OTAGO REGIONAL COUNCIL

PGF-LIDAR OTAGO REGION SURVEY

VOLUME: PRJ38924_01

PROJECT SUMMARY

This project is for provision of Airborne LiDAR survey over 8,191 km^2 of the Otago Region.

This volume contains data over Dunedin and Mosgiel – 52 km^2. Captured on the 24th June 2021.

The survey was planned to achieve ≤ 20cm vertical accuracy (95% CI), ≤ 100cm horizontal accuracy (95% CI) with an emitted pulse density of 8ppsm, and ground classification to ICSM level 2.

Background image from Google Earth

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DATA SUMMARY

This volume includes the following data in NZTM2000 projection and NZVD2016 vertical datum:

- Classified Point Cloud data in LAS v1.4 and ASCII XYZi formats
- Ground Classified Point Cloud data in LAS v1.4 format
- DEM Grids, 1m cell size in GeoTIFF and ASCII XYZi formats
- DSM Grids, 1m cell size in GeoTIFF and ASCII XYZi formats
- Contours, 0.5m interval in ESRI Shapefile format
- Intensity images, 1m cell size in GeoTiff format
- Hydro-flattening Breaklines in ESRI Shapefile format
- Flight lines in ESRI Shapefile format
- Tile layout, 1:1000 NZTopo50 in Shapefile format
- Extent file, describing the delivered data in Shapefile format
- File listing in text file format
- Metadata file: This document in PDF format

This data has been supplied in accordance with the specifications agreed with Otago Regional Council and the *LINZ PGF Version: New Zealand National Aerial LiDAR Base Specification – January 2020*. Users requiring other formats and projections please contact AAM NZ Ltd.

CONTENTS

1. DATA INFORMATION

Data supply: AAM AWS S3 (Links via e-mail)
Number of files: 3421 data files, 1 file list, 1 metadata report
Data formatted on: 31.08.2021
README Document: This file

File Details of this Delivery	Contents
Readme_PRJ38924_01.pdf	Metadata Report
PRJ38924_01_File_List.txt	Listing of product files delivered in this volume

2. METADATA

Source Data	Source	Description	Ref No	Date
LiDAR	AAM	Optech Galaxy+ 473	FL015368	24.06.21
Trajectory	AAM	RTX	FL015368	24.06.21
Field Survey	WSP NZ Ltd	RTK	6-XZ685	22.07.21

LiDAR Characteristics	Description
Format	LAS 1.4 & ASCII xyzi
Emitted Density	8 ppm2
Tile size	480m x 720m (NZTopo50 1:1000 tiles)
ICSM Classification	Level 2. Ground surface improvement

Number	Point Class	Description	ICSM	CI %
1	Default	Unclassified	1	95
2	Ground	Bare ground	2	98
3	Low vegetation	< 2 m	1	95
4	Medium vegetation	2-8 m	1	95
5	High vegetation	> 8 m	1	95
6	Buildings, structures	Buildings, houses, silos etc.	1	95
7	Low Noise	Spurious low point returns (unusable)	1	95
9	Water	Any point in water	2	98
17	Bridge	Any bridge or overpass	2	95
18	High Noise	Spurious high point returns (unusable)	1	95

Reference Systems	Horizontal	Vertical
Datum	NZGD2000	NZVD2016
Projection	NZTM2000	N/A
Geoid Model	N/A	NZGeoid2016

Accuracy Specification	Measured Point	Derived Point	Basis of Estimation
Field Survey	5 cm		Survey methodology used
LiDAR (Horizontal)	< 100 cm		Project design
LiDAR (Vertical)	< 20 cm		Project design

Project specifications and technical processes were designed to achieve data accuracies as above.

Notes On Expected Accuracy

- Values shown represent 95% confidence level (2 sigma), in centimetres.
- "Derived points" are those interpolated from a terrain model.
- "Measured points" are those observed directly.
- Accuracy estimates for terrain modeling by LiDAR refer to the terrain definition on clear ground.
- Laser strikes have been classified into "ground" and "non-ground", based upon algorithms tailored for major terrain/vegetation combinations existing in the project area. The definition of the ground may be less accurate in isolated pockets of dissimilar terrain/vegetation combinations.

Limitations of Data

- The definition of the ground under trees may be less accurate.

Data Validation – LiDAR Data

- Vertical Accuracy Validation - Ground data in this volume has been compared to 393 test points obtained by field survey and assumed to be error-free. The test points were distributed in 6 sites across the mapping area and located on clear ground. Comparison of the test points with elevations interpolated from measured data resulted in:

  Mean difference: 0.007 m
  St. Deviation: 0.025 m
  Standard Error (RMS): 0.026 m or 0.051 m (95% CI)

  This mean elevation difference has been removed from the data supplied in this volume
- Horizontal Accuracy – the LiDAR point cloud was compared to survey data and found to fit well in position. Expected accuracy is well within the specified range.
- Data classification has been manually checked and edited against available imagery.

3. CONDITIONS OF SUPPLY

The data in this volume has been commissioned by **OTAGO REGIONAL COUNCIL**.

The data in this volume is provided by AAM Pty Limited (AAM) to **OTAGO REGIONAL COUNCIL** under the Terms of Engagement described in PGF-LiDAR Otago Region Survey Contract for Services. Which transfers copyright and IP rights in the Deliverables from AAM to **OTAGO REGIONAL COUNCIL** upon payment of all amounts and subject to the conditions below. AAM retains all rights to the raw data, and perpetual royalty free license to use the Deliverables:

1. This file (Readme_PRJ38924_01.pdf) is always stored with the unaltered data contained in this volume.

This data is provided in accordance with the specifications agreed with Otago Regional Council. Any problems associated with the information in the data files contained in this volume should be reported to AAM NZ Limited.

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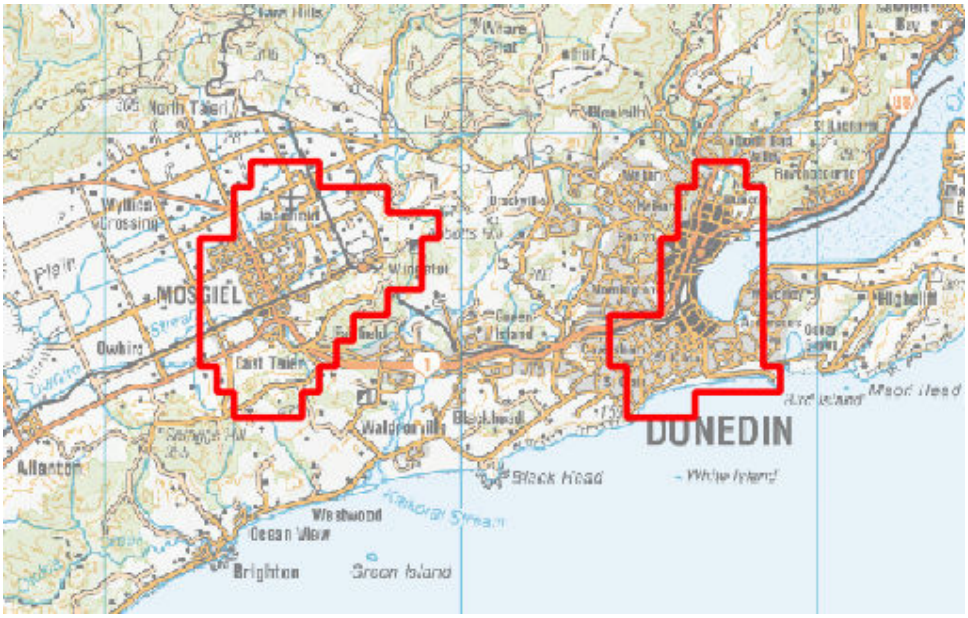
4. VALIDATION

Project Extent



Colour Elevation Images