

4 May 2020

Greg Miller  
Group Chief Executive Officer  
KiwiRail

Dear Greg

### **Kaiwharawhara as the site for the redevelopment of the Cook Strait Ferry Terminal**

Further to recent the announcement on Kaiwharawhara as the site for the redevelopment of the Cook Strait Ferry Terminal, I am writing to summarise the findings of the GNS Letter Report [CR 2019/138 LR] commissioned by KiwiRail on 19 July 2019.

As you are aware, GNS Science and predecessor organisations have been highlighting the issues with intensifying development in the Kaiwharawhara area arising from a combination of the presence of the active Wellington fault, poor soil conditions and the density of the infrastructure through this narrow corridor, since the 1980's. The risk – the hazards combined with the exposure of key infrastructure to these hazards - makes the area one of the recognised riskiest corridors for critical infrastructure in New Zealand. The Thorndon-Kaiwharawhara area and Cook Strait and the ferry service are noted as 2 of 10 nationally critical risk corridors for New Zealand by the New Zealand Lifelines Council.

The active Wellington fault has for many years been known to exist in close proximity to the current KiwiRail ferry terminal. Recent work has revealed a more complex zone of faulting which, because of modification of the land with many episodes of reclamation and development, makes it unlikely that additional studies could reveal the detail of fault displacement characteristics at this site.

GNS Science has advised that all sites in Wellington are technically challenging with 3 key seismic factors to address – (i) fault rupture, (ii) earthquake shaking on soft soil sites and (iii) tsunami. All Wellington harbour sites have factors (ii) and (iii) but are discoverable and so an engineering solution can be found. Only the Kaiwharawhara site has issue (i) and because of extensive modification of that site, refinement of fault characteristics to enable a cost-effective engineering solution is not possible.

We note your press release of 9<sup>th</sup> April 2020 expressing reservations about the Kaiwharawhara site and reference the Government Policy Statement on Land Transport and expectations in that requiring nationally important transport connections to be of the highest quality, safety and resilience. Further to that, the Wellington Earthquake National Initial Response Plan (<https://www.civildefence.govt.nz/assets/Uploads/WENIRP-2.0-Final-for-publication.pdf>) indicates an expectation on the Port to provide a limited level of performance for the Cook Strait ferry service (as designated critical infrastructure) 3-5 days after a major event.

We understand that the decision-making process for any new site is complex and many factors need to be taken into account. From a GNS Science perspective, the seismic resilience of the site for development of the multi-user ferry terminal needs to be given a high weighting. The opportunity to de-risk the future by developing the multi-user ferry terminal (as



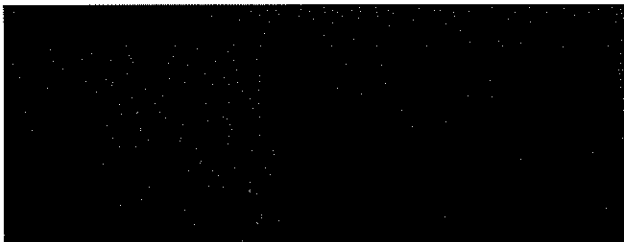
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a piece of nationally-critical infrastructure) away from a known nationally significant high risk corridor, has considerable merit.

Specific to this particular issue, GNS Science's role as a Crown Research Institute is to provide high quality and up- to-date science advice to help New Zealand to become more resilient and safer to natural hazard events such as earthquakes and to provide independent and trustworthy information for decision makers so that the best outcomes can be achieved for New Zealand.

Given the regulated importance of the Cook Strait transport connection as a lifelines link of national importance for New Zealand, as appropriate, GNS would be prepared to meet with Ministers and Government officials, if invited, to offer specialist and independent advice regarding the seismic risks recognising both life safety and economic outcomes for the Kaiwharawhara and alternate sites, and how this relates to the current infrastructure investment decisions.

Yours sincerely



**Theme Leader, Natural Hazards and Risk**