



Metadata

TASMAN DISTRICT COUNCIL

TASMAN – 2019-25 PGF LiDAR SURVEY

Products

AERIAL SURVEYS PROJECT No: FPFA1264

Summary

Project

An Airborne Laser Scanner survey was conducted over the Tasman area of interest totalling approximately 8,136 km². The area is located in the Tasman Region of the South Island.

Data

The data was processed into various digital map data products. The products included for this dispatch contain:

- Raw Point Cloud
- Classified Point Cloud
- Gridded DEM
- Gridded DSM
- Contours
- Hydro-Flattening Breaklines
- Tile Layout
- File Listing
- QA Report
- Metadata Report (this report)

Project Report

Safety: No safety Incidents were reported during the project.

Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft.

Ground Support: GPS base station data was provided by Global Surveys Ltd and LINZ base stations. The ground check points were acquired by Sounds Surveying Ltd.

Data Processing: Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using auto algorithms across the project area.

Data Presentation: The data provided on this volume has been supplied in accordance with a specification agreed with Tasman District Council.

Project Contacts:

Tasman DC Database Information Administrator: Peter Inwood (Ph. (03) 543 8489 x DDI)

Aerial Surveys Technical & Sales: Dave Froggatt (Ph. (03) 547 0044)

Data Acquisition

The project area is that shown in the shapefile 'TasmanPGF_2019-25_LiDAR_Metadata.shp' that accompanies the dataset. A map showing this area of interest is included in Appendix A.

Capture Dates

The LiDAR survey was captured on the following dates:

10 February 2020, 1 March 2020, 5-7 March 2020, 15 March 2020, 19 March 2020, 29-30 April 2020, 6 May 2020, 9 May 2020, 15 May 2020, 20 May 2020, 3 July 2020, 14 July 2020, 11-12 August 2020, 17 August 2020, 22-24 October 2020, 1 December 2020, 28 December 2020, 16 January 2021.

LiDAR survey was collected using Aerial Surveys Optech Orion Galaxy PRIME system.

Survey Specification:

- Scanner: Optech Galaxy PRIME
- Flying Height: 2,925 m AMGL
- Scan Angle: ± 52.0 degrees
- Scan Frequency: 45 Hz
- Pulse Rate: 400 kHz
- Swath Overlap: 55%
- Swath Points Per M²: 4

Sounds Surveying Ltd field surveyed check sites that were used to verify the accuracy of the processed ground dataset.

Data Processing

The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSPac software.

Benchmarks: pprtx

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 0.047 m; a RMS of 0.047 m and the average difference is 0.00 m. 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 land cover and terrain.

Product Deliverables

All spatial data for this project provided in terms of New Zealand Transverse Mercator 2000 (NZTM2000) horizontal and New Zealand Vertical Datum (NZVD2016). The data was converted from NZGD2000 ellipsoidal heights into the orthometric height system using the LINZ NZGeoid16 separation model. The products are tiled into NZTopo50 map sheet tiles as noted below.

The following details the folder contents:

- AOI: Extent is the limit of the project area
This dataset is supplied in SHP format
- Ground Control Data: All ground control data after survey undertaken
This dataset is supplied in XLSX, PDF and JPG format
- Raw Point Cloud: Contains the unclassified LiDAR point cloud points as they were prior to being classified
This dataset is supplied in ASPRS LAS v1.4 format
- Classified Point Cloud: Contains the LiDAR point cloud points that have been classified
This dataset is supplied in ASPRS LAS v1.4 format

Surface Type	Classification	Point Class
Raw	1	Unclassified
Ground	2	Ground
Above Ground	3	Low Vegetation
Above Ground	4	Medium Vegetation
Above Ground	5	High Vegetation
Above Ground	6	Buildings
Above Ground	7	Low Noise
Above Ground	9	Water
Above Ground	18	High Noise

- Gridded DEM: Contains the gridded ground surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Gridded DSM: Contains the gridded top of surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Contours: Contains 0.5 m contours. The contours were interpolated from a smoothed TIN created using the LiDAR point cloud dataset. The contours are classified into majors and minors. Four minors to every major and shown on different levels.
This dataset is supplied in SHP format
- Breaklines: Breaklines representing all hydro-flattened features
This dataset is supplied in SHP format
- Flight Lines: Flight lines as ESRI polygons
This dataset is supplied in SHP format

Tile Layout: Tiles is the tile layout for the project area
Tile size 1:1,000 sheet layout (480 x 720 m)
Tile dataset is supplied in SHP format

File Listing: Supplied in TXT format

Metadata Report: Supplied in PDF format

All digital data supplied on 1 e-HDD. Data was couriered to Peter Inwood, Tasman District Council, on 04/05/2021.

If you have requirements for the data in other file formats, map projections please contact Aerial Surveys.

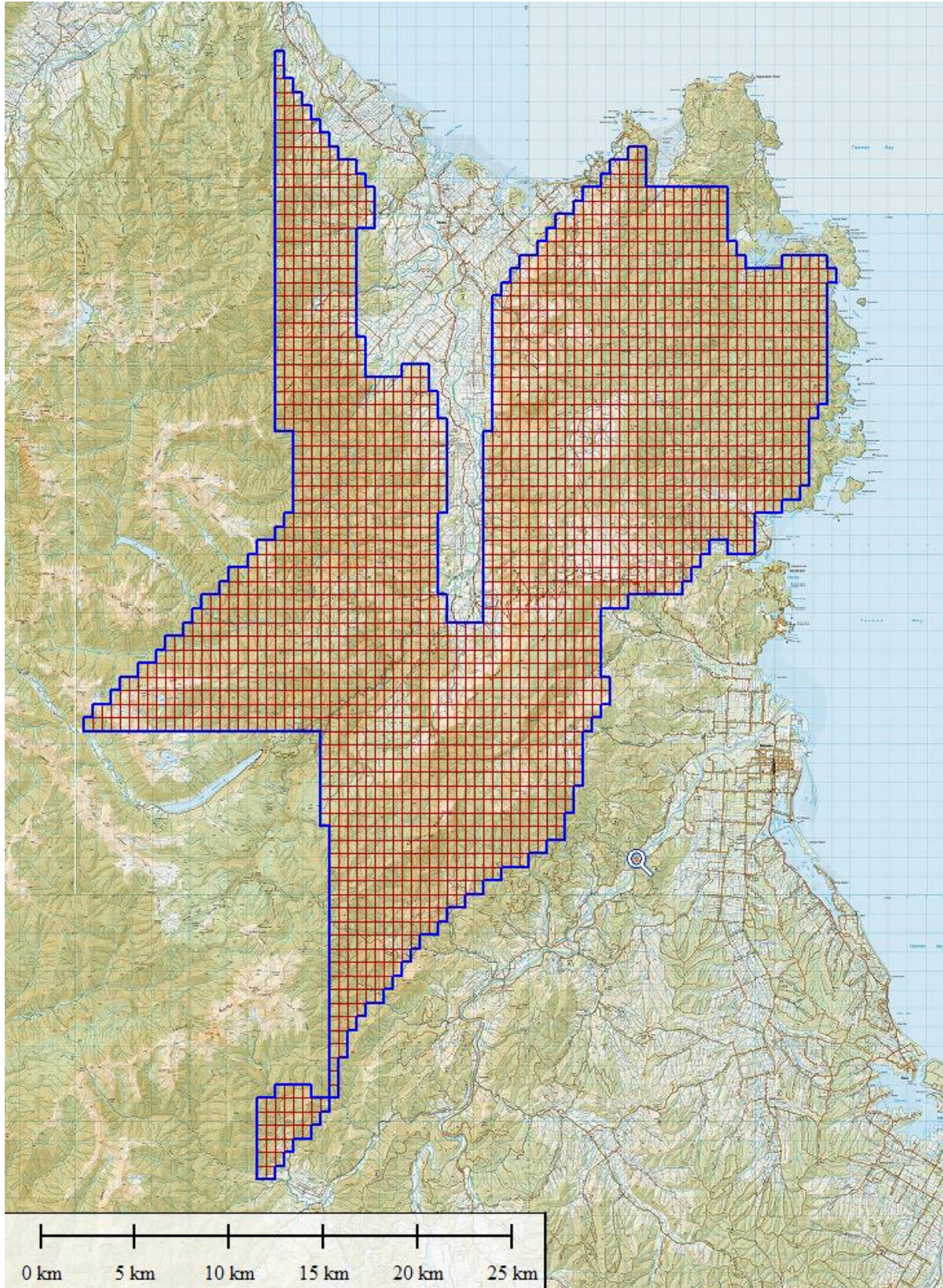
License/Copyright

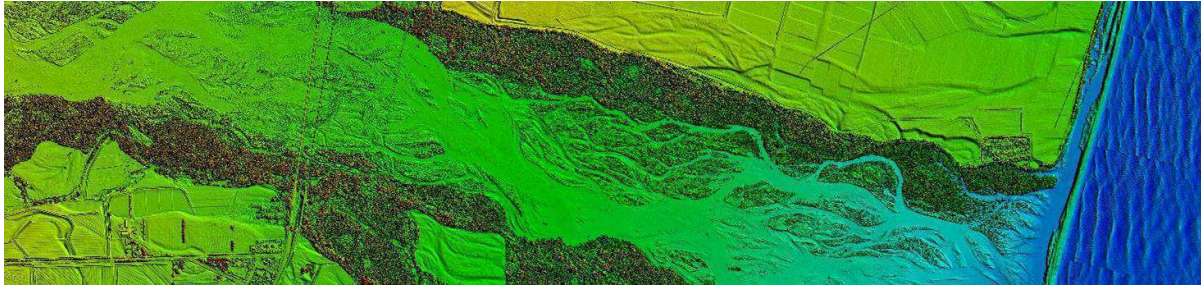
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Tasman District Council intends to release the data under Creative Commons license (CC BY). In doing so any data that is shared, copied or distributed must have the required acknowledgements and attributions for the ortho imagery and DEM products provided in this project.

Appendix A: Project Area

The tile layout is shown in red.
The project extent area is shown in blue.





Metadata

TASMAN DISTRICT COUNCIL
TASMAN – 2019-25 PGF LiDAR SURVEY
Products Block 1 Part 2

AERIAL SURVEYS PROJECT No: FPFA1264

Summary

Project

An Airborne Laser Scanner survey was conducted over the Tasman area of interest totalling approximately 8,136 km². The area is located in the Tasman Region of the South Island.

Data

The data was processed into various digital map data products. The products included for this dispatch contain:

- Raw Point Cloud
- Classified Point Cloud
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- Contours
- Intensity
- Hydro-Flattening Breaklines
- Tile Layout
- File Listing
- QA Report
- Metadata Report (this report)

Project Report

Safety: No safety Incidents were reported during the project.

Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft.

Ground Support: GPS base station data was provided by Global Surveys Ltd and LINZ base stations. The ground check points were acquired by Sounds Surveying Ltd.

Data Processing: Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using auto algorithms across the project area.

Data Presentation: The data provided on this volume has been supplied in accordance with a specification agreed with Tasman District Council.

Project Contacts:

Tasman DC Database Information Administrator: Peter Inwood (Ph. (03) 543 8489 x DDI)
Aerial Surveys Technical & Sales: Dave Froggatt (Ph. (03) 547 0044)

Data Acquisition

The project area is that shown in the shapefile 'LiDARTilesTasman2020_Fpfa1264-Block1Part2_FINAL.shp' that accompanies the dataset. A map showing this area of interest is included in Appendix A.

Capture Dates

The LiDAR survey was captured on the following dates:

10 February 2020, 1 March 2020, 5-7 March 2020, 15 March 2020, 19 March 2020, 29-30 April 2020, 6 May 2020, 9 May 2020, 15 May 2020, 20 May 2020, 3 July 2020, 14 July 2020, 11-12 August 2020, 17 August 2020, 22-24 October 2020, 1 December 2020, 28 December 2020, 16 January 2021.

LiDAR survey was collected using Aerial Surveys Optech Orion Galaxy PRIME system.

Survey Specification:

- Scanner: Optech Galaxy PRIME
- Flying Height: 2,925 m AMGL
- Scan Angle: ± 52.0 degrees
- Scan Frequency: 45 Hz
- Pulse Rate: 400 kHz
- Swath Overlap: 55%
- Swath Points Per M²: 4

Sounds Surveying Ltd field surveyed check sites that were used to verify the accuracy of the processed ground dataset.

Data Processing

The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSPac software.

Benchmarks: pprtx

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 0.047 m; a RMS of 0.047 m and the average difference is 0.00 m. 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 land cover and terrain.

Product Deliverables

All spatial data for this project provided in terms of New Zealand Transverse Mercator 2000 (NZTM2000) horizontal and New Zealand Vertical Datum (NZVD2016). The data was converted from NZGD2000 ellipsoidal heights into the orthometric height system using the LINZ NZGeoid16 separation model. The products are tiled into NZTopo50 map sheet tiles as noted below.

The following details the folder contents:

- AOI: Extent is the limit of the project area
This dataset is supplied in SHP format
- Ground Control Data: All ground control data after survey undertaken
This dataset is supplied in XLSX, PDF and JPG format
- Raw Point Cloud: Contains the unclassified LiDAR point cloud points as they were prior to being classified
This dataset is supplied in ASPRS LAS v1.4 format
- Classified Point Cloud: Contains the LiDAR point cloud points that have been classified
This dataset is supplied in ASPRS LAS v1.4 format

Surface Type	Classification	Point Class
Raw	1	Unclassified
Ground	2	Ground
Above Ground	3	Low Vegetation
Above Ground	4	Medium Vegetation
Above Ground	5	High Vegetation
Above Ground	6	Buildings
Above Ground	7	Low Noise
Above Ground	9	Water
Above Ground	18	High Noise

- Gridded DEM: Contains the gridded ground surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Gridded DSM: Contains the gridded top of surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Contours: Contains 0.5 m contours. The contours were interpolated from a smoothed TIN created using the LiDAR point cloud dataset. The contours are classified into majors and minors. Four minors to every major and shown on different levels.
This dataset is supplied in SHP format
- Breaklines: Breaklines representing all hydro-flattened features
This dataset is supplied in SHP format
- Intensity: Contains the raster images created using the intensity values of the LiDAR returns
This dataset is supplied in TIF/TFW format

Flight Lines:	Flight lines as ESRI polygons This dataset is supplied in SHP format
Tile Layout:	Tiles is the tile layout for the project area Tile size 1:1,000 sheet layout (480 x 720 m) Tile dataset is supplied in SHP format
File Listing:	Supplied in TXT format
Metadata Report:	Supplied in PDF format

All digital data supplied on e-HDD-119. Data was couriered to Peter Inwood, Tasman District Council, on 16/06/2021.

If you have requirements for the data in other file formats, map projections please contact Aerial Surveys.

License/Copyright

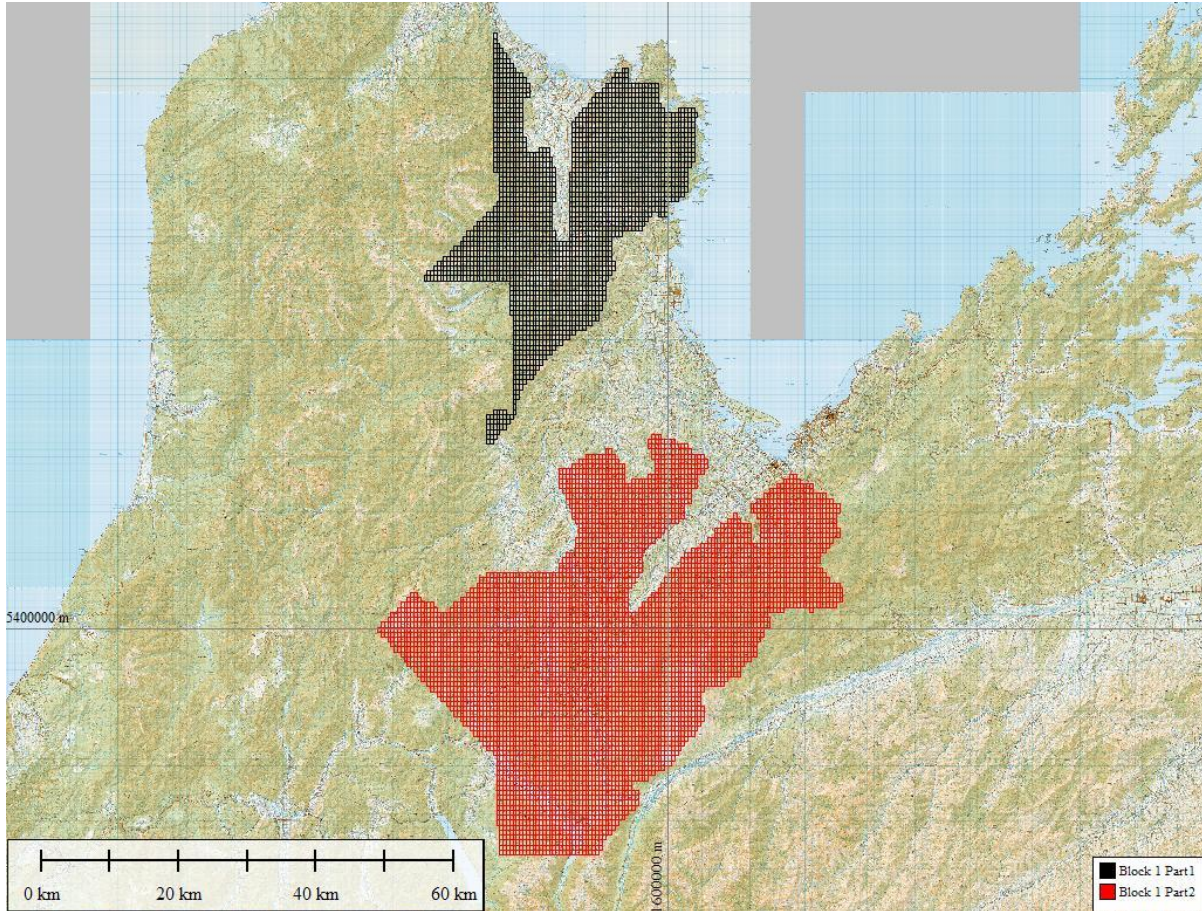
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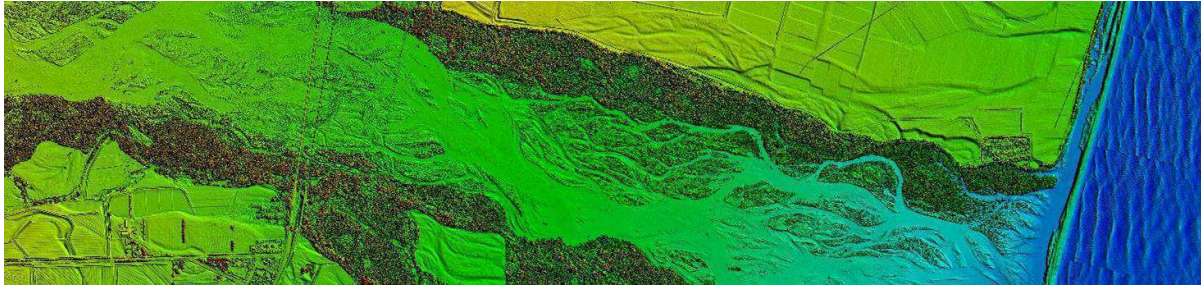
Tasman District Council intends to release the data under Creative Commons license (CC BY). In doing so any data that is shared, copied or distributed must have the required acknowledgements and attributions for the ortho imagery and DEM products provided in this project.

Appendix A: Project Area

The tile layout for Block 1 Part2 is shown in red.

The project for Block 1 Part1 is shown in back- already supplied.





Metadata

TASMAN DISTRICT COUNCIL

TASMAN – 2019-25 PGF LiDAR SURVEY

Products Block 2

AERIAL SURVEYS PROJECT No: FPFA1264

Summary

Project

An Airborne Laser Scanner survey was conducted over the Tasman area of interest totalling approximately 8,136 km². The area is located in the Tasman Region of the South Island.

Data

The data was processed into various digital map data products. The products included for this dispatch contain:

- Raw Point Cloud
- Classified Point Cloud
- Gridded DEM
- Gridded DSM
- Intensity
- Hydro-Flattening Breaklines
- Tile Layout
- File Listing
- QA Report
- Metadata Report (this report)

Project Report

Safety: No safety Incidents were reported during the project.

Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft.

Ground Support: GPS base station data was provided by Global Surveys Ltd and LINZ base stations. The ground check points were acquired by Sounds Surveying Ltd.

Data Processing: Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using auto algorithms across the project area.

Data Presentation: The data provided on this volume has been supplied in accordance with a specification agreed with Tasman District Council.

Project Contacts:

Tasman DC Database Information Administrator: Peter Inwood (Ph. (03) 543 8489 x DDI)

Aerial Surveys Technical & Sales: Dave Froggatt (Ph. (03) 547 0044)

Data Acquisition

The project area is that shown in the shapefile 'LiDARTiles_Tasman2020_Fpfa1264-Block2.shp' that accompanies the dataset. A map showing this area of interest is included in Appendix A.

Capture Dates

The LiDAR survey was captured on the following dates:

28 January 2020, 12 August 2020, 22 October 2020, 23 October 2020, 24 October 2020, 1 December 2020, 16 January 2021, 7 February 2021, 18 February 2021, 19 February 2021, 7 May 2021

LiDAR survey was collected using Aerial Surveys Optech Orion Galaxy PRIME system.

Survey Specification:

- Scanner: Optech Galaxy PRIME
- Flying Height: 2,925 m AMGL
- Scan Angle FOV: 52.0 degrees
- Scan Frequency: 45 Hz
- Pulse Rate: 400 kHz
- Swath Overlap: 55%
- Swath Points Per M²: 4

Sounds Surveying Ltd field surveyed check sites that were used to verify the accuracy of the processed ground dataset.

Data Processing

The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSPac software.

Benchmarks: pprtx

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 0.082 m; a RMS of 0.083 m and the average difference is -0.003 m. 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 land cover and terrain.

Product Deliverables

All spatial data for this project provided in terms of New Zealand Transverse Mercator 2000 (NZTM2000) horizontal and New Zealand Vertical Datum (NZVD2016). The data was converted from NZGD2000 ellipsoidal heights into the orthometric height system using the LINZ NZGeoid16 separation model. The products are tiled into NZTopo50 map sheet tiles as noted below.

The following details the folder contents:

- Data Extent: Extent is the limit of the block area within the project area
This dataset is supplied in SHP format
- Raw Point Cloud: Contains the unclassified LiDAR point cloud points as they were prior to being classified
This dataset is supplied in ASPRS LAS v1.4 format
- Classified Point Cloud: Contains the LiDAR point cloud points that have been classified
This dataset is supplied in ASPRS LAS v1.4 format

Surface Type	Classification	Point Class
Raw	1	Unclassified
Ground	2	Ground
Above Ground	3	Low Vegetation
Above Ground	4	Medium Vegetation
Above Ground	5	High Vegetation
Above Ground	6	Buildings
Above Ground	7	Low Noise
Above Ground	9	Water
Above Ground	18	High Noise

- Gridded DEM: Contains the gridded ground surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Gridded DSM: Contains the gridded top of surface (1 m separation grid)
This dataset is supplied in raster GeoTIFF format
- Contours: Contains 0.5 m contours. The contours were interpolated from a smoothed TIN created using the LiDAR point cloud dataset. The contours are classified into majors and minors. Four minors to every major and shown on different levels.
This dataset is supplied in SHP format
- Breaklines: Breaklines representing all hydro-flattened features
This dataset is supplied in SHP format
- Intensity: Contains the raster images created using the intensity values of the LiDAR returns
This dataset is supplied in TIF/TFW format
- Tile Layout: Tiles is the tile layout for the project area
Tile size 1:1,000 sheet layout (480 x 720 m)

Tile dataset is supplied in SHP format
File Listing: Supplied in TXT format
Metadata Report: Supplied in PDF format

All digital data supplied via AZURE. Data was couriered to Peter Inwood, Tasman District Council, on **30/08/2021**.

If you have requirements for the data in other file formats, map projections please contact Aerial Surveys.

License/Copyright

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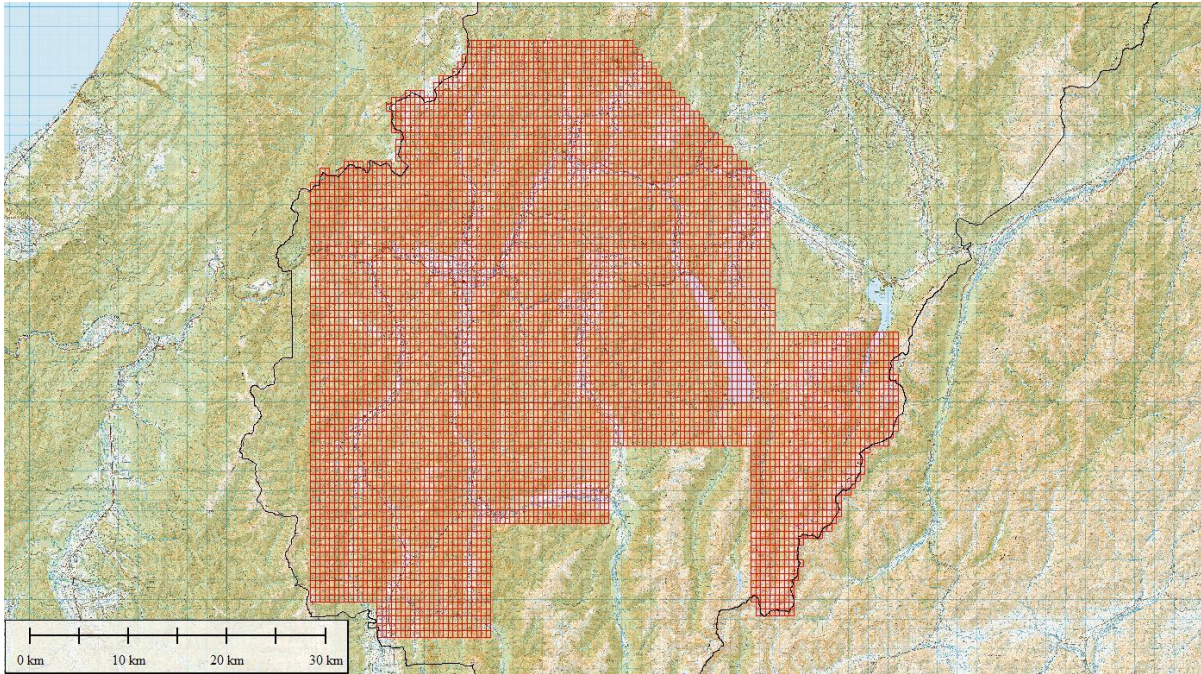
Tasman District Council intends to release the data under Creative Commons license (CC BY). In doing so any data that is shared, copied or distributed must have the required acknowledgements and attributions for the ortho imagery and DEM products provided in this project.

Please note that this delivery includes 8 DEM replacement files being part of BLOCK 1 Part2. They are all at the join between Block 1 part 2 and Block 2.

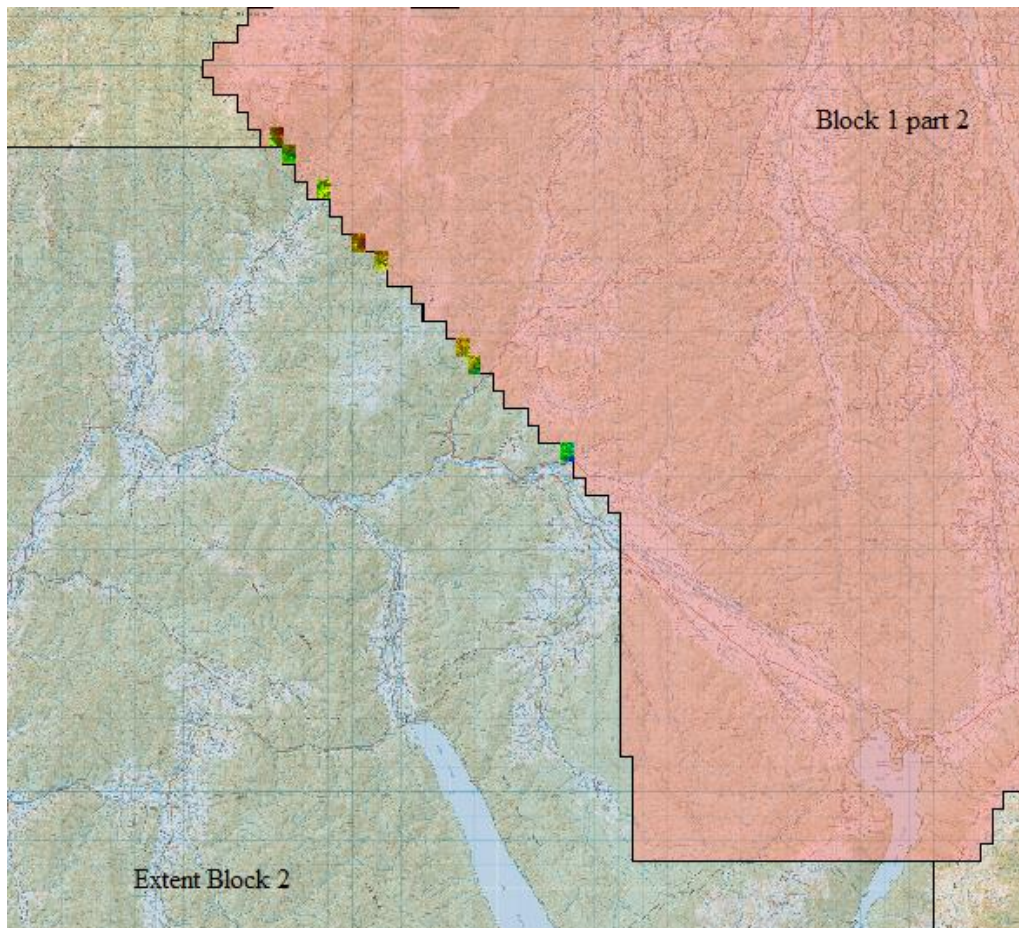
Additional resupply Tile layouts for Block 1 Part 1 and Part2 with DATEFLOWN attribute

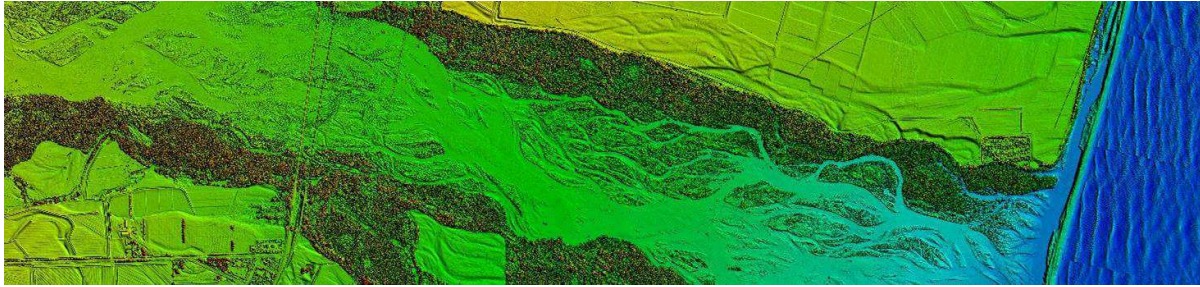
Appendix A: Project Area

The tile layout for Block 2 is shown in red.



Map showing the position of the replacement DEM BLOCK 1 Part2





Metadata

TASMAN DISTRICT COUNCIL

TASMAN – 2019-25 PGF LiDAR SURVEY

Products Block 4

AERIAL SURVEYS PROJECT No: FPFA1264

Summary

Project

An Airborne Laser Scanner survey was conducted over the Tasman area of interest totalling approximately 8,136 km². The area is located in the Tasman Region of the South Island.

Data

The data was processed into various digital map data products. The products included for this dispatch contain:

- Raw Point Cloud
- Classified Point Cloud
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- Intensity
- Hydro-Flattening Breaklines
- Contours
- Tile Layout
- File Listing
- QA Report
- Metadata Report (this report)

Project Report

Safety: No safety Incidents were reported during the project.

Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft.

Ground Support: GPS base station data was provided by Global Surveys Ltd and LINZ base stations. The ground check points were acquired by Sounds Surveying Ltd.

Data Processing: Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using auto algorithms across the project area.

Data Presentation: The data provided on this volume has been supplied in accordance with a specification agreed with Tasman District Council.

Project Contacts:

Tasman DC Database Information Administrator: Peter Inwood (Ph. (03) 543 8489 x DDI)

Aerial Surveys Technical & Sales: Dave Froggatt (Ph. (03) 547 0044)

Data Acquisition

The project area is that shown in the shapefile 'LiDARTilesTasman2020_Fpfa1264-Block4.shp' that accompanies the dataset. A map showing this area of interest is included in Appendix A.

Capture Dates

The LiDAR survey was captured on the following dates:

30 April 2020, 6, 9, 15 May 2020, 12 August 2020, 22, 23, 24 October 2020, 1 December 2020, 7 April 2021, 20, 24 May 2021, 8, 9 June 2021, 15 October 2021, 8 December 2021, 3, 22, 30 January 2022

LiDAR survey was collected using Aerial Surveys Optech Galaxy PRIME system.

Survey Specification:

- Scanner: Optech Galaxy PRIME
- Flying Height: 2,925 m AMGL
- Scan Angle FOV: 52.0 degrees
- Scan Frequency: 45 Hz
- Pulse Rate: 400 kHz
- Swath Overlap: 55%
- Swath Points Per M²: 4

Sounds Surveying Ltd field surveyed check sites that were used to verify the accuracy of the processed ground dataset.

Data Processing

The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSpac software.

Benchmarks: ppctx

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.

StDev_DZ	Mean_DZ	RMSE_DZ	CI95_DZ
0.048	-0.002	0.048	0.094

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 land cover and terrain.

Product Deliverables

All spatial data for this project provided in terms of New Zealand Transverse Mercator 2000 (NZTM2000) horizontal and New Zealand Vertical Datum (NZVD2016). The data was converted from NZGD2000 ellipsoidal heights into the orthometric height system using the LINZ NZGeoid16 separation model. The products are tiled into NZTopo50 map sheet tiles as noted below.

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- Gridded DEM: Contains the gridded ground surface (1 m separation grid)
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- Breaklines: Breaklines representing all hydro-flattened features
This dataset is supplied in SHP format
- Intensity: Contains the raster images created using the intensity values of the LiDAR returns
This dataset is supplied in TIF/TFW format
- Tile Layout: Tiles is the tile layout for the project area
Tile size 1:1,000 sheet layout (480 x 720 m)

Tile dataset is supplied in SHP format
File Listing: Supplied in TXT format
Metadata Report: Supplied in PDF format

All digital data supplied via AZURE for LINZ and Peter Inwood, Tasman District Council, on 31/12/2022.

If you have requirements for the data in other file formats, map projections please contact Aerial Surveys.

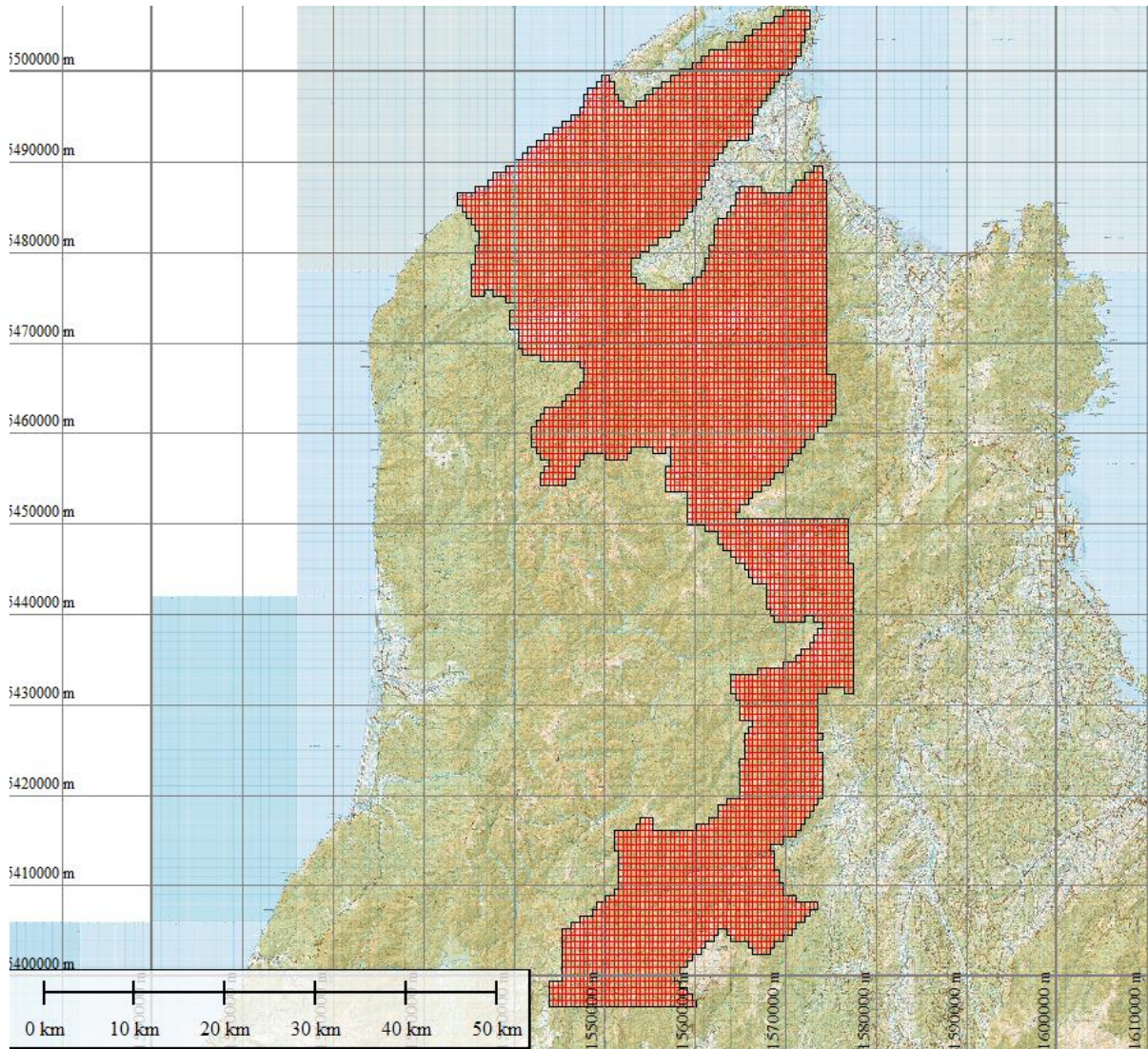
License/Copyright

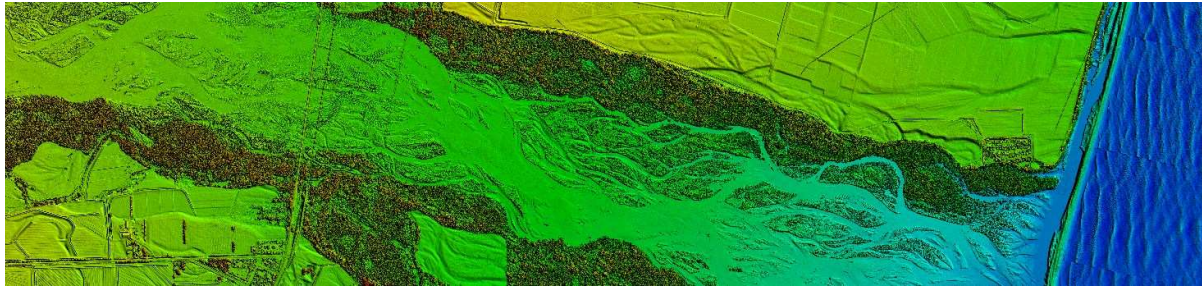
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Appendix A: Project Area

The tile layout for Block 4 is shown in red.





Metadata

TASMAN DISTRICT COUNCIL TASMAN – 2019-25 PGF LiDAR SURVEY

AERIAL SURVEYS PROJECT Nº: FPFA1264

Summary

Project

An Airborne Laser Scanner survey was conducted over the Tasman area of interest totalling approximately 8,136 km². The area is located in the Tasman Region of the South Island.

Data

The data was processed into various digital map data products. The products included for this dispatch contain:

- AOI
- Ground Control Data
- Raw Point Cloud
- Classified Point Cloud
- Gridded DEM
- Gridded DSM
- Contours
- Hydro-Flattening Breaklines
- Flightline Shapefiles
- Tile Layout
- File Listing
- Metadata Report (this report)

Project Report

Safety: No safety Incidents were reported during the project.

Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft.

Ground Support: GPS base station data was provided by Global Surveys Ltd and LINZ base stations. The ground check points were acquired by Sounds Surveying Ltd.

Data Processing: Reduction of the ALS data proceeded without any significant problems. Laser strikes were classified into ground and non-ground points using auto algorithms across the project area.

Data Presentation: The data provided on this volume has been supplied in accordance with a specification agreed with Tasman District Council.

Project Contacts:

Tasman DC Database Information Administrator: Peter Inwood (Ph. (03) 543 8489 x DDI)

Aerial Surveys Technical & Sales: Dave Froggatt (Ph. (03) 547 0044)

Data Acquisition

The project area is that shown in the shapefile 'TasmanPGF_2019-25_LiDAR_Block5_DataExtent.shp' that accompanies the dataset. A map showing this area of interest is included in Appendix A.

Capture Dates

The LiDAR survey was captured on the following dates:

30/04/2020	2/07/2020	7/04/2021	15/10/2021
6/05/2020	12/08/2020	20/05/2021	22/10/2021
9/05/2020	22/10/2020	24/05/2021	8/12/2021
15/05/2020	23/10/2020	8/06/2021	3/01/2022
22/06/2020	24/10/2020	9/06/2021	22/01/2022
23/06/2020	1/12/2020	4/08/2021	30/01/2022
30/06/2020	16/01/2021	14/10/2021	

LiDAR survey was collected using Aerial Surveys Optech Orion Galaxy PRIME system.

Survey Specification:

- Scanner: Optech Galaxy PRIME
- Flying Height: approx. 2,925 m AMGL
- Scan Angle: 28 to 40 degrees
- Scan Frequency: 48 - 61 Hz
- Pulse Rate: 300 - 450 kHz
- Swath Overlap: 55%
- Swath Points Per M²: 4

Sounds Surveying Ltd field surveyed check sites that were used to verify the accuracy of the processed ground dataset.

Data Processing

The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSPac software.

Base Station Positions: PPRTX

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.

	StD_Dev	RMS	CI95	Avg_Diff
Control Ground Points	0.039 m	0.039 m	0.076 m	-0.001 m
Check Ground Points	0.051 m	0.051 m	0.1 m	0.006 m

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 a sparse triangular irregular network (TIN) from the supplied LiDAR points and then classified according to required classes by using automatic iterative process followed by manual correction. Terrascan’s inbuilt macros with different parameters were used to classify low points, ground points, buildings, temporary features and finally vegetation.

The Digital Elevation (DEM) was derived using a point to TIN and TIN to Raster process, using a Natural Neighbour interpolation. Hydro flattening was performed as per part 7 of PGF version New Zealand National Aerial Lidar Base Specification Jan 2020.

Alpine areas were identified and classified as bare ground within the alpine polygons generated to council standards.

Product Deliverables

All spatial data for this project provided in terms of New Zealand Transverse Mercator 2000 (NZTM2000) horizontal and New Zealand Vertical Datum (NZVD2016). The data was converted from NZGD2000 ellipsoidal heights into the orthometric height system using the LINZ NZGeoid16 separation model. The products are tiled into NZTopo50 map sheet tiles as noted below.

The following details the folder contents:

- AOI: Extent is the limit of the project area
This dataset is supplied in SHP format
- Ground Control Data: All ground control data after survey undertaken
This dataset is supplied in XLSX, PDF and JPG format
- Raw Point Cloud: Contains the unclassified LiDAR point cloud points as they were prior to being classified
This dataset is supplied in ASPRS LAS v1.4 format
- Classified Point Cloud: Contains the LiDAR point cloud points that have been classified
This dataset is supplied in ASPRS LAS v1.4 format

Surface Type	Classification	Point Class
Raw	1	Unclassified
Ground	2	Ground
Above Ground	3	Low Vegetation
Above Ground	4	Medium Vegetation
Above Ground	5	High Vegetation
Above Ground	6	Buildings
Above Ground	7	Low Noise
Above Ground	9	Water
Above Ground	18	High Noise

Gridded DEM:	Contains the gridded ground surface (1 m separation grid) This dataset is supplied in raster GeoTIFF format
Gridded DSM:	Contains the gridded top of surface (1 m separation grid) This dataset is supplied in raster GeoTIFF format
Contours:	Contains 0.5 m contours. The contours were interpolated from a smoothed TIN created using the LiDAR point cloud dataset. The contours are classified into majors and minors. Four minors to every major and shown on different levels. This dataset is supplied in SHP format
Breaklines:	Breaklines representing all hydro-flattened features This dataset is supplied in SHP format
Flight Lines:	Flight lines as ESRI polygons This dataset is supplied in SHP format
Tile Layout:	Tiles is the tile layout for the project area Tile size 1:1,000 sheet layout (480 x 720 m) Tile dataset is supplied in SHP format
File Listing:	Supplied in TXT format
Metadata Report:	Supplied in PDF format

All digital data supplied on Azure drive. It was uploaded on 26 May 2023.

If you have requirements for the data in other file formats, map projections please contact Aerial Surveys.

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Tasman District Council intends to release the data under Creative Commons license (CC BY). In doing so any data that is shared, copied or distributed must have the required acknowledgements and attributions for the ortho imagery and DEM products provided in this project.

Appendix A: Project Area

The tile layout is shown in red.
The project extent area is shown in blue.
Tasman Block 2 is shown in black.

