

# Canterbury - Mackenzie LiDAR 1m Index Tiles (2015)

## Title

Canterbury - Mackenzie LiDAR 1m Index Tiles (2015)

## Creator

LINZ - Land Information New Zealand

## Date

2015-02-10

## Description

This layer contains the Index Tiles for LiDAR data from the Mackenzie Region, Canterbury captured in 2015. - The DEM is available as layer [Canterbury - Mackenzie LiDAR 1m DEM (2015)](<https://data.linz.govt.nz/layer/98769-canterbury-mackenzie-lidar-1m-dem-2015/>). - The DSM is available as layer [Canterbury - Mackenzie LiDAR 1m DSM (2015)](<https://data.linz.govt.nz/layer/99122-canterbury-mackenzie-lidar-1m-dsm-2015/>). - The LAS point cloud and vendor project reports are available from [OpenTopography] (<http://opentopo.sdsc.edu/datasets>). Lidar was captured for Genesis Energy Limited by Aerial Surveys Limited in Feb 2015. The original dataset was generated by Aerial Surveys and their subcontractors. This reprocessed dataset was supplied by Aerial Surveys to Land Information New Zealand, and includes a large area (peripheral data from the original survey). The survey area is in the Mackenzie District of Canterbury, between Lake Tekapo, Lake Pukaki, Lake Ohau and Lake Ruataniwha. This area also includes Twizel Township. 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 specification is 1 pulse/square metre. Vertical datum is NZVD2016.

## Source

Data Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft on: 10 & 11 February 2015, using Aerial Surveys Optech Orion H300 LiDAR system. Survey Specification: • Scanner: Optech Orion H300 • Flying Height: 1500m AMGL • Scan Angle: ±20 degrees • Scan Frequency: 30.7Hz • Pulse Rate: 75kHz • Swath Overlap: 35% • Points Per M2: 1 Data processing: The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSpac software. Benchmark: PUKAKI Base Station Positions: 44 14 07.433570 S 170 07 00.766050 E 483.949 Ell Height Antenna Height: For 10th 1.401M for 11th 1.485M phase center The POS data was combined with the LiDAR range files and used to generate LIDAR point clouds in NZTM and ellipsoidal heights. This process was undertaken using Optech LMS LiDAR processing software. The data was checked for completeness of coverage. The relative fit of data in the overlap between strips was also checked. The height accuracy of the ground classified LiDAR points was checked using open land-cover survey check site data collected by Sounds Surveying Ltd. This was done by calculating height differences statistics between a TIN of the LiDAR ground points and the checkpoints. The standard deviation statistic is 0.038m; a RMS of 0.045m and the average difference is 0.022m. LiDAR is relative to the control check points. The positional accuracy of the LiDAR data has been checked by

overlaying Sounds Surveying Ltd surveyed data over the LiDAR data displayed coded by intensity. The data was found to fit well in position. The point cloud data was then classified with TerraSolid LiDAR processing software into ground and above ground returns using automated routines tailored to the project landcover and terrain. All product deliverables supplied in terms of NZTM map projection and NZVD2016 height datum. Classification of the point cloud followed the classification scheme below: 2 - Ground 14 - Above Ground Re-processing: In 2018 the data was reprocessed by Aerial Surveys for LINZ relative to the NZVD2016 vertical datum, and supplied as 1:1000 nominal scale (2500 720m high x 480m wide subtiles per full NZ Topo50 sheet). Lakes and large rivers were hydroflattened in the Bare Earth Digital Elevation Model. The deliverables to LINZ were: 1m gridded bare earth digital elevation model (DEM) 1m gridded digital surface model (DSM) Classified point cloud Reprocessed Classified Point Cloud Data was reclassified by LINZ and is hosted by Open Topography: the Above\_Ground (14) points were reclassified as Unassigned classification (1).

#### Coverage

-44.4661081535 169.902351576 -43.9982817194 170.491539867

#### Identifier

<https://data.linz.govt.nz/layer/99194-canterbury-mackenzie-lidar-1m-index-tiles-2015/>

#### Type

vector

#### Language

eng

#### Subject

elevation

#### Subject

New Zealand