Future Development of the New Zealand GNSS Continuously Operating System (PositioNZ)
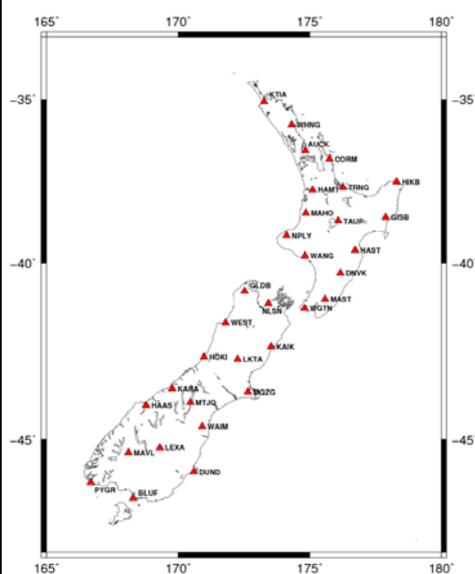
Graeme Blick, Dave Collett, Nic Donnelly and Aaron Jordan

FIG Working Week 2008

Current LINZ PositioNZ network

Primary Objective - Deformation/Datum Monitoring

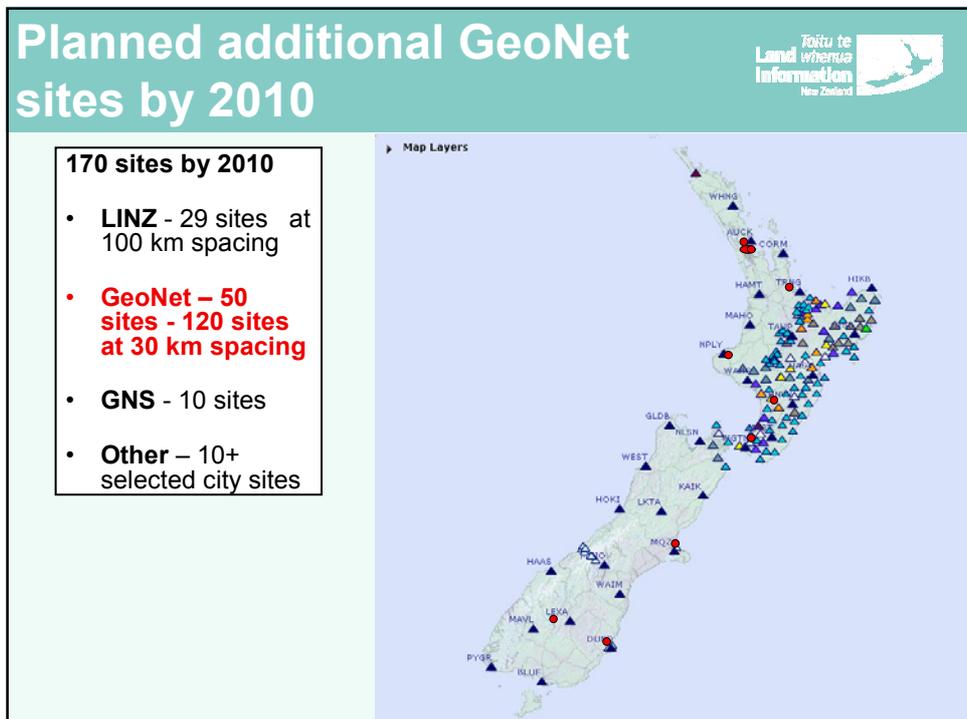**Secondary Objective -** Provision of real-time GNSS data
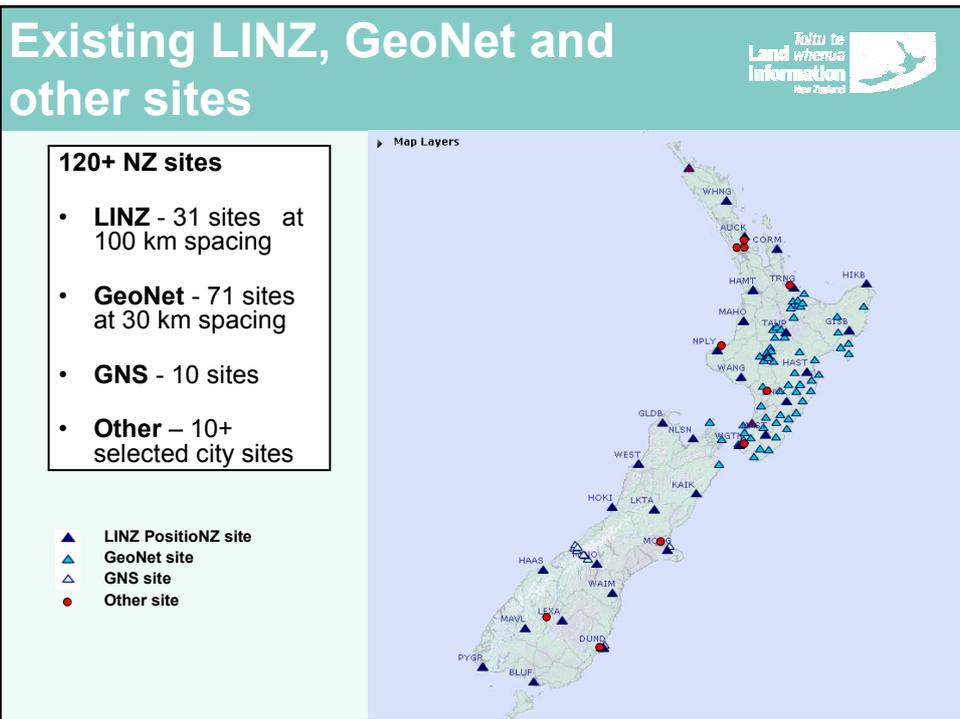
Current Situation

- **31 sites in NZ, 2 on Chatham Islands and 3 in Antarctica**
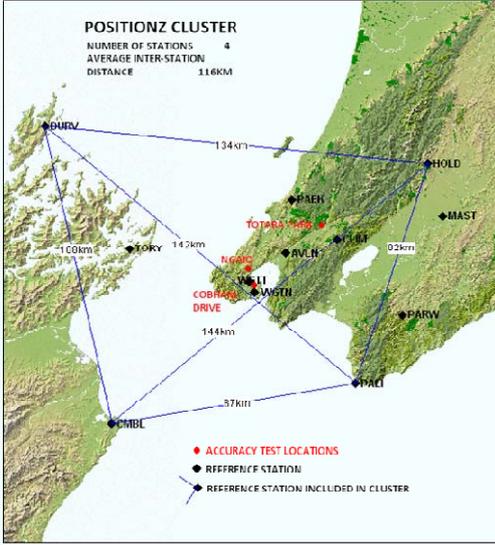- **1hr & 24hr 30sec RINEX files** (accessed via website)
- **13 Sites streaming 1" data** (public access via Ntrip)
- **Developing PositioNZ-PP**

Existing LINZ, GeoNet and other sites

120+ NZ sites

- **LINZ** - 31 sites at 100 km spacing

- **GeoNet** - 71 sites at 30 km spacing

- **GNS** - 10 sites

- **Other** – 10+ selected city sites

▲ LINZ PositioNZ site
▲ GeoNet site
△ GNS site
● Other site

> Map Layers

Planned additional GeoNet sites by 2010

170 sites by 2010

- **LINZ** - 29 sites at 100 km spacing

- **GeoNet – 50 sites - 120 sites at 30 km spacing**

- **GNS** - 10 sites

- **Other** – 10+ selected city sites

> Map Layers

Research into real time network solution

11 PositioNZ and GeoNet stations used

Results:
- Configuration of stations has little effect on precision of results
- Density of PositioNZ stations (100km) is sufficient to obtain a network solution; however
- the sparser the network the greater the communication and operational problems

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Looking forward

PositioNZ stations by themselves are at an insufficient density to provide a national reliable real time network

Need to expand the network by:
- **Including GEONET stations**
- **Including other third party stations**
- **Installing additional stations in areas not covered by the above**