 4. The LAS files were run through a ground algorithm to correctly convert "never classified" points to the ground class. 5. Data were zipped to laz format

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/49686

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=2521
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/2521/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=2521

The data set is dynamically generated based on user-specified parameters.

;

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.