

# Northland 0.1m Urban Aerial Photos (2014-2015)

## Metadata

### File Identifier

73c31524-afc3-7256-5810-602f890141ad

### Language

eng

### Character Set

#### Character Set Code

utf8

### Hierarchy Level

#### Scope Code

dataset

### Hierarchy Level Name

dataset

## Contact

### Responsible Party

#### Organisation Name

Toitū Te Whenua Land Information New Zealand

#### Position Name

National Imagery 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

customersupport@linz.govt.nz

### Role

#### Role Code

pointOfContact

#### Date Stamp

Date

2016-05-16

#### 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

Northland 0.1m Urban Aerial Photos (2014-15)

Date

#### Abstract

Orthophotography in the Northland Region taken in the flying season (summer period) 2014 - 2015. Coverage is of urban areas with the Far North district, The Kaipara district, and Whanagei City council areas. Imagery was captured for the 'Northland Aerial Imagery Consortium (NAIC)' by Aerial Surveys Ltd, Unit A1, 8 Saturn Place, Albany, 0632, New Zealand. Data comprises: •6,550 ortho-rectified RGB GeoTIFF images in NZTM projection, tiled into the LINZ Standard 1:500 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 1:500 tiles. Please refer to the supplied tile layout shape file for specific details, naming conventions, etc. Imagery supplied as 10cm pixel resolution (0.1m GSD), 3-band (RGB) uncompressed GeoTIFF. The final spatial accuracy is  $\pm 0.15\text{m}$  @ 95% confidence level in clear open spaces (2 sigma) over area of interest. Index tiles for this dataset are available as layer [Northland 0.1m Urban Aerial Photos Index Tiles (2014-15)](<http://data.linz.govt.nz/layer/3394>)

#### Status

Progress Code

completed

#### Point Of Contact

Responsible Party

Organisation Name

Toitū Te Whenua Land Information New Zealand

Position Name

National Imagery Manager

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customersupport@linz.govt.nz

Role

Role Code

pointOfContact

Resource Format

Format

Name

\*.xml

Version

Unknown

Resource Constraints

Legal Constraints

Use Limitation

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Access Constraints

Restriction Code

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Resource Constraints

Security Constraints

Classification

Classification Code

unclassified

Spatial Representation Type Code

grid

Representative Fraction

Denominator

Integer

1000

Language

eng

Character Set

Character Set Code

utf8

Topic Category Code

imageryBaseMapsEarthCover

Extent

EX\_ Extent

Geographic Element

EX\_ Geographic Bounding Box

173.110201677174.602587429-36.1749915406-34.8008067143

## Distribution Info

### Distribution

#### Transfer Options

##### Digital Transfer Options

###### On Line

###### Online Resource

###### Linkage

###### URL

<https://data.linz.govt.nz/layer/53399-northland-01m-urban-aerial-photos-2014-2015/>

## 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: The aerial photography for this project was captured within the 2014/15 flying season (September 2014 – April 2015) on 10, 25, 26 October 2014, 09, 10, 11 November 2014, 04 January 2015, 03, 04 May 2015. All photography was captured using Vexcel's digital UCLp and UCE cameras with flying height of UCLp 3829ft and UCE 6312ft. Data Processing: All aspects of the data processing from imagery processing to DTM creation and ortho production and product deliverables was undertaken in-house by Aerial Surveys and Cyient staff. Map Projection: All spatial data for this project provided in terms of New Zealand Transverse Mercator (NZTM) map projection. The datum is New Zealand Geodetic Datum 2000. The height datum is orthometric One Tree Point 1946 (sea level). Image Processing and Aerial Triangulation: All imagery has gone through QA checks ensuring there is no cloud cover and cloud shadow. During aerial acquisition the aircraft on-board GPS navigation data and ground base station data collected and post processed. Imagery processed to level 3 and checked for colour correctness/radiometry and even tonal balance across each project area. The aerial triangulation brings together the GPS data and imagery using a two part process which stitches the imagery together using tie point matching for the relative orientation phase and observing ground control points for the absolute orientation phase. LINZ control, 8th order horizontal and 4th order vertical and other existing control from Aerial Surveys control data base were used to strengthen the block adjustment or as independent checks on position during final QA of the ortho imagery. A final report is generated to check RMSE values are within specification. DTM Creation: The DTM creation for the urban areas was collected from stereo imagery using photogrammetric techniques, largely automated pixel matching and auto-correlation process that creates mass points of the terrain surface with further manual editing to remove points on water bodies and extensive breaklines added around water bodies and along all ridges, valleys and areas of steep terrain change, such as kerbs, retaining walls, drains. In areas of dense vegetation form lines are collected. The final DTM took the form of breaklines and mass points. A Triangulated Irregular Network (TIN) was then created and used for the ortho-rectification process. DTM Accuracy:  $\pm 0.2\text{m}$  @ 95% confidence level in clear open areas (2 sigma) RGB and Ortho Rectification Process: Ortho rectification is the process of removing (from the image) the effects of camera tip/tilt and displacement caused by terrain relief. During this process each frame is 'draped' over the terrain model and the photograph then becomes 'scaled' and 'levelled' in terms of true ground coordinates. The generation of seamlines between frames follow natural physical features such as ridges, valleys, roads and rivers. The seamlines are used for the final ortho mosaic that stitches the imagery together using feather mosaicking

techniques. The ortho imagery is then extracted aligned to LINZ 1:500 sheet tile layout.

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