

# Auckland South LiDAR 1m DEM (2016-2017)

## Metadata

### File Identifier

766cd718-d847-7143-7620-3348d189261b

### Language

eng

### Character Set

#### Character Set Code

utf8

### Hierarchy Level

#### Scope Code

dataset

### Hierarchy Level Name

dataset

## Contact

### Responsible Party

#### Organisation Name

LINZ - Land Information New Zealand

#### Position Name

Lidar Coordination Manager

### Contact Info

#### Contact

##### Phone

###### Telephone

###### Voice

04 4600110

##### Address

###### Address

###### Delivery Point

155 The Terrace

###### City

Wellington

###### Postal Code

6145

###### Country

New Zealand

###### Electronic Mail Address

info@linz.govt.nz

### Role

#### Role Code

pointOfContact

#### Date Stamp

Date

2020-12-10

#### Metadata Standard Name

ANZLIC Metadata Profile: An Australian/New Zealand Profile of AS/NZS ISO 19115:2005, Geographic information - Metadata

#### Metadata Standard Version

1.1

#### Reference System Info

Reference System

Reference System Identifier

Identifier

Code

2193

#### Identification Info

Data Identification

Citation

Citation

Title

Auckland South LiDAR 1m DEM (2016-2017)

Date

#### Abstract

This layer contains the DEM for LiDAR data in the southern Auckland Region captured between 2016 and 2017. - The DSM is available as layer [Auckland South LiDAR 1m DSM (2016-2017)] (<https://data.linz.govt.nz/layer/104382>). - The index tiles are available as layer [Auckland South LiDAR Index Tiles (2016-2017)](<https://data.linz.govt.nz/layer/104409>). - The LAS point cloud and vendor project reports are available from [OpenTopography] (<https://portal.opentopography.org/datasets?loc=New%20Zealand>). LiDAR was captured for Auckland Council by AAM New Zealand between September 2016 to June 2017. These datasets were generated by AAM New Zealand and their subcontractors. Data management and distribution is by Land Information New Zealand. Data comprises: - DEM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - DSM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - Point cloud: las tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout Pulse density is 4 pulses/square metre. Vertical Accuracy Specification is +/- 0.2m (95%). Horizontal Accuracy Specification is +/- 0.6m (95%). Vertical datum is NZVD2016

#### Status

Progress Code

completed

#### Point Of Contact

Responsible Party

Organisation Name

LINZ - Land Information New Zealand

Position Name

Lidar Coordination Manager

Contact Info

Contact

Phone

Telephone  
Voice  
04 4600110

Address  
Address  
Delivery Point  
155 The Terrace  
City  
Wellington  
Postal Code  
6145  
Country  
New Zealand  
Electronic Mail Address  
info@linz.govt.nz

Role  
Role Code  
pointOfContact

Resource Maintenance  
Maintenance Information  
Maintenance And Update Frequency  
Maintenance Frequency Code  
notPlanned

Resource Format  
Format  
Name  
\*.xml  
Version  
Unknown

Descriptive Keywords  
Keywords  
Keyword  
New Zealand  
Type  
Keyword Type Code  
theme

Thesaurus Name  
Citation  
Title  
ANZLIC Jurisdictions  
Date  
Edition  
Version 2.1

Edition Date

Date

2008-10-29

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-jurisdic.xml#anzlic-jurisdic>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Resource Constraints

Security Constraints

Classification

Classification Code

unclassified

Resource Constraints

Legal Constraints

Use Limitation

Copyright in this work is owned by Auckland Council © Auckland Council

Use Constraints

Restriction Code

copyright

Resource Constraints

Legal Constraints

Use Limitation

Released by LINZ under Creative Commons Attribution 4.0 New Zealand (CC BY 4.0) with:  
Following Attribution: "Sourced from the LINZ Data Service and licensed by Auckland Council,  
for re-use under CC BY 4.0." For details see: <https://www.linz.govt.nz/data/licensing-and-using-data/attributing-elevation-or-aerial-imagery-data>

Use Constraints

Restriction Code

license

Spatial Representation Type Code

grid

Representative Fraction

Denominator

Integer

1000

Language

eng

Character Set

Character Set Code

utf8

Topic Category Code

elevation

Extent

EX\_ Extent

Geographic Element

EX\_ Geographic Description

Identifier

Authority

Citation

Title

ANZMet Lite Country codelist

Date

Edition

Version 1.0

Edition Date

Date

2009-03-31

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-country.xml#Country>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Code

nzl

Extent

EX\_ Extent

Geographic Element

EX\_ Geographic Bounding Box

174.532660196175.311469477-37.3014358158-36.8434424426

Distribution Info

Distribution

Transfer Options

Digital Transfer Options

On Line

Online Resource

Linkage

URL

<https://data.linz.govt.nz/layer/104318-auckland-south-lidar-1m-dem-2016-2017/>

Data Quality Info

DQ\_ Data Quality

Scope

DQ\_ Scope

Level

Scope Code

dataset

#### Level Description

Scope Description

Other

dataset

#### Lineage

LI\_Lineage

Statement

Data Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft between 9 September 2016 and 6 February 2017, using AAM Riegl Q1560 LiDAR system. Survey Specification: • Scanner: Riegl Q1560 - 2 laser channel system • Half Scan Angle:  $\pm 20$  &  $29$  degrees • Laser Pulse Rate: 300kHz • Laser Pulse Mode: Multipulse • Laser Return: 1st, 2nd, 3rd... 7th and last • File Format: ESRI ASCII Grid, LAS 1.2, ESRI Shapefile • Horizontal Datum: NZGD2000 • Vertical Datum: NZVD2016 • Map Projection: NZTM2000 • Vertical Accuracy Specification:  $\pm 0.10$ m RMS • Horizontal Accuracy Specification:  $\pm 0.30$ m RMS The scan angle is  $< \pm 42$  degrees per the data supplied to us not  $\pm 20$  &  $29$  degrees referenced in the survey report specification. 18 LAS files are in LAS 1.2 format, the rest of the data is in LAS 1.3 format. Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft between 1 November 2016 to 29th June 2017 using AAM New Zealand's Riegl Q1560 - 2 laser channel system LiDAR system. This area includes Auckland Region covering southern suburbs and regions. Classification of the point cloud followed the classification scheme below; 1 - Unclassified 2 - Ground 3 - Low Vegetation 4 - Medium Vegetation 5 - High Vegetation 6 - Buildings, Structures 7 - Low/High Points 9 - Water 10 - Bridge 12 - Overlap Extra classifications found in three tiles were reclassified as Unclassified (1). Rail (10) points were reclassified by LINZ as Bridges (17) per survey reference before providing the classified point cloud data to Open Topography. Data Processing: Reduction of the LiDAR data proceeded without any significant problems. Classification of the point clouds is to Level 3, with reference to ICSM LiDAR Specifications for NZ. Classification accuracy Required: 99% for ground points. Discussion and clarification on Classification was undertaken between Nathan Sykes as client representative, and the AAM Team during the client review of the data, such as: The pedestrian footbridges have been classed as structures, the intention was to use the bridge class for more substantial road bridges over water (unless it is a piped culvert) Train carriages (temporary/moving objects) have been left in class 5, as assigned by classification routines. The observation was made that the newer sensors, such as the Q1560, are very sensitive. They detect noticeably more atmospheric noise than older sensors (e.g. very light humidity that is not visible, can be detected). It's not a defect. With these returns included and classified in the dataset, the user gets a feel for the structure of the data, e.g. in open areas where there are no "only returns" because the "first of many returns" are in the noise class. The Digital Elevation (DEM) and Digital Surface Model (DSM) were derived using a point to TIN and TIN to Raster process, using Linear interpolation. Hydro flattening was undertaken in the DEM over non-tidal water bodies with surface area greater than 625 sq m, to the client specifications. Tidal areas were flow within 1.5 hours of gazetted low tide (noting local variation in actual lowest water level) Data Validation: Ground data in this volume has been compared to test points obtained by field survey and assumed to be error-free. Data classification has been manually checked and edited against any available imagery Points to Note: It was noted in tiles BB31\_4425 and BB31\_4325, there was significant flight line stepping between flights 2 and 10. This was caused by shifting sand dunes, rather than a system error. The deliverables to LINZ were: 1m gridded bare earth digital elevation model (DEM) 1m gridded digital surface model (DSM) Classified point cloud

#### Metadata Constraints

Legal Constraints

Use Limitation

Copyright of this work is owned by Land Information New Zealand © LINZ

Use Constraints

Restriction Code

copyright

## Metadata Constraints

### Legal Constraints

#### Use Limitation

Released by LINZ under Creative Commons Attribution 4.0 International (CC BY 4.0) with:  
Following Attribution: "Sourced from the LINZ Data Service and licensed for reuse under CC BY  
4.0" For details see <https://www.linz.govt.nz/data/licensing-and-using-data/attributing-linz-data>

#### Use Constraints

##### Restriction Code

license