



# ALGG*i*

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## LiDAR and Orthoimagery Project

Auckland Local Government Geospatial Information

A L G G i

Consistent High  
quality GIS Data  
across the  
Auckland region  
accessible to  
Benefit  
Customers,  
Partners,  
Businesses and  
Government

# Jointly Owned Regional Datasets

# Auckland Local Government Geospatial Information

Supply

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Demand

## The Data

Planning and Land Use Data

Social and Economic Data

Environmental Data

Other Specific Application Data

Council Infrastructural Asset Data

Utility Service Asset Data

Large Scale Topographical Data

Property/Lot Boundaries

Orthoimagery and LIDAR

Geo Datum 2000

## The Layers

Supporting Policy Outcomes

Utilities & Assets

Fundamental Layers

## The Value

Economic Development

Capacities and Growth

Hazards

School Travel Plans

Council Databases

Important Infrastructure

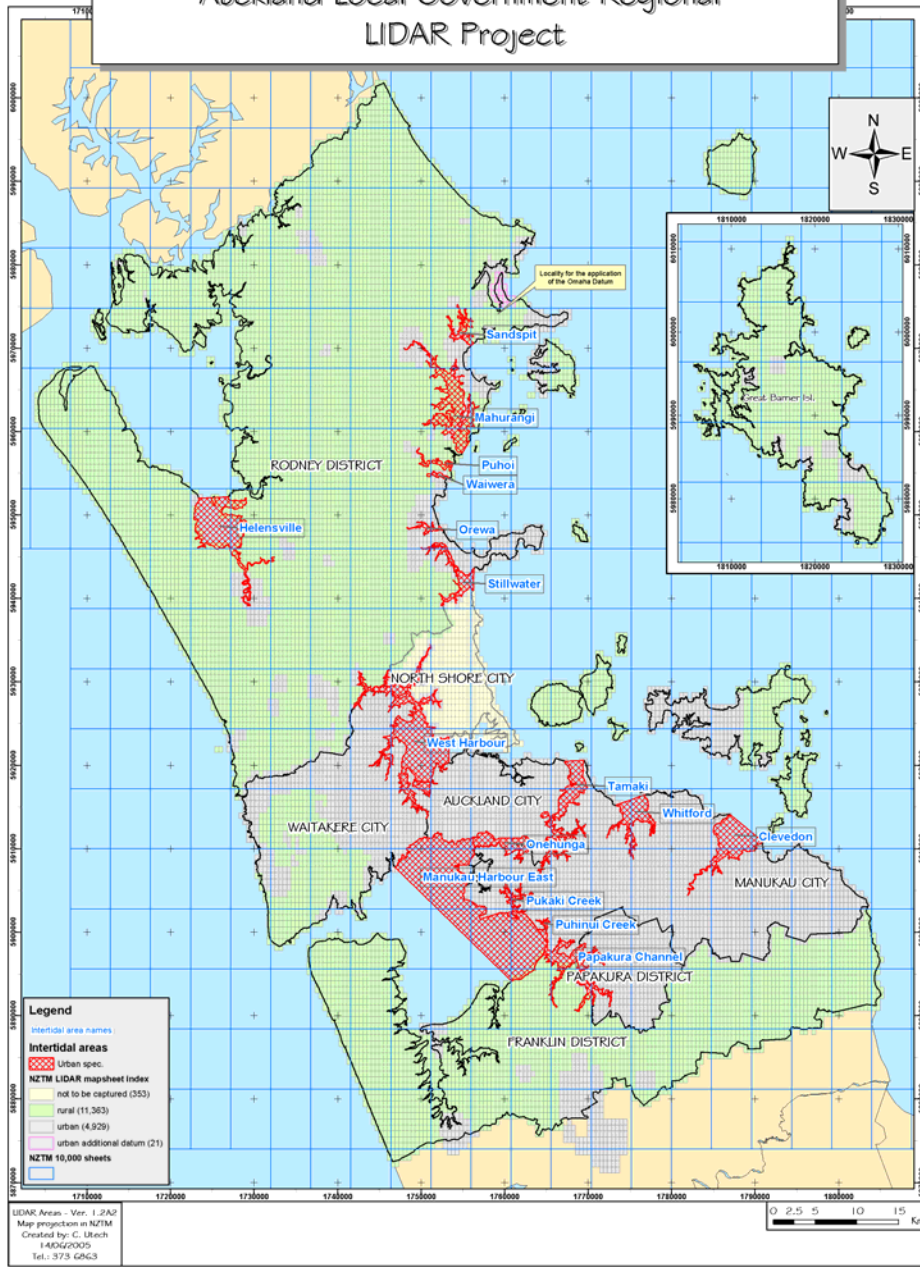
Government Department

Consortium Model

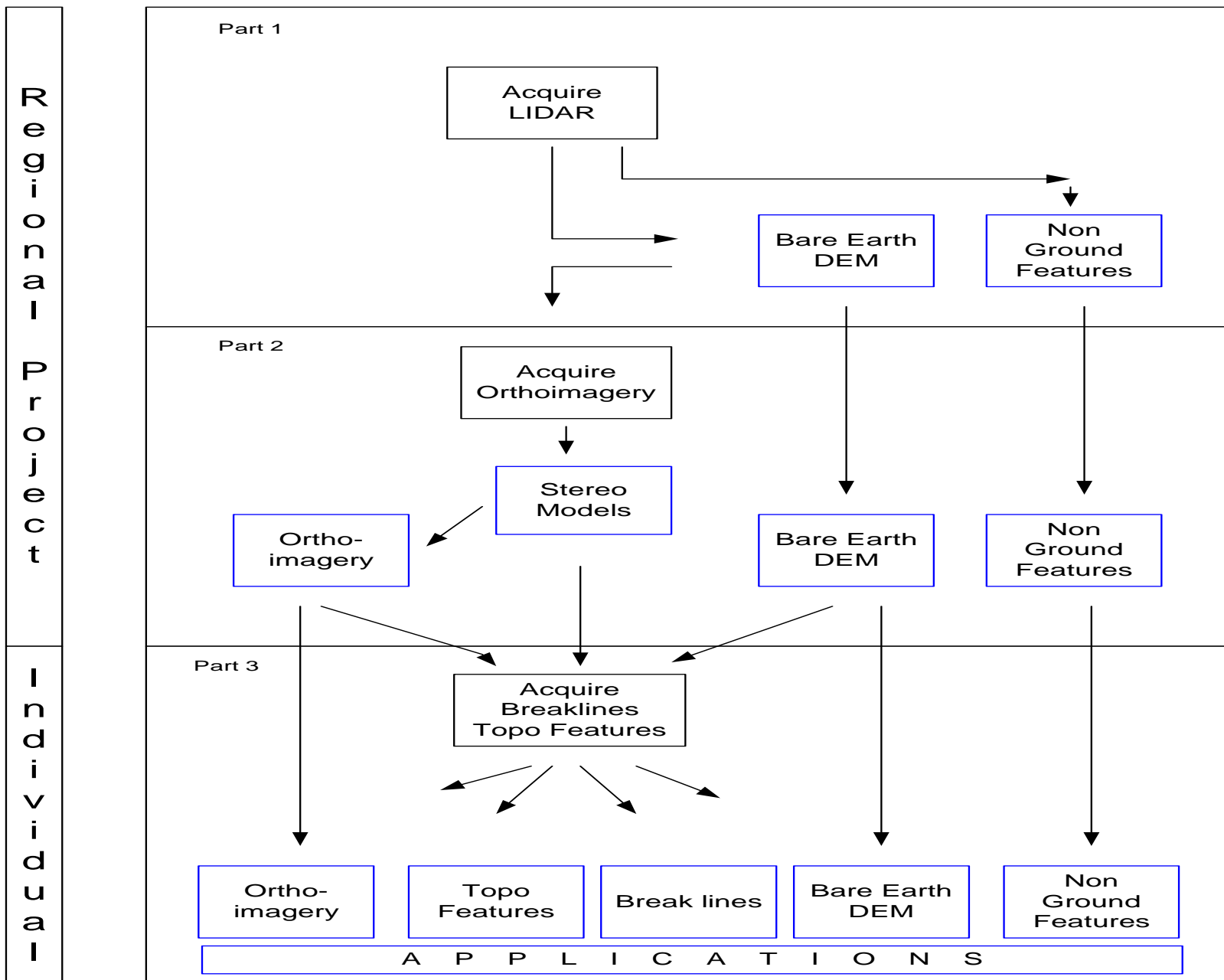
Data Standards

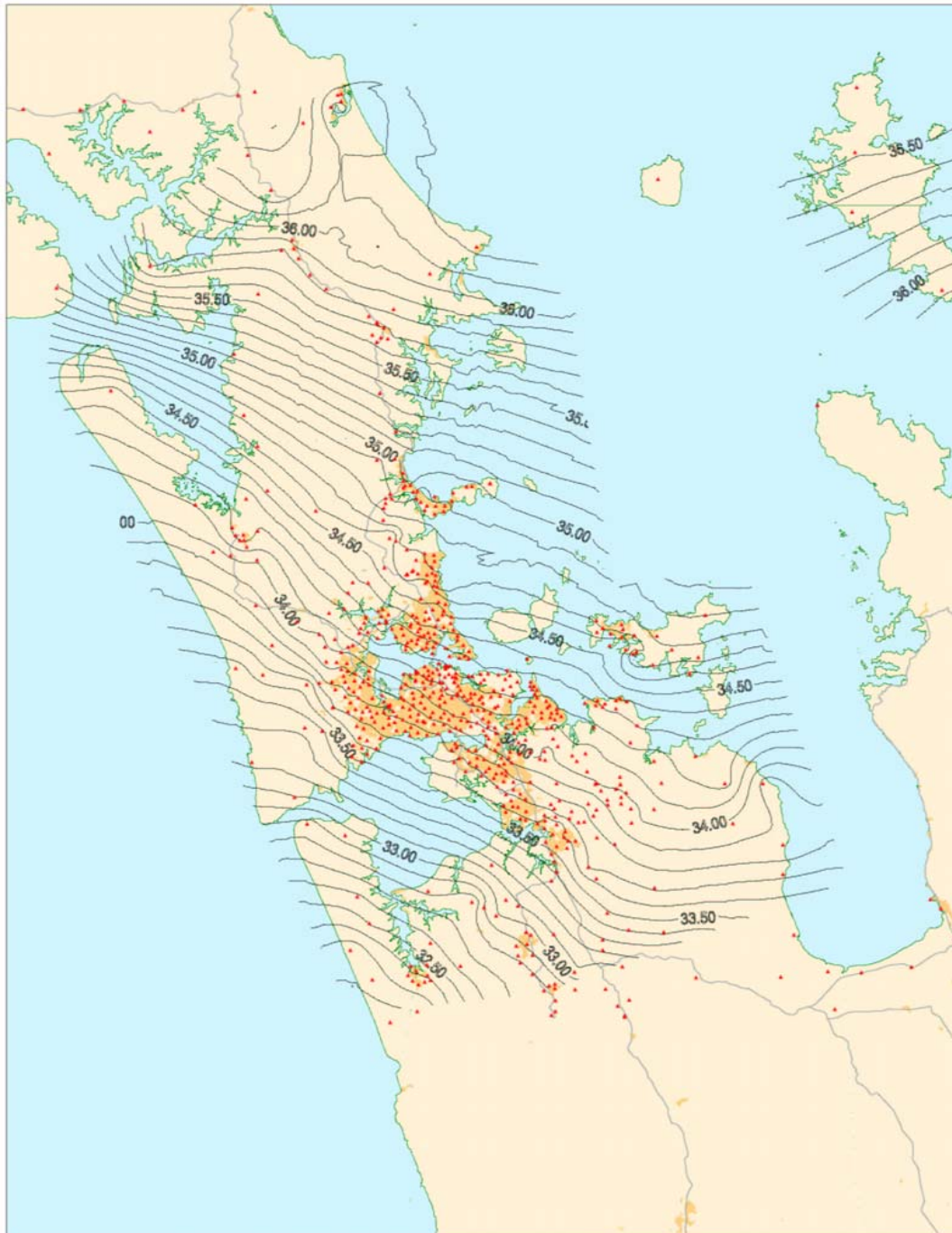
Building Blocks

# Auckland Local Government Regional LIDAR Project



# Regional LIDAR DTM and Orthoimagery Acquisition





Prepared by CoordinatesU ([www.coordinatesu.co.nz](http://www.coordinatesu.co.nz)) for Auckland Regional GIS Shared Services Group  
Scale 1:450000 Auckland Height Conversion Model - June 2005

# Issues with the LiDAR Project

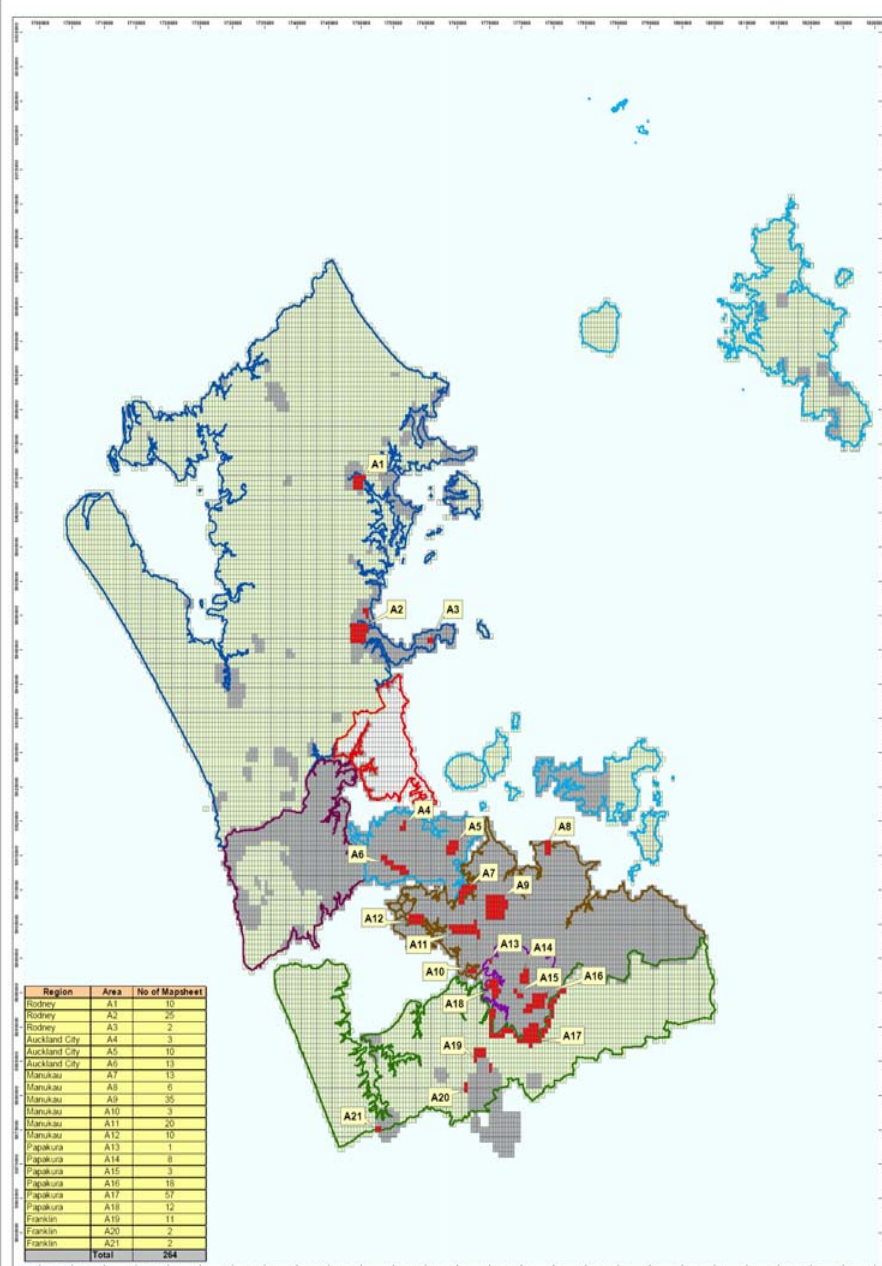
- Point density did not match specification – about 25% below (detailed density mapping done as part of QA).
- Long processing delays and errors in processing (due to size of the project, NZ conditions, contractor failings).
- A number of minor data issues / errors in the final dataset – 3 deliveries required before the data was accepted (still with minor errors).
- Quality Assurance by a network of 600km of road GPS generally confirmed the spatial accuracy.
- A number of small areas of data gaps – needed re-flying and replacing (including contours).

# Issues with the LiDAR Data

- Point density deficient by about 25%
- Delineation of streambeds is critical for flood modelling. The DTM is often poor in these areas (due to tree cover and change of slope causing data gaps due to LiDAR processing methodology).
- Tree covered areas still need field survey for flood hazard modelling.
- Rogue DTM points on buildings caused occasional building distortions in the orthoimagery.
- Height differences (within specification) between adjacent runs can cause flood modelling issues, particularly in flat areas.
- The nature of the data, the size of the dataset and the complexity of the acquisition methodology makes it difficult to identify errors in the final data (and time consuming to correct them).

# LiDAR Project: Conclusions

- Despite the problems, delays and technical issues, still a successful project with a huge improvement for flood hazard modelling.
- Over \$1million saved on the LiDAR and Ortho combined projects by the 8 Council collaboration (economies of scale).
- Very careful contractual methods required for LiDAR – with detailed contract specifying precise requirements and quality measures.
- Business model of ‘cost recovery’ starting to work successfully with over 10% of cost recovered through data sales (to help finance future reflies and maintain the data quality). (hope to cost recover 25%+).
- It will take time to understand the full potential uses of the LiDAR dataset, and hence use it fully effectively.
- 21 areas of change reflight in 2007/8 and implanted into the 2005/6 dataset (5% of urban area).



Region	Area	No of Mapsheet
Rodney	A1	10
Rodney	A2	25
Rodney	A3	2
Auckland City	A4	3
Auckland City	A5	10
Auckland City	A6	13
Manukau	A7	13
Manukau	A8	6
Manukau	A9	35
Manukau	A10	3
Manukau	A11	20
Manukau	A12	10
Papakura	A13	1
Papakura	A14	8
Papakura	A15	3
Papakura	A16	18
Papakura	A17	57
Papakura	A18	12
Franklin	A19	11
Franklin	A20	2
Franklin	A21	2
<b>Total</b>		<b>264</b>



**Regional Boundary**

Other North Island	Auckland City	Franklin District
Bay of Plenty	Manukau District	Papakura District
Waikato	North Shore City	Waikato District
Waikato	Waikato District	Waikato District

Scale 1:250000  
 When printed at 1:1 scale  
 Datum: NZDG 2000  
 Projection: New Zealand Transverse Mercator



**LIDAR - Refly Area At Urban Specification, 2007 / 2008**  
 06 July 2007  
 Auckland City - Data Services  
 Suburb GIS  
 Map Number: 1042

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Topographical data 2008  
(building outline impervious surfaces, kerblines)





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