

*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:**

2018 WA DNR Lidar DEM: Chelan, WA

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

No metadata record was provided with the data. This record is populated with information from the Quantum Spatial, Inc. technical report downloaded from the Washington Dept. of Natural Resources Washington Lidar Portal. The technical report is available for download from the link provided in the URL section of this metadata record.

In September 2018, Quantum Spatial (QSI) was contracted by the Washington Department of Natural Resources (WADNR) to collect Light Detection and Ranging (LiDAR) data in the fall of 2018 for the Chelan site in central Washington. Data were collected to aid WADNR in assessing the topographic and geophysical properties of the study area to support natural resources planning and management for Chelan County, Washington. A total of 335,876 acres of 8 pulses per square meter LIDAR were acquired between 10/18/2018 and 10/27/2018. .

In addition to these bare earth Digital Elevation Model (DEM) data, the lidar point data that these DEM data were created from are also available. These data are available for download at the link provided in the URL section of this metadata record.

### **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:**

2018-10-18 to 2018-10-24, 2018-10-27

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

W: -121.135766, E: -120.314787, N: 48.117208, S: 47.443889

### **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:

The NOAA Office for Coastal Management (OCM) downloaded the GeoTiff files from the Washington Lidar Portal.

Process Steps:

- Once the LiDAR data arrived in the laboratory, QSI employed a suite of automated and manual techniques for processing tasks. Processing tasks included: GPS, kinematic corrections, calculation of laser point position, relative accuracy testing, classification of ground and non-ground points, and assessments of statistical absolute accuracy. The general workflow for calibration of the LiDAR data was as follows: Resolve GNSS kinematic corrections for aircraft position data using kinematic aircraft GNSS (collected at 2Hz) and IMU (collected at 200Hz) data with Trimble CenterPoint PP-RTX methodologies. Used POSGNSS, PosPac MMS Develop a smoothed best estimate of trajectory (SBET) file that blends post-processed aircraft position with attitude data. Sensor heading, position, and attitude are calculated throughout the survey. Used POSGNSS, PosPac MMS Calculate laser point position by associating SBET position to each laser point return time, with offsets relative to scan angle, intensity, etc. This process creates the raw laser point cloud data for the entire survey in \*.las (ASPRS v 1.2) format, in which each point maintains the corresponding scan angle, return number (echo), intensity, and x, y, z information. These data are converted to orthometric elevation (NAVD88 & NGVD29) by applying a Geoid correction. Used RiProcess and RiWorld Test relative accuracy using ground classified points per each flight line. Perform automated line-to-line calibrations for system attitude parameters (pitch, roll, heading), mirror flex (scale), and GNSS/IMU drift. Calibrations are performed on ground classified points from paired flight lines. Every flight line is used for relative accuracy calibration. Used TerraMatch, TerraScan, QSI Proprietary Software Assess NVA via direct comparisons of ground classified points to ground RTK survey data. Point classifications are assigned for features of interest via a combination of QSI custom algorithms and manual inspection. Used TerraScan, TerraMatch, Trimble Business Center

- 2022-05-20 00:00:00 - The NOAA Office for Coastal Management (OCM) downloaded 33 raster DEM files in GeoTiff format from the Washington Lidar Portal. The data were in Washington State Plane South NAD83(HARN), US survey feet coordinates and NAVD88 (Geoid12B) elevations in feet. The bare earth raster files were at a 3 feet grid spacing. No metadata record was provided with the data. This record is populated with information from the Quantum Geospatial, Inc. technical report downloaded from the Washington Dept. of Natural Resources Washington Lidar Portal. That report is linked within this metadata record, please see it for additional

information. OCM performed the following processing on the data for Digital Coast storage and provisioning purposes: 1. Used internal an script to assign the EPSG codes (Horizontal EPSG: 2927 and Vertical EPSG: 6360) to the GeoTiff formatted files.  
2. Copied the files to https.

**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):**  
QSI has high standards and adheres to best practices in all efforts. In the laboratory, quality checks are built in throughout processing steps, and automated methodology allows for rapid data processing. QSI's innovation and adaptive culture rises to technical challenges and the needs of clients like Washington DNR. Reporting and communication to our clients are prioritized through regular updates and meetings.

## **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
- 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/67267>

**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-](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=9507/details/9507>

[https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/WA\\_Chelan\\_DEM\\_2018\\_9507/inc](https://noaa-nos-coastal-lidar-pds.s3.us-east-1.amazonaws.com/dem/WA_Chelan_DEM_2018_9507/inc)

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

Data is available online for bulk and 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.*