

*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:**

2005-2006 Southwest Florida Water Management District (SWFWMD) Lidar: Polk County (Including Hampton, Judy, Lake Wales, Peace River (North), and Polk District Remainder Tracts)

### **1.2. Summary description of the data:**

This data set is one component of a digital terrain model (DTM) for the SWFWMD Polk District. This record includes information

about the LiDAR data for the following SWFWMD tracts: Hampton, Judy, Lake Wales, Peace River (North) and Polk Remainder. All of these

tracts are located in Polk County. Please see the Bounding Coordinates for each tract for the location within Polk County. Information

that is specific to each tract has been maintained.

#### **HAMPTON TRACT**

This data set is one component of a digital terrain model (DTM) for Hampton Tract, Polk County, Florida encompassing approximately 43

square miles. This dataset is comprised of 48 LiDAR files, based on the DISTRICT 5,000' by 5,000' sheet index system (17951-17958,

18114-18121, 18363-18370, 18526-18533, 18259-18266 and 18594-18601) in the LAS file format. The raw data was collected at an average

ground sample distance of 1-meter. Other components of the DTM include: 3-D breaklines along hydrographic features in the Shape file

format; lake/pond polygons (in 3D) in the shape file format; obscured area polygons (in 2D) in the Shape file format; and hard/soft

breaklines (in 3D) in the Shape file format.

Date of Collection: 20060125

Bounding Coordinates of tract:

West Bounding Coordinate: -82.035984

East Bounding Coordinate: -81.903345

North Bounding Coordinate: 28.328847

South Bounding Coordinate: 28.238391

#### JUDY TRACT

This data set is one component of a digital terrain model (DTM) for Judy Tract, Polk County, Florida encompassing approximately

12.6 square miles. This dataset is comprised of 14 LiDAR files, based on the DISTRICT 5, 000' by 5,000' sheet index system

(17632-17636, 17795-17799, and 17959-17962) in the LAS file format. The raw data was collected at an average ground sample distance

of 1-meter. Other components of the DTM include a personal geodatabase containing: obscured vegetation polygons; road overpass

polygons; road breaklines; soft feature breaklines; water body polygons; coastal shorelines; 1-foot contours; hydrographic feature

breaklines, and island polygons in accordance with the SWFWMD 2006 Topographic Database Design.

Date of Collection: 20060125

Bounding Coordinates of tract:

West Bounding Coordinate: -81.925929

East Bounding Coordinate: -81.848175

North Bounding Coordinate: 28.350110

South Bounding Coordinate: 28.308789

#### LAKE WALES

This data set is one component of a digital terrain model (DTM) for Lake Wales, Polk County, Florida encompassing approximately

10.75 square miles. This dataset is comprised of 12 LiDAR files, based on the DISTRICT 5, 000' by 5,000' sheet index system

(22365-22367, 22528-22530, 22691-22693 and 22854-22856) in the LAS file format. The raw data was collected at an average ground

sample distance of 1-meter. Other components of the DTM include: 3-D breaklines along hydrographic features in the Shape file

format; lake/pond polygons (in 3D) in the shape file format; obscured area polygons (in 2D) in the Shape file format; and hard/soft

breaklines (in 3D) in the Shape file format.

Date of Collection: 20060125

Bounding Coordinates of tract:

West Bounding Coordinate: -81.543294

East Bounding Coordinate: -81.509932

North Bounding Coordinate: 27.916603

South Bounding Coordinate: 27.868213

PEACE RIVER (NORTH)

This data set is one component of a digital terrain model (DTM) for Peace River North ( P692), Polk County, Florida encompassing

approximately 1,149 square miles. This dataset is comprised of 1,281 LiDAR files, based on the DISTRICT 5,000' by 5,000' sheet

index system in the LAS file format. The raw data was collected at an average ground sample distance of 1-meter. Other components

of the DTM include: 3-D breaklines along hydrographic features in the Shape file format; lake/pond polygons (in 3D) in the shape

file format; obscured area polygons (in 2D) in the Shape file format; and hard/soft breaklines (in 3D) in the Shape file format.

Date of Collection: 20060227

Bounding Coordinates of tract:

West Bounding Coordinate: -82.035984

East Bounding Coordinate: -81.903345

North Bounding Coordinate: 28.328847

South Bounding Coordinate: 28.238391

POLK DISTRICT REMAINDER

This dataset is one component of a digital terrain model (DTM) for the Southwest Florida Water Management District's FY2007

Remainder Polk District LiDAR Mapping Project and Polk District Contours Project (L672) encompassing approximately 428 square miles

in Polk County, Florida. This dataset is comprised of 478 LiDAR files, based on the FL Statewide 5,000' by 5,000' sheet index system

in the LAS version 1.1 file format. LiDAR acquisition dates were January 27, January 30 through February 20, 2005. The raw data was collected at an average ground sample distance of 2.1 feet. Other components of the DTM include a personal geodatabase in accordance with the SWFWMD 2006 Topographic Database Design containing: obscured vegetation polygons; road overpass polygons; road breaklines; soft feature breaklines; water body polygons; coastal shorelines; hydrographic features breaklines; island polygons; and 1-foot contours. Final products include FEMA-compliant LIDAR-derived DTM data and 1-foot contours (for cartographic visualization purposes only) meeting or exceeding National Map Accuracy Standards for 2-foot contours. This area is not a tract, but an addition of areas to the Polk District data set. This data set consists of three areas within Polk County. The approximate bounding coordinates for each area are given below. Area 3 borders the east and north sides of the Peace River (North) and Judy Tract data sets. The bounding coordinates for Area 3 are generalized here, but it is actually a multi-sided polygon with many vertices.

Date of Collection: 20050127, 20050130-20050220

| Bounding Coordinates of    | Area 1:    | Area 2     | Area 3     |
|----------------------------|------------|------------|------------|
| West Bounding Coordinate:  | -82.104809 | -81.958339 | -81.934587 |
| East Bounding Coordinate:  | -82.033554 | -81.918752 | -81.380374 |
| North Bounding Coordinate: | 28.314262  | 28.349889  | 28.397394  |
| South Bounding Coordinate: | 28.171749  | 28.322179  | 27.625454  |

Original contact information:

Contact Name: Ekaterina Fitos

Contact Org: Southwest Florida Water Management District

Title: GIS Analyst 2

Phone: (352) 796-7211

Email: Ekaterina.Fitos@swfwmd.state.fl.us

**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:**

2005-01-27 to 2006-02-27

**1.5. Actual or planned geographic coverage of the data:**

W: -82.081057, E: -81.364396, N: 28.357807, S: 27.629413

**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:

- 2007-01-01 00:00:00 - HAMPTON TRACT, JUDY TRACT, LAKE WALES, PEACE RIVER (NORTH) The LiDAR data was acquired using a Leica ALS50 from an altitude of 1,000-meters above ground level to provide an average ground sample distance of 1-meter. The scanner field of view was 44-degrees, and the scan rate was 33-hertz. First and last return data was collected along with the signal return intensity. Two redundant airborne GPS bases stations were utilized during the data acquisition with maximum line-of-sight distance between the base station and aircraft of 20-km.

The LiDAR data was reduced using Grafnav (Waypoint Consulting) for GPS post-processing, PosProc (Applanix Crop) for IMU processing, ALS50 Post Processor (LH Systems) to initial LiDAR processing, TerraScan (Terrasolid) for initial point classification, and proprietary Woolpert developed software for refining the point classification and QC. The LAS files contain 4 classifications: 1 = unclassified; 2 = ground; 9 = water; and 10 = photogrammetric mass points. The class 1 consists of all points not on the ground. Class 2 consists of bare earth points. Class 9 consists of points within water polygons such as swamps and/or wetlands. Class 10 consists of supplementary mass points that were photogrammetrically compiled on points features such as as peaks or pits, and they were created to maintain the accuracy of the DTM. Process Date: 20060125

- 2007-01-01 00:00:00 - POLK REMAINDER The LiDAR data was acquired using a Leica ALS50 from an average altitude of 3,000-feet above ground level to provide an average ground sample distance of 3.3-feet. The scanner field of view was 44-degrees, and the scan rate was 33-hertz. First and last return data collected along with the signal return intensity. Two redundant airborne GPS bases stations were utilized during the data acquisition with maximum line-of-sight distance between the base station and aircraft of 20-km. The LiDAR data was reduced using Grafnav (Waypoint Consulting) for GPS post-processing, PosProc (Applanix Crop) for IMU processing, ALS50 Post Processor (LH Systems) to initial LiDAR processing, TerraScan (Terrasolid) for initial point classification, and proprietary Woolpert developed software for refining the point classification and QC. The LiDAR data was

reviewed in 3D using a digital photogrammetric work station using ADS40 digital stereo imagery. The LiDAR ground points are adjusted, if needed, to fit the ground. Breaklines were added to hydrologically enforce the DTM. The edited LiDAR data and the photogrammetrically compiled breaklines are merged and processed to create the final DTM files. During the production process, LiDAR data gaps between the flight lines were observed. These gaps between flight lines were corrected by adding photogrammetrically compiled mass points. These points are classified as class 10, in the LAS file. In the areas with the compiled masspoints, it may be noted that the masspoints are not as dense the areas with complete LiDAR coverage. The masspoints were compiled at a sufficient density to define the surface to contract specifications. Anomalies were noted in the 2005 Peace River North and Hampton Tract LiDAR data, during the LiDAR QA/QC process for the 2007 Remainder Polk County Project. The 2005 LiDAR datasets for Peace River North (P692) and Hampton Tract (DO19) required additional processing to ensure correct ground points classification. In areas with gaps in the LiDAR coverage, photogrammetrically compiled masspoints were added to the surface data. The LAS files contain 5 classifications: 1 = unclassified; 2 = ground; 9 = water; 10 = photogrammetric masspoints; and 11 = swamp and/or wetlands. The class 1 consists of all points not considered to be ground. Class 2 consists of bare earth (ground) points. Class 9 consists of points within water polygons. Class 11 consists of point within swamps and/or wetlands. Class 10 consists of supplementary mass points that were photogrammetrically compiled on points features such as peaks or pits, and LiDAR data gaps. These points were created to maintain the accuracy of the DTM. 3D breaklines were collected at the digital photogrammetric workstation during the LiDAR data review. These breaklines were delineated to insure the DTM is hydrologically correct. Hydrologically Enforced Elevation Data is defined as "Hydro enforced TINS, DEMS, or contours ensure that top surfaces of bridges and culverts are cut by stream breaklines so that computer models will accurately represent drainage flow" per FEMA's Appendix A A.4.10. The breaklines were collected for hydrologically significant features as appropriate to support the development of the generation of 2-foot contours meeting National Map Accuracy Standards. The following breakline features were classified and separated: Closed Water Body Features, Linear Hydrographic Features, Coastal Shorelines, Road Features, Soft Features, Obscured Vegetated Areas, Island Features, Overpasses, and Bridges. Per contract specifications, culverts were not collected as part of this project. Therefore continuity of hydrographic features may not be consistent. For a complete description of survey methods, processing methods, software, system parameters, and accuracy analysis, see the Florida MTS Report of Specific Purpose Survey, SWFWMD MTS Report of DOI Survey, FY2007 Digital LiDAR (L672) (dated 4/8/2008). - 2008-04-28 00:00:00 - The NOAA Office for Coastal Management (OCM) received the files in LAS format. The files contained Lidar 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 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.

**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/50027>



#### 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](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=71>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/71/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.*