

*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:**

2015 USGS Lidar: Gratiot County, MI

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

Geographic Extent: Gratiot County, MI, covering approximately 572 square miles.

Dataset Description: Gratiot County, MI 2015 LiDAR project called for the Planning, Acquisition, processing and derivative products of LIDAR data to be collected at a nominal pulse spacing (NPS) of 0.7 meter. Project specifications are based on the U.S. Geological Survey National Geospatial Program Base LIDAR Specification, Version 1.2. The data was developed based on a horizontal projection/datum of Michigan State Plane South, NAD83, international feet and vertical datum of NAVD1988 (GEOID12A), international feet. LiDAR data was delivered in RAW flight line swath format, then processed to create Classified LAS 1.4 Files formatted to 695 individual 5000 foot X 5000 foot tiles. Corresponding Intensity Images and Bare Earth DEMs tiles were created with the same 5000 foot X 5000 foot tile schema. Breaklines were produced in Esri geodatabase format.

Ground Conditions: LiDAR was collected in spring of 2015, while no snow was on the ground and rivers were at or below normal levels. In order to post process the LiDAR data to meet task order specifications, Quantum Spatial established a total of 91 Land Cover control points (71 QC checkpoints, 20 calibration control points) which were used to calibrate the LIDAR to known ground locations established throughout the Gratiot County, MI project area.

The NOAA Office for Coastal Management (OCM) downloaded 695 laz point data files from this USGS site:

[https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS\\_LPC\\_MI\\_GratiotCo\\_2015\\_LAS\\_2017/laz/](https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS_LPC_MI_GratiotCo_2015_LAS_2017/laz/)

The data were processed to the Data Access Viewer (DAV) to make the data available for custom downloads.

**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:**

2015-04-18 to 2015-04-19

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

W: -84.85970712225, E: -84.35114821556, N: 43.47250631354, S: 43.11478080624

**1.6. Type(s) of data:**

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

Model (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?

Yes

##### 4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

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):*

Lineage Statement:

Data were collected and processed by Quantum Spatial, Inc. and made available on the USGS ftp site. The data were downloaded from the USGS ftp site by the NOAA Office for Coastal Management (OCM) where the data were processed to make it available for custom download from the Data Access Viewer (DAV).

Process Steps:

- 2015-01-01 00:00:00 - Classified LAS Processing: The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare-earth surface is finalized, it is then used to generate all hydro-breaklines through heads-up digitization. All ground (ASPRS Class 2) LiDAR data inside of the Lake Pond and Double Line Drain hydro flattening breaklines were then classified to water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 3 feet was also used around each hydro-flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 10). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed. All bridge decks were classified to Class 17. All overlap data was processed through automated functionality provided by TerraScan to classify the overlapping flight line data to approved classes by USGS. The overlap data was identified using the Overlap Flag, per LAS 1.4 specifications. All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. Global Mapper was used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for both the All Point Cloud Data and the Bare Earth. Quantum Spatial proprietary software was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information.
- 2022-08-31 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded

695 laz point data files from this USGS site: [https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS\\_LPC\\_MI\\_GratiotCo\\_2015\\_LAS\\_2017/laz/](https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS_LPC_MI_GratiotCo_2015_LAS_2017/laz/)

The data were in MI State Plane South FIPS 2113 (NAD83 2011), international feet coordinates and NAVD88 (Geoid12A) elevations in feet. The data were classified as: 1 - Unclassified, 2 - Ground, 7 - Low Noise, 9 - Water, 10 - Ignored Ground, 17 - Bridge Decks, 18 - High Noise. OCM processed all classifications of points to the Digital Coast Data Access Viewer (DAV). Classes available on the DAV are: 1, 2, 7, 9, 10, 17, 18. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. Internal OCM scripts were run to check the number of points by classification and by flight ID and the gps, elevation, and intensity ranges. 2. Internal OCM scripts were run on the laz files to: a. Convert from orthometric (NAVD88) elevations to NAD83 (2011) ellipsoid elevations using the Geoid12A model b. Convert the laz files from MI State Plane South (NAD83 2011), international feet coordinates to geographic coordinates c. Convert from vertical units of feet to vertical units of meters. d. Assign the geokeys, sort the data by gps time and zip the data to database.

**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
- 5.2. Quality control procedures employed
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.4. Approximate delay between data collection and dissemination
- 8.3. Approximate delay between data collection and submission to an archive facility

**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/67801>

**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?**

Yes

**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=9557/details/9557>

[https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS\\_LPC\\_MI\\_GratiotCo](https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/USGS_LPC_MI_GratiotCo)

**7.3. Data access methods or services offered:**

Data is available online for bulk or custom downloads.

**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)*

NCEI\_CO

**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*

Data is backed up to tape and to cloud storage.

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*