

Nelson-Tasman Geotechnical Site Classification Study

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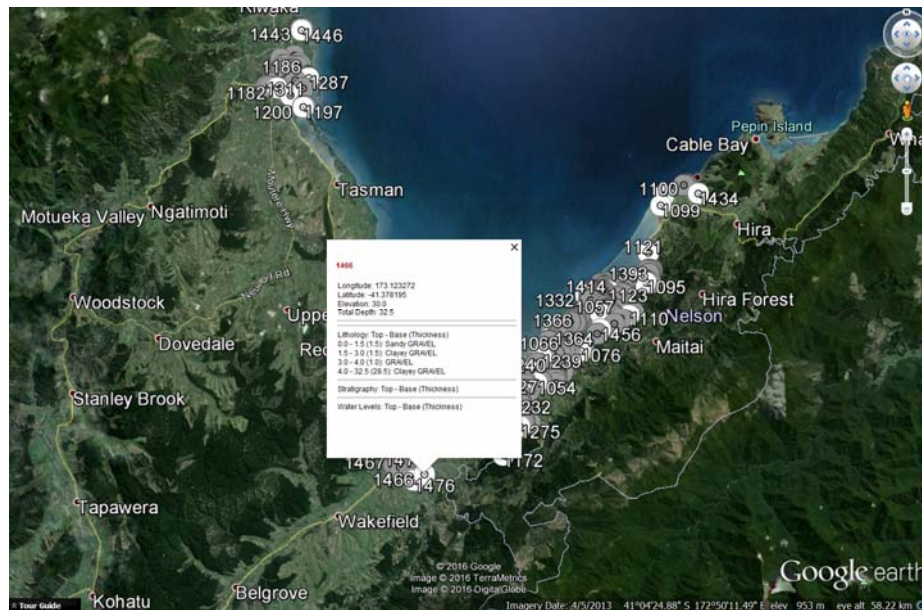


Aim of the Nelson-Tasman Site Classification Study

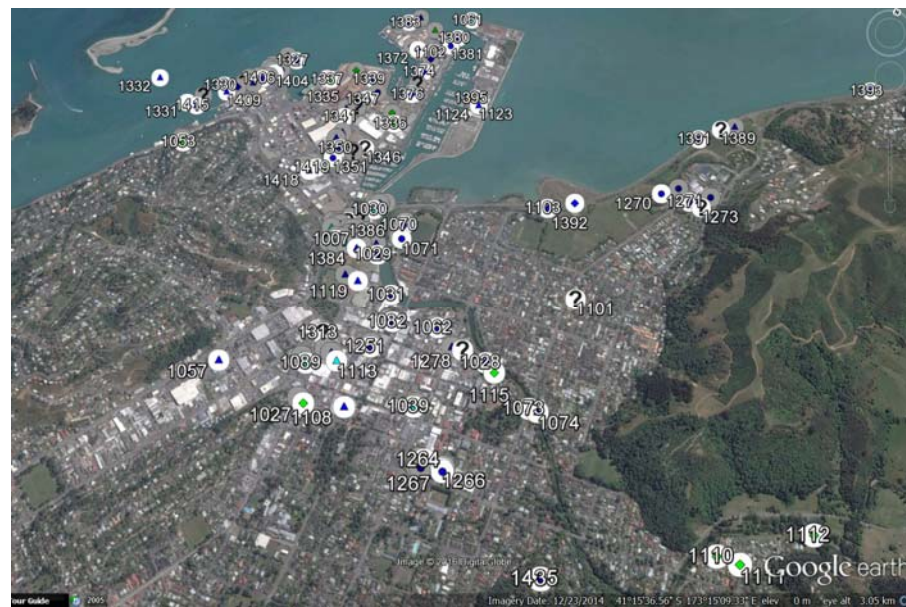
- Define geotechnical dynamic site characteristics across the Nelson-Tasman region
- Collect and interpret geotechnical and geophysical data
- Develop maps of subsoil characterisation metrics



Historic Geotechnical Data Collection



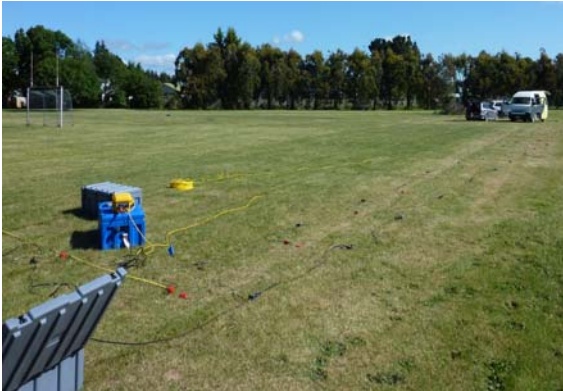
Preliminary Mapping of Site Class



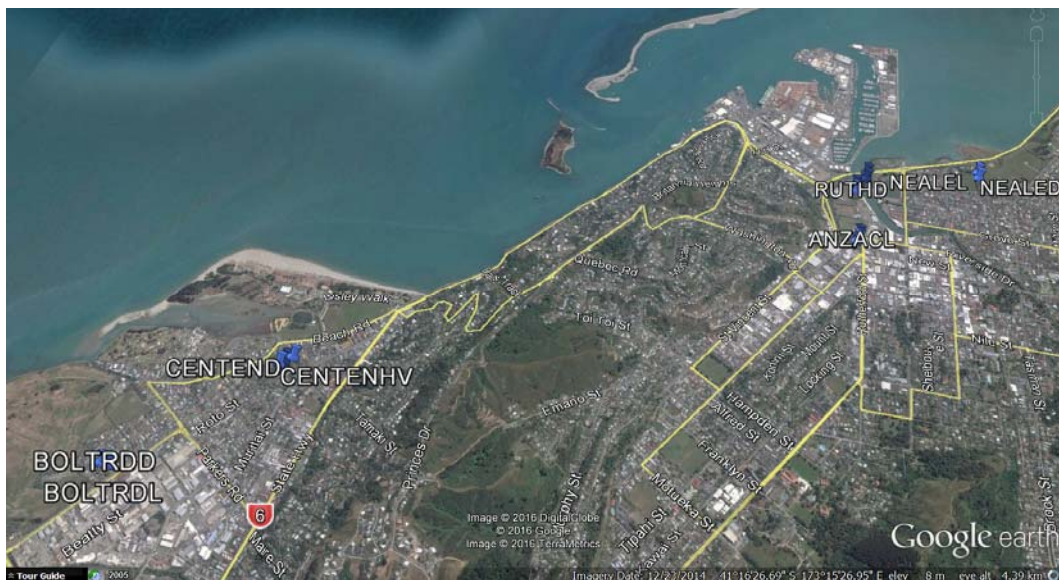
Geophysical Data Collection

Collate a geospatial summary dataset of site characterisation metrics across the region and define representative shear wave velocity-depth relationships for regional soil deposits.

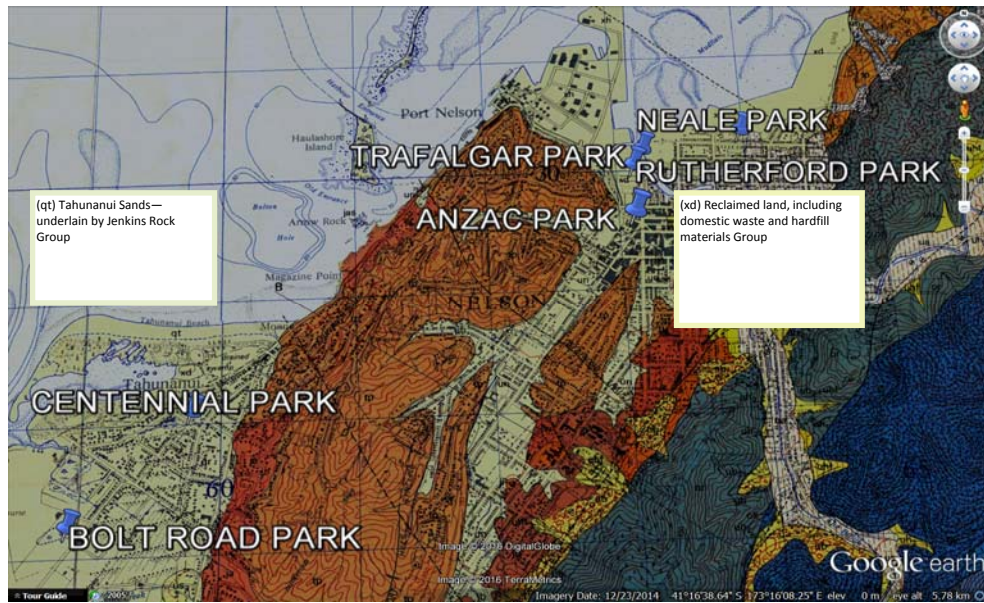
Site period estimated using H/V spectral ratio – broadband seismometers



Initial Surface Wave Testing

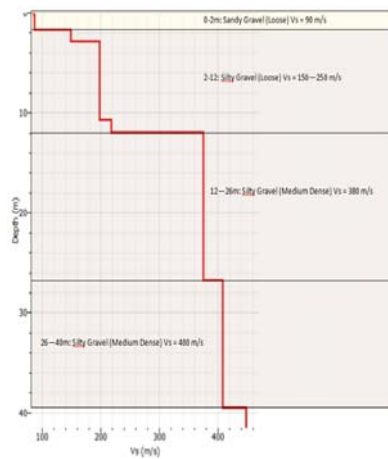


Initial Vs Profiles and Characterisation

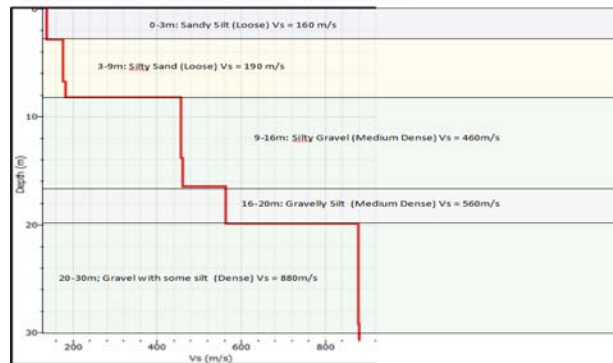


Initial Vs Profiles and Characterisation

Site (1) ANZAC Park (Geological Map: xd - Reclaimed Land)



Site (2) Centennial Park (Geological Map: qt—Tahunanui Sand)

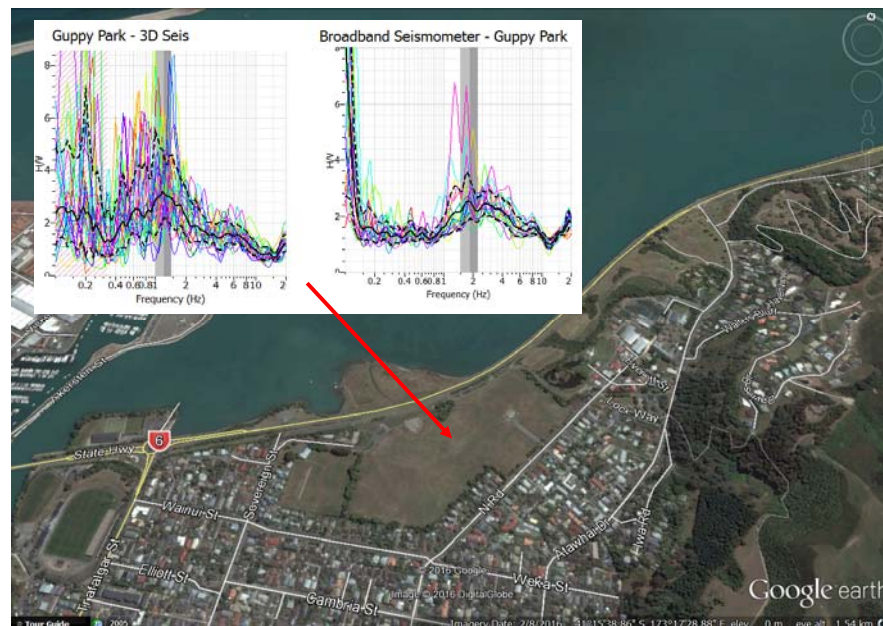


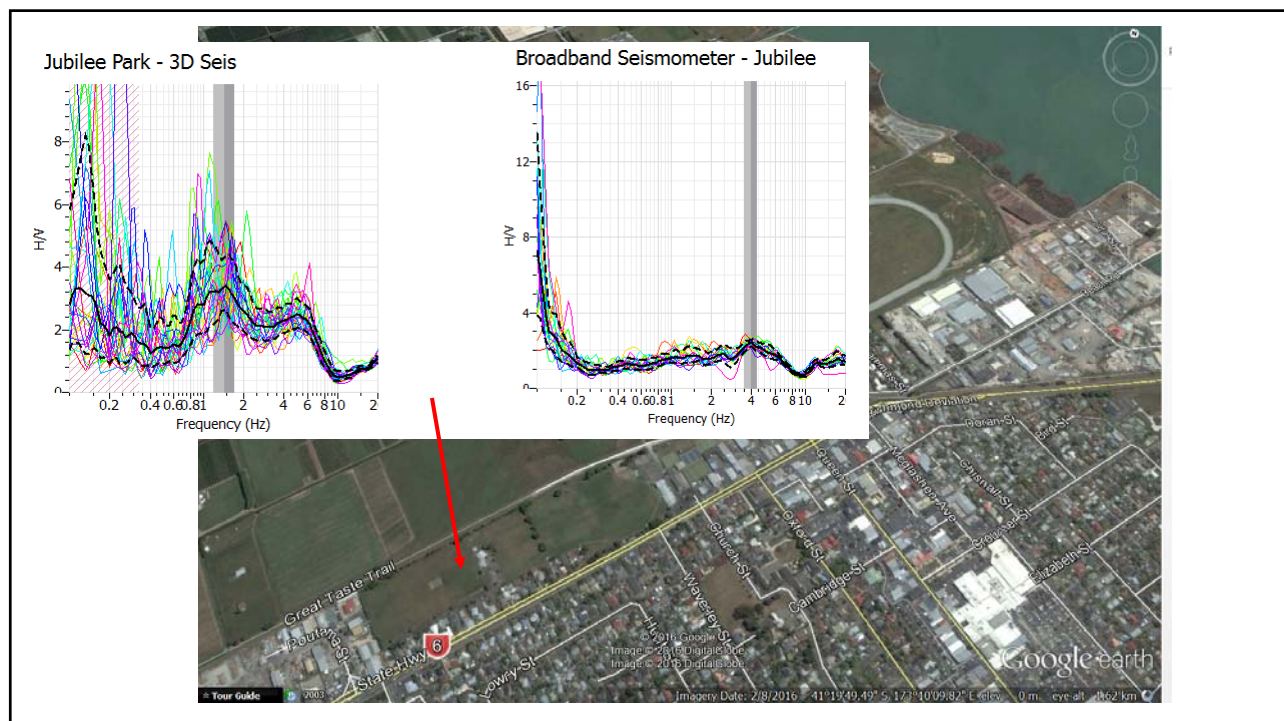
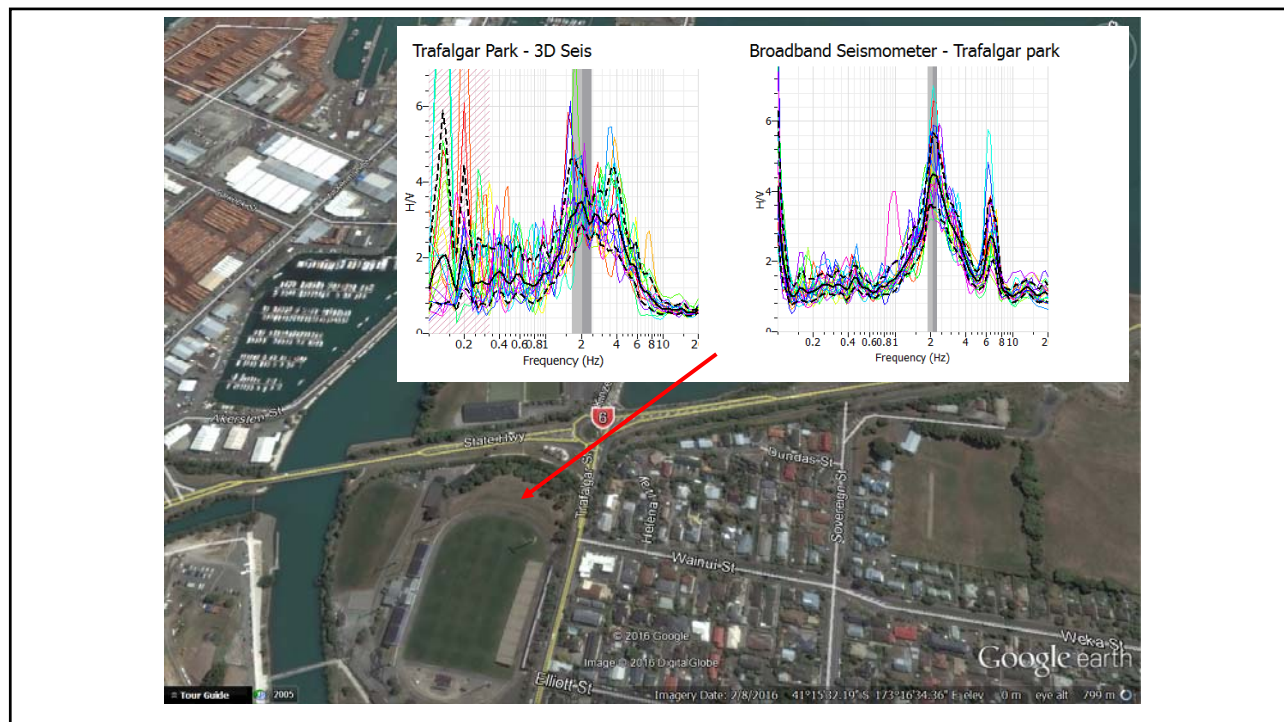
Broadband Seismometer Testing Locations (Dec '16)

Seismometer set up and run for 1-2 hours at each location.

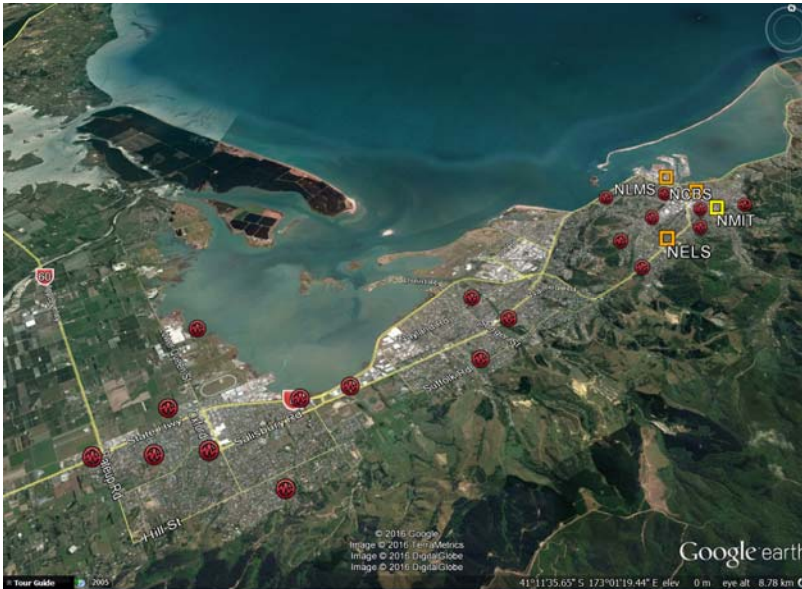


Nelson-Tasman H/V sample results





Active Testing Locations (In Progress)



Parks with sufficient space for testing shown in red.

SMS shown in Orange

Building Array at NMIT in Yellow.

Co-funding Effort and Support

- Liaison with local consultants and Nelson City Council/Tasman District Council.
- Presentation to Nelson/Tasman Civil Defence.
- Discussion and further plans for potential testing for regional developers.
- Outreach activities and proposed events for 2017 to promote QuakeCoRE research to wider community.



Expected Outputs for 2017:

- Objective 1 (Shallow Characterisation)

- Develop and publish the first detailed dynamic site characterisation dataset in the Nelson-Tasman region.
- Provide dataset of testing information to enable improved site sub-soil classification
- Data to feed into regional ground motion simulation efforts.

- Objective 2 (Deep Characterisation)

'Deep' geophysical and geological regional characterisation of sedimentary and metamorphic soil/rock deposits and integrated development of a Nelson/Tasman velocity model.

