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:

2019 NOAA Lidar: Padilla Bay NERR and Skagit River Delta, WA

1.2. Summary description of the data:

This dataset is a LiDAR (Light Detection and Ranging) point cloud of the coastal tidal parts of Skagit and Snohomish Counties in WA State. The National Oceanic and Atmospheric Administration's Office for Coastal Management contracted with Tetra Tech to acquire and process airborne LiDAR over an area of about 186 square miles. Data was to be acquired within a 2 hour window of low tide. Deliverables included classified LiDAR point clouds, breaklines and digital elevation models (DEM). LiDAR data was acquired on 13 and 14 of August 2019. The coastal area was covered in one flight on 8/14 while the inland area was covered on 8/13. The coastal flight took place on 8/14 with a tide window between -0.7 and +0.5 foot. For the airborne LiDAR flight Tetra Tech subcontracted with Eagle Mapping. The data was acquired with a Riegl LMS VQ780i sensor. A ground control survey was conducted to collect calibration points and check points. For the ground survey, Tetra Tech contracted with Compass Data. The LiDAR data and derivative products were to be based on the USGS LiDAR Base Specifications. The coordinate reference system is UTM Zone 10N meters, NAD83(2011). The vertical datum is NAVD88 with Geoid12B.

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:

2019-08-13 to 2019-08-14

1.5. Actual or planned geographic coverage of the data:

W: -122.583147, E: -122.29409, N: 48.644291, S: 48.157119

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):

Process Steps:

- 2019-08-14 00:00:00 - Flight Acquisition: LiDAR data was acquired on 13 and 14 of August 2019. The coastal area was covered in one flight on August 14 while the inland area was covered on August 13. The coastal flight took place on August 14 with a tide window between -0.7 and +0.5 foot. For the airborne LiDAR flight Tetra Tech subcontracted with Eagle Mapping. The data was acquired with a Riegl LMS VQ780i sensor.
- 2020-01-16 00:00:00 - Point Cloud Processing: The point cloud data was classified using the software tools Microstation, TerraScan and TerraModeler. Ground points were classified using a macro developed in-house. These points were then edited further manually to obtain the best bare earth representation. Water points were classified and edited using the hydro breaklines. Low, medium and high vegetation points were classified as per the following heights from the ground: low vegetation (0 to 0.6m), medium vegetation (0.6 to 1.5m), high vegetation (above 1.5m). Ignored ground points (class 20) were classified using 0.5m buffer distance from the hydro-breaklines. Bridge decks were identified using the surface file and classified accordingly. High and Low points were identified and classified into their respective classes. The point cloud data was finally tiled out in LP360 with the correct definition of the projected coordinate system. The point cloud has been classified using the following classes: Class Description Point Count Min Average Max Class 1 Default (11,419,873 points) Class 2 Ground (2,607,438,873 points) Class 3 Low_vegetation (1,631,352,621 points) Class 4 Medium_vegetation (151,567,537 points) Class 5 High_vegetation (1,039,793,650 points) Class 7 Low_point (840,222 points) Class 9 Water (145,165,821 points) Class 17 Bridge decks (870,198points) Class 18 High_noise (13,400 points) Class 20 Ignored Ground (867,734 points)
- OCM received 82 laz files from TetraTech. Data was received in UTM 10N NAD 83 (2011) meters horizontally and NAVD88 meters vertically. The data were classified as: 1 Default, 2 Ground, 3 Low_vegetation, 4 Medium_vegetation, 5 High_vegetation, 7 Low_point, 9 Water, 17 Bridge decks, 18 High_noise, Class 20 Ignored Ground. OCM processed all classifications of points to the Digital Coast Data Access Viewer (DAV). OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. An internal OCM script was run to check the number of points by classification and by flight ID and the gps and intensity ranges. 2. Internal OCM scripts were run on the laz files to convert from orthometric (NAVD88) elevations to ellipsoid elevations using the Geoid12B model, to convert from UTM 10N NAD83 (2011) coordinates in meters to geographic coordinates, to assign the geokeys, to sort the data by gps time and zip the data to database and to http.

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/58941

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?

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=9035
https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/9035/index.html

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.