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Enabling the Uptake of New Zealand's Improved National Vertical Datum

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Vertical Datum Improvement

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1. **Improved Geoid (airborne dataset)**
2. **Relationships to other Datums**
3. **Transformational tools and published heights**

New Zealand Height Datasets

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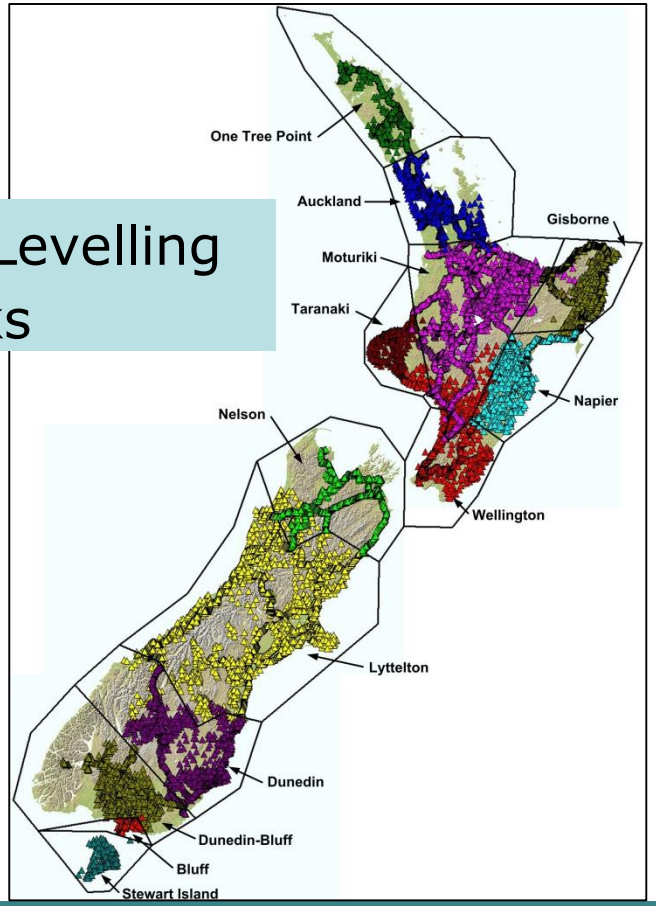
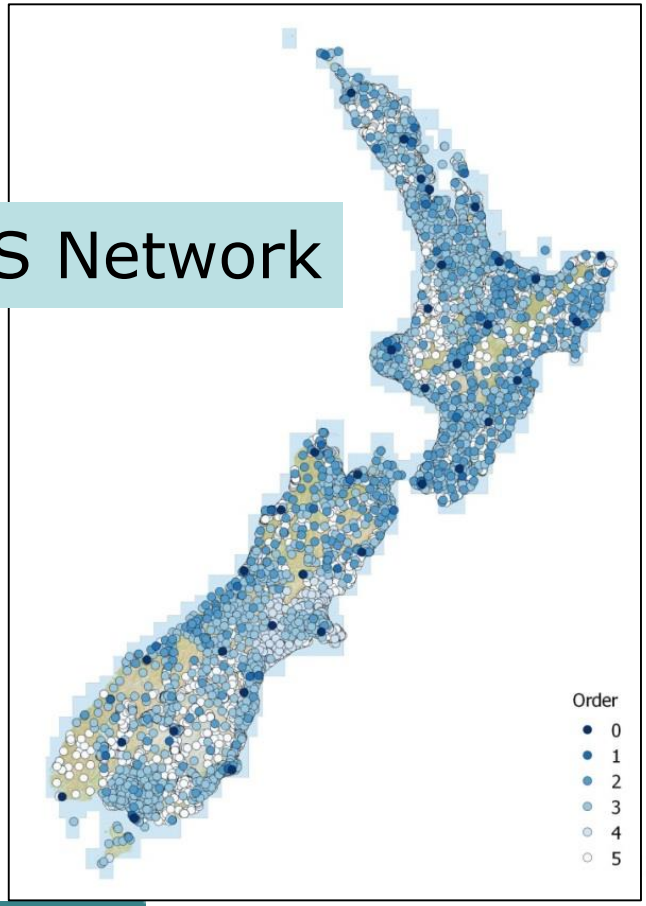
Precise Levelling Networks



GNSS Network



Vertical Datum Improvement Project

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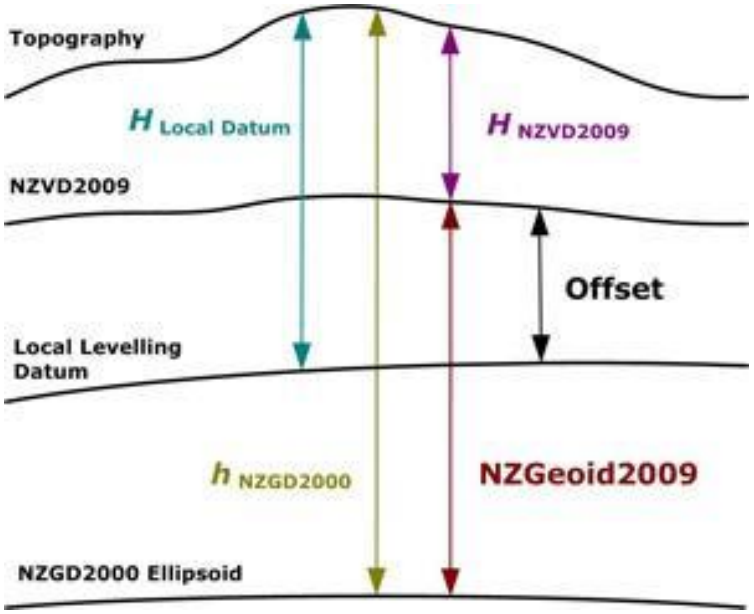
Support the transformation of legacy data to the new datum

VDI Project Aim:

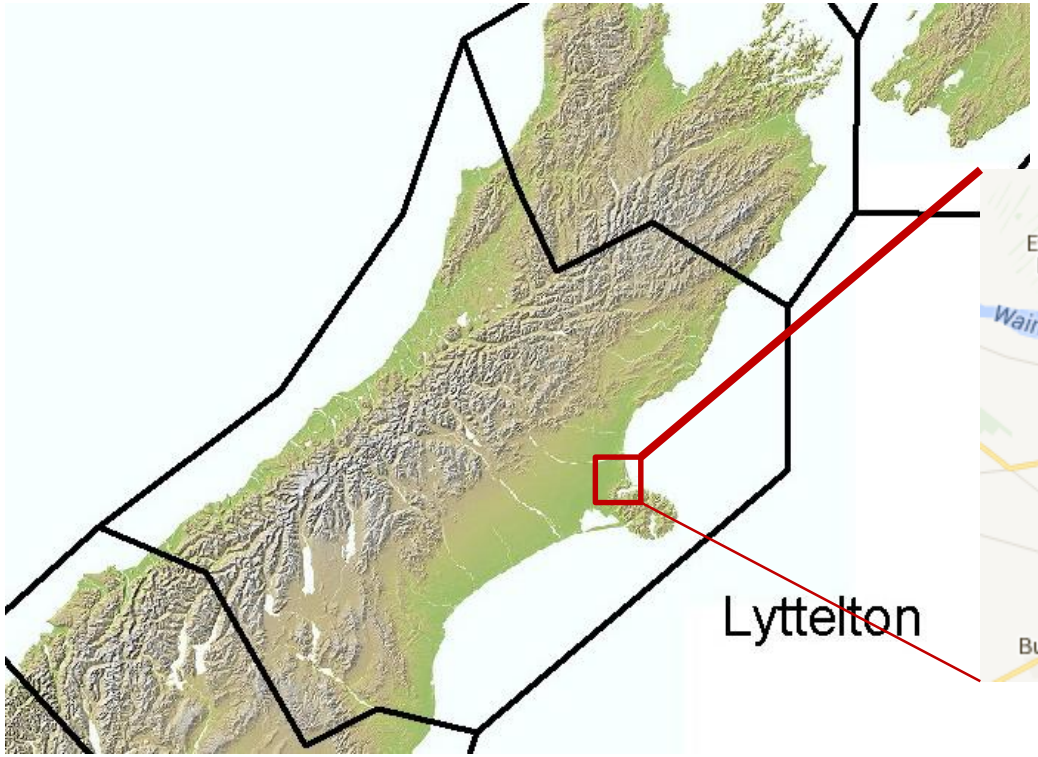
(e) Improved definition of relationships with legacy vertical datums.

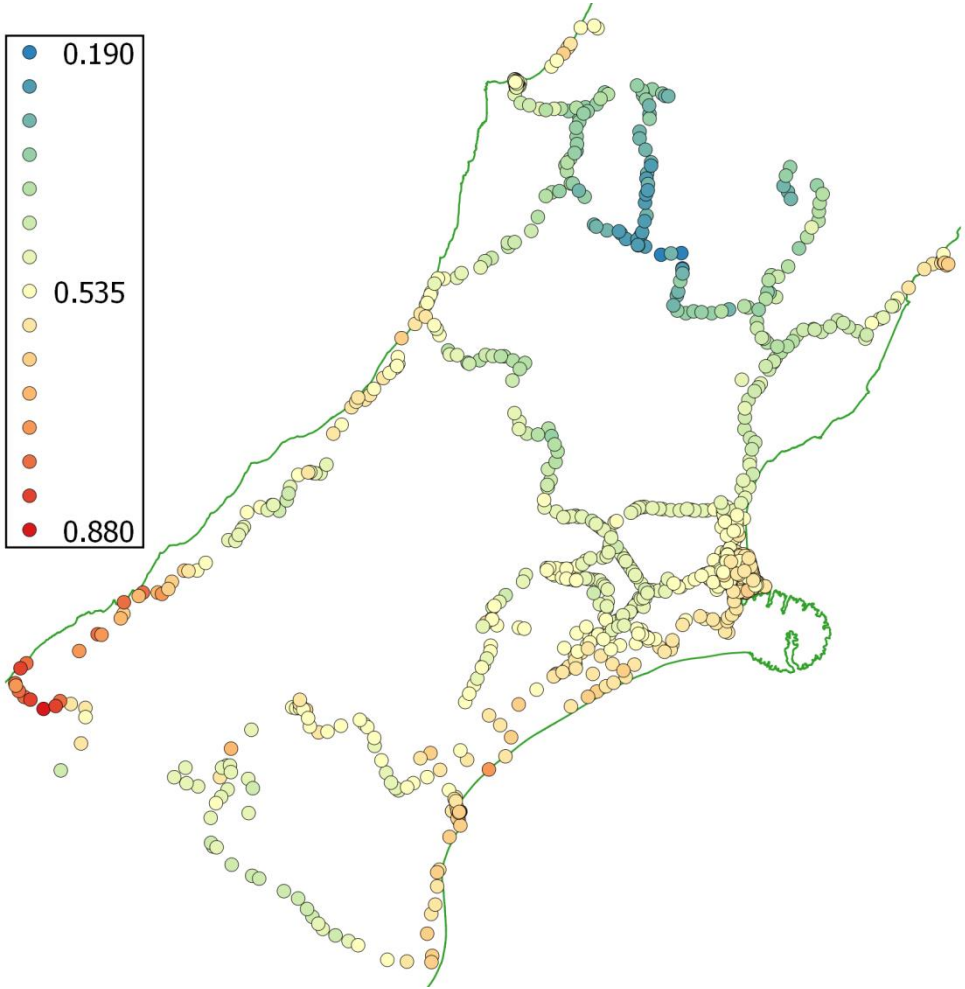


NZVD2009 LVD offsets

MSL Datum	NZGeoid2009 Offset (metres)	Standard Deviation (metres)
One Tree Point 1964	0.06	0.03
Auckland 1946	0.34	0.05
Moturiki 1953	0.24	0.06
Gisborne 1926	0.34	0.02
Napier 1962	0.20	0.05
Taranaki 1970	0.32	0.05
Wellington 1953	0.44	0.04
Lyttelton 1937	**0.47**	**0.09**
Dunedin 1958	0.49	0.07
Dunedin-Bluff 1960	0.38	0.04
Bluff 1955	0.36	0.05
Stewart Island 1977	0.39	0.15

Lyttelton 1937 Datum





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Mean	0.5146
SD	0.09
Range	0.6903

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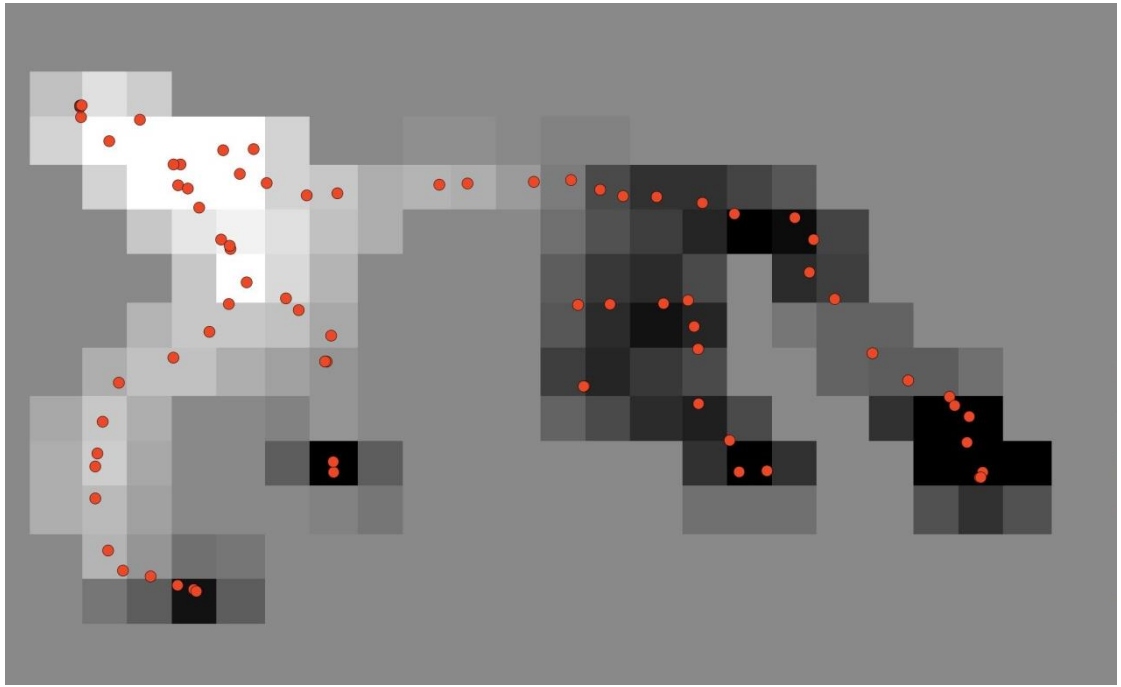
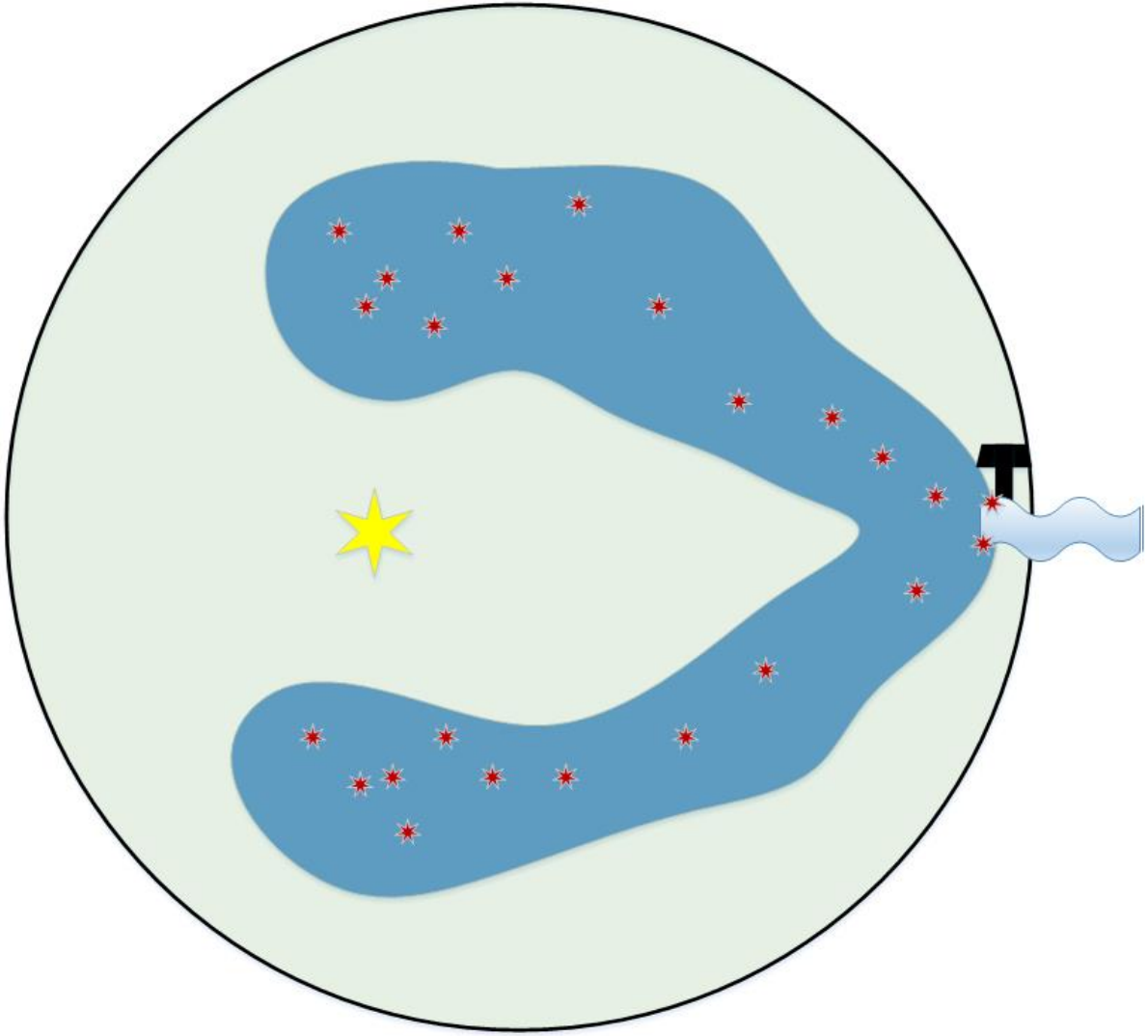
Trended Surface



Null Value?



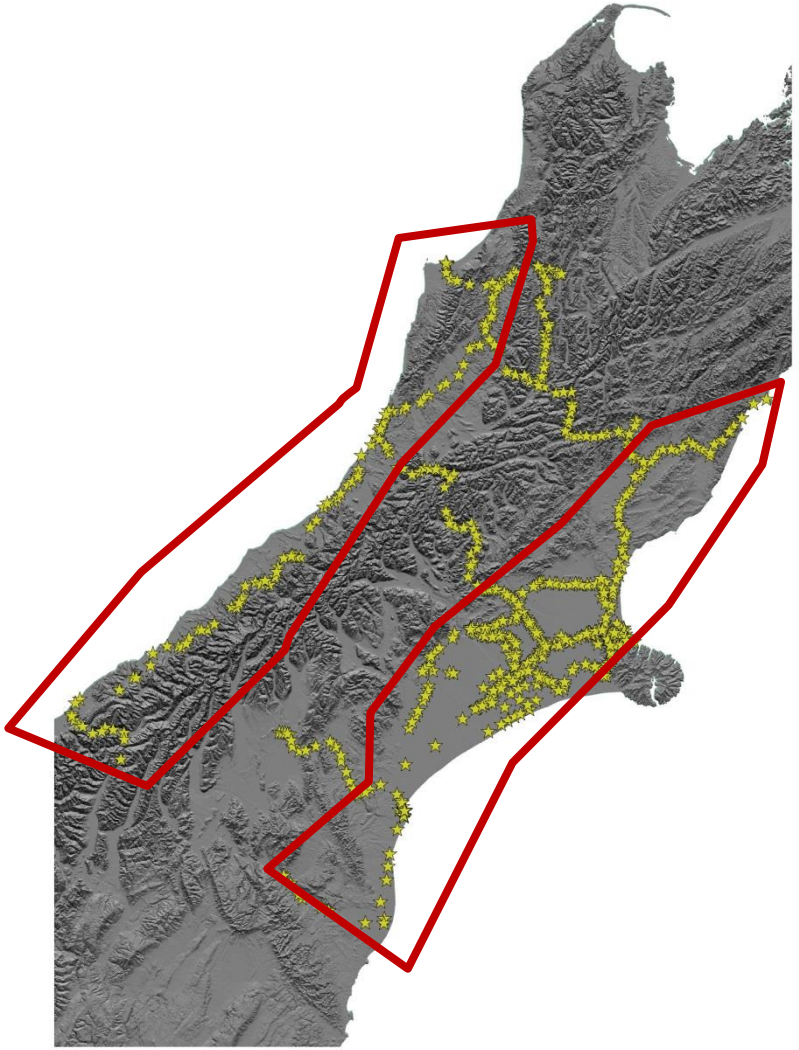
Null Value

Zero?

Value at tide gauge?

Average across LVD?

Natural Breaks?



Summary

- NZVD2016 release date June 2016
- Improved geoid model (2-3 cm)
- Same format as NZVD2009
- Different approach to modelling the datum relationships – Trended Surface
- Datum definition where there is no data

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Questions?

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