

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:

2003 Puget Sound LiDAR Consortium (PSLC) Topographic LiDAR: Snohomish County, Washington

### 1.2. Summary description of the data:

TerraPoint surveyed and created this data for the Puget Sound LiDAR Consortium under contract. The area surveyed is approximately 167 square miles and covers a northwest portion of Snohomish County, WA.

All data was collected during ideal conditions (leaf-off).

The LAS files were derived from all returns ASCII files contain the X,Y,Z values of all the LiDAR returns collected during the survey mission. The GPS time, classification, scan angle, intensity and return numbers of each point

were preserved in the conversion from ASCII to LAS. The LAS files are classified into the following ASPRS classes: (1) Unclassified (2) Bare Earth. Ground and water points are included in Class 2 (Bare Earth). Further details are

available in the Process Steps below. The NOAA Office for Coastal Management noticed that some intensity values are 0, so be aware before using the intensity information.

This dataset was flown in 2003 with a 50% overlap between flight lines. Due to the overlap the nominal point spacing of the dataset is 1.0 meter.

### 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:

2003-04-02 to 2003-04-12

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

W: -122.409833, E: -122.175578, N: 48.300496, S: 48.025012

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

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

las

**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:

- Acquisition. Lidar data were collected in leaf-off conditions (approximately 1 November - 1 April) from a fixed-wing aircraft flying at a nominal height of 1,000 meters above ground surface. Aircraft position was monitored by differential GPS, using a ground station tied into the local geodetic framework. Aircraft orientation was monitored by an inertial measurement unit. Scan angle and distance to target were measured with a scanning laser rangefinder. Scanning was via a rotating 12-facet pyramidal mirror; the laser was pulsed at 30+ KHz, and for most missions the laser was defocused to illuminate a 0.9m-diameter spot on the ground. The rangefinder recorded up to 4 returns per pulse. Flying height and airspeed were chosen to result in on-ground pulse spacing of about 1.5 m in the along-swath and across-swath directions. Most areas were covered by two swaths, resulting in a nominal pulse density of about 1 per square meter.
- Processing. GPS, IMU, and rangefinder data were processed to obtain XYZ coordinates of surveyed points. For data acquired after January 2003 (NW Snohomish, Mt Rainier, Darrington, and central Pierce projects), survey data from areas of swath overlap were analysed to obtain best-fit in-situ calibration parameters that minimize misfit between overlapping swaths. This reduces vertical inconsistency between overlapping swaths by about one-half. Heights were translated from ellipsoidal to orthometric (NAVD88) datums via GEOID99
- ASCII file generation All Point returns with all their attributes were directly exported into ASCII files. These were first divided into USGS quarter quads (3.25 minute by 3.25 minute) and then in 25 tiles per quarter quad.
- 2013-02-01 00:00:00 - The NOAA Office for Coastal Management (OCM) received topographic files in ASCII .TXT format. The files contained lidar elevation measurements. The data were received in Washington State Plane North Zone 4601, NAD83 coordinates and were vertically referenced to NAVD88 using the Geoid99 model. The vertical units of the data were feet. OCM performed the following processing for data storage and Digital Coast provisioning purposes:
  1. The ASCII .TXT files were parsed and converted to LAS version 1.2 using LAsTools' txt2las tool.
  2. Bad elevations were filtered and removed from many tiles across the data set on a tile by tile basis using LAsTools' las2las tool.
  3. The topographic las files were converted from orthometric (NAVD88) heights to ellipsoidal heights using Geoid99.
  4. The topographic las files were converted from a Projected Coordinate System ( WA SP North) to a Geographic Coordinate system (NAD 83).
  5. The topographic las files' vertical units were converted from feet to meters.
  6. The topographic las files' horizontal units were converted from feet to decimal degrees.

**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/50142>

**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=1462>

<https://noaa-nos-coastal-lidar-pds.s3.amazonaws.com/laz/geoid18/1462/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=1462>

;

### 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.*