



The Benefits and Opportunities of a Shared Geotechnical Database



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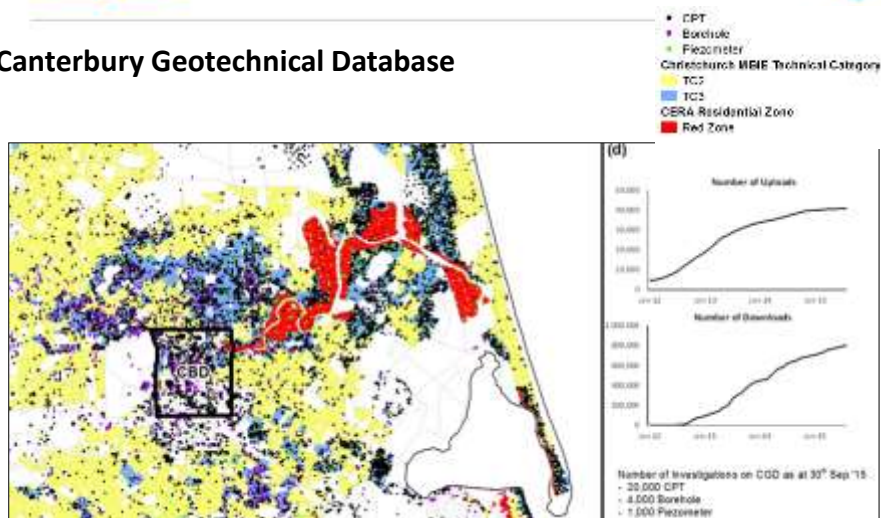


What is the Canterbury Geotechnical database?

- An online database that has been developed for the rebuild of Christchurch following the 2010-2011 Canterbury Earthquake Sequence
- Searchable web based repository
- The CGD has been very successful
- Sharing of information between the private and public sectors has enabled access to a far bigger data set
- 40,000 uploads of geotechnical information with 1/3rd supplied by EQC and 2/3rd supplied by the private sector
- 800,000 downloads of geotechnical information
- Geotechnical data is typically reused 20 times. This has resulted in cost savings in the order of NZ\$50-100 million
- SCIRT - \$5M in savings
- Intend to make CGD New Zealand wide

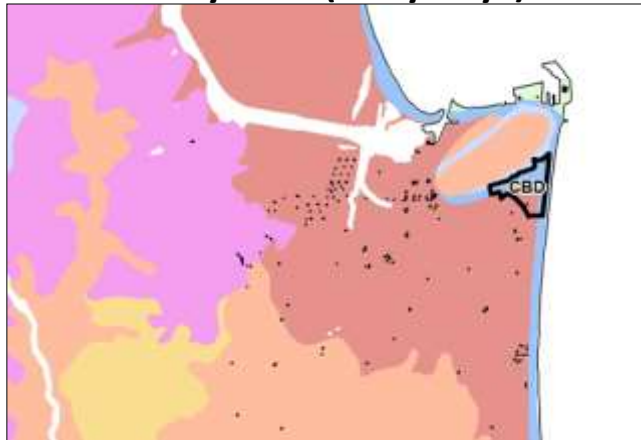


Canterbury Geotechnical Database





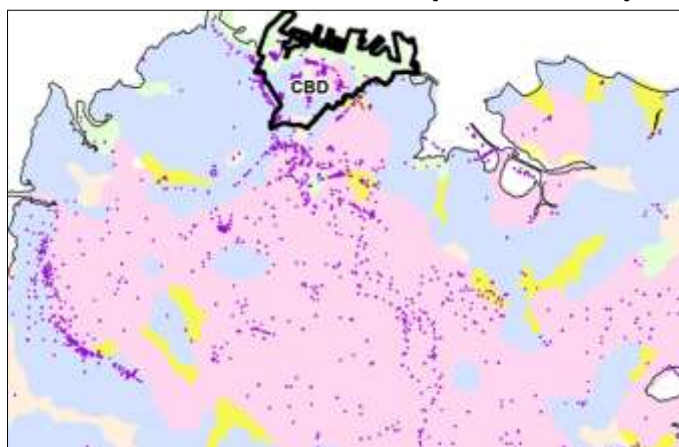
Hawkes Bay data (early days)



- (b) • CPT
Hawkes Bay Geology
 ■ Clay
 ■ Silt
 ■ Sand
 ■ Sedimentary Weak Limestone
 ■ Sedimentary Weak Mudstone
 ■ Sedimentary Weak Sandstone
 Number of Investigations = 300



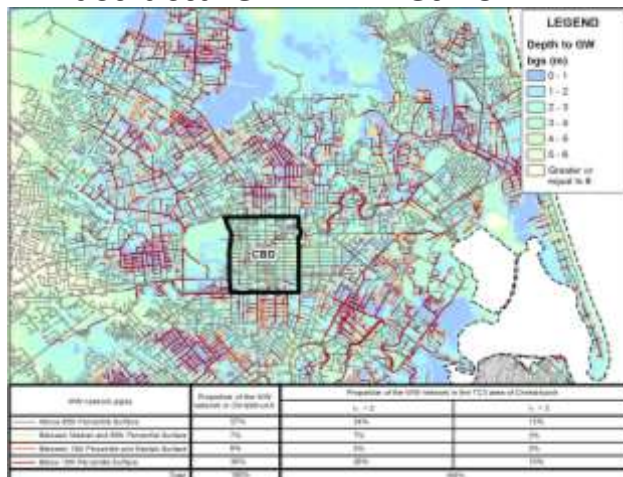
Auckland Data (Watercare)



- LEGEND**
 (a) • CPT
 • Geology
Auckland Geology
 ■ Clay
 ■ Silt
 ■ Sand
 ■ Sedimentary Weak Limestone
 ■ Sedimentary Weak Mudstone
 ■ Sedimentary Weak Sandstone
 Number of Investigations = 4,300



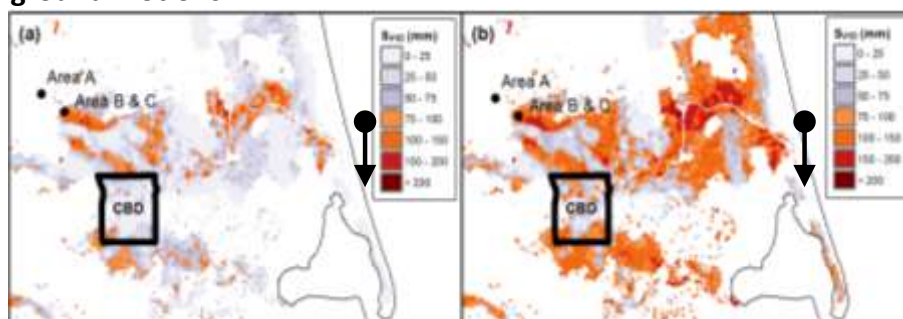
Infrastructure – WW network



- Pipework above and below the water table
- Silty and sandy soils (dewatering)
- Vulnerability to hazards



Calculated S_{VID} at the (a) SLS (25yr) and (b) ULS (500yr) ground motions



- Minor-to-moderate and moderate-to-severe liquefaction related ground damage >75mm settlement at SLS and ULS
- Not just one hazard map – hazard is PGA dependent
- Avoid worst land or make infrastructure the most resilient



What is in it for you?

- Key message is the sharing of, and easy access to, data between the public and private sectors
- Cheap place to store data – pay for it once!
- Easy access to data from other utilities and the private sector
- This access enables faster and more cost effective investigations and less of them (SCIRT example)
- Enables infrastructure providers to be more informed in their asset management and investment decisions (where are the risks?)
- Enables well informed land planning/development decisions
- Contractors can assess opportunities for investment in specialist equipment eg ground improvement
- Assists insurance market policy and premium setting and catastrophe modelling



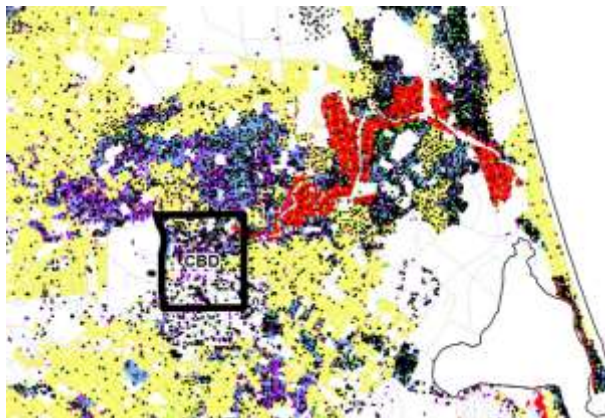
Intentions

- The Thirty Year Infrastructure Plan has a national geotechnical database as an action
- The Canterbury geotechnical data is to be transitioned by MBIE to a NZGD
- CGD is well accepted and used by the geotechnical community
- It is hoped the NZGD will be similarly supported when it goes live

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Questions?



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PGAs

