

West Coast 0.4m Rural Aerial Photos (2009-2011)

Title

West Coast 0.4m Rural Aerial Photos (2009 – 2011)

Creator

LINZ - Land Information New Zealand

Date

2011

Description

Orthophotography for the West Coast region taken during 2009 to 2011. Coverage encompassed ~60% of the West Coast Regional councils area. Imagery was captured for the 'MW-Lass (Manawatu-Wanganui LASS Limited)' by NZ Aerial Mapping Ltd, 208 Warren Street, PO Box 6, Hastings 4156, New Zealand Data has subsequently been provided to LINZ and this comprises:

- 1,623 x ortho-rectified RGB GeoTIFF images in NZTM projection, tiled into the LINZ Standard 1:5,000 tile layout.
- Tile layout in NZTM projection containing relevant information. The supplied imagery is in terms of New Zealand Transverse Mercator (NZTM) map projection. The products are tiled into NZTopo50 1:5,000 tiles. Please refer to the supplied tile layout shape file for specific details, naming conventions, etc. Imagery supplied as 40cm pixel resolution (0.4m GSD), 3-band (RGB) uncompressed GeoTIFF. The final spatial accuracy is +/-2.5m (@ 90% confidence). Index tiles for this dataset are available as layer [West Coast 0.4m Rural Aerial Photos Index Tiles (2009 - 2011)] (<http://data.linz.govt.nz/layer/1894>)

Source

Data Acquisition: The project area covered much of the local authority areas of Buller DC, Grey DC & Westland DC, primarily coastal & productive farmland. The eastern areas of the region - along the western boundary of the Southern Alps - were not captured due to costs implications & a lack of demand for new imagery in those areas (most of which are under Dept of Conservation jurisdiction). The coverage flown is approximately 14,100 sq km. The NZAM numbers pertaining to this photographic survey are Sn50850 & Sn50887P. Digital imagery was collected between March 2010 – March 2011 (see photocentre shape file for specific frame dates), using NZ Aerial Mapping's Microsoft UCX & UCXp large-format digital cameras. The imagery was collected flying between 18,000' – 22,000' above mean ground, using 60% forward & 30% minimum overlaps. Collected imagery was cloud-free, sun angle of not less than 30-degrees. A total of 3,625 frames were accepted for final processing into orthos. During the aerial data acquisition use was made of a mixture of NZAM-established geodetic marks (NZAM0018 at Westport Airport) & LINZ-maintained geodetic marks B8CY (Tatere Stream) & 6787 (Inangahua). NZAM's Rockwell Commander 690, Aero Commander 680 & Cessna 402 aircraft were used for the survey. ~30 hours 'on-survey' flying time was required to complete the photography. Data Processing: Image Processing was undertaken following QA of the flown photography. Initial check's included ensuring there is was no evidence of cloud, cloud-shadow, smoke, haze or other issues which may cause problems during downstream processing. Imagery was then converted from 'Level O' (readable only in the proprietary image software) into 'Level 3' - raw, uncorrected RGB imagery. Aerial Triangulation (AT) followed. This process relates one frame to the next, then one run to the next until a continuous 'parallax-free' block of photography is created. Introduction at this

point of the surveyed ground control helps 'tie' the block of photography to true ground coordinates from which mapping then commences. NZAM use UltraMap v2.3 & ORIMA software for the image processing & AT components. 36 x photo-identifiable detail points were surveyed, post-photography, via Vince Belgrave of Sounds Surveying Ltd, Picton. Trigs and other existing control from previous projects were used to strengthen the block adjustment or as independent checks on position during final QA of the orthos. DTM creation was undertaken by NZAM's Indian-based subcontractors – Genesys International Corporation once AT was complete. Each pair of overlapping photographs was viewed in a stereo environment and a terrain model created for that portion of the earth's surface. Pixel matching & auto-correlation techniques were used - as they are a quick & efficient method of achieving the desired result. Manual checks by stereo compilation staff were done to ensure gross errors were corrected & the DTM accurately reflected the terrain surface. Final DTM's took the form of breaklines (along ridges, valleys & sharp terrain changes) and masspoints (individual xyz points) to infill & add density to the ground model. A Triangulated Irregular Network (TIN) was then created & used for the ortho-rectification process. Ortho-rectification is the process of removing (from the image) the effects of camera tip / tilt & displacement caused by terrain relief. During this process each frame is 'draped' over the terrain model, the photograph then becomes 'scaled' & 'levelled' and in terms of true ground coordinates. Mosaic lines between frames were created, edited (normally along physical features such as roads, rivers, ridges or similar geographical features) & used during the final 'stitching' of frames together. Tiling was then done into the agreed tile layout & rectified imagery output in the appropriate formats.

Coverage

-44.0832066669 168.56458511 -41.104854196 172.446158154

Identifier

<https://data.linz.govt.nz/layer/51928-west-coast-04m-rural-aerial-photos-2009-2011/>

Type

grid

Language

eng

Subject

imageryBaseMapsEarthCover