

Applications are invited for a PhD scholarship opportunity at the Waikato Management School, University of Waikato in Hamilton, New Zealand. This project is fully funded by [QuakeCoRE](#), the New Zealand Centre for Earthquake Resilience. A mid-2022 start is anticipated (COVID-19 restrictions allowing). The successful applicant must be eligible to enrol at the University of Waikato (please check the PhD entry requirements available [here](#)).

Research background

In the wake of a natural hazard, essential relief items (food, water, shelter, medical equipment, etc.) must be deployed and distributed immediately. Pre-positioning contingency stock and equipment at strategic locations enables emergency responders to promptly deliver urgently needed supplies and to meet the immediate needs of those affected. Although New Zealand is prone to natural hazards that cause severe infrastructure damage and are likely to isolate communities for extended periods of time, pre-positioning practices are not used in this country.

Project

This project aims to:

- Determine why pre-positioning practices have not been implemented in New Zealand;
- Establish the needs and requirements of New Zealand's emergency management actors;
- Identify the barriers and benefits to implementing pre-positioning practices in New Zealand.

To address these objectives, a case study approach focusing on Wellington (the capital of New Zealand) will be used. Wellington has a population of over 430,000 people and houses New Zealand's governmental institutions. Located on and close to multiple active seismic faults, Wellington is vulnerable to severe ground shaking that is expected to cause significant infrastructure damage. In the event of a major earthquake, re-establishing key transport routes is unlikely to be an option in the short term and communities in the Wellington area might be isolated for weeks.

In the context of this case study, qualitative and quantitative research will be conducted. Qualitative data will be collected through interviews with key informants, including the National Emergency Management Agency (NEMA), the Wellington Region Emergency Management Office (WREMO), the Wellington City Council, and the New Zealand Defence Force (NZDF). The qualitative analysis of the interview data will enable the successful applicant to gain an in-depth understanding of the New Zealand context and to identify the competing objectives related to pre-positioning practices (e.g. costs vs response time). The output of the qualitative research will also support the development of a multi-objective mathematical model for the pre-positioning of contingency stock and equipment in the Wellington area.

This applied research project will make a significant practical contribution by addressing the specific needs and requirements of the above emergency management actors and by delivering a relevant decision-making tool readily usable by these actors.

Supervisors

The successful PhD candidate will be supervised by Dr Cécile L'Hermitte and Dr Nadia Trent (both from the Waikato Management School).

Funding

This doctoral project is fully funded and consists of:

- A fulltime student stipend of NZ\$27,500 per year for a period of 3 years;
- NZ\$8,000 per year to cover the payment of the University of Waikato PhD fees and contribute to other related costs.

Eligibility criteria

The successful candidate will have:

- A Master's degree in a relevant discipline (e.g. logistics, supply chain management, operations management, industrial engineering);
- A minimum of three years of professional experience in a relevant discipline (e.g. logistics, supply chain management, operations management, industrial engineering);
- Demonstrated skills and experience in mathematical modelling;
- Demonstrated English language skills (if English is not your first language, IELTS or TOEFL scores should be submitted with your application).

Domestic and international students are welcome to apply. The COVID-19 pandemic and any associated border restrictions will be considered at the time of selection.

Application documents required

- Cover letter including a personal statement (maximum two pages) related to the research project (e.g. motivation for the project, what experience and skills you will bring to the project);
- CV;
- Three reference letters (at least two academic);
- Copies of official academic transcripts;
- IELTS/TOEFL scores (if applicable).

Contact and email address for applications

Please email all the above documents to Dr Cécile L'Hermitte (cecile.lhermitte@waikato.ac.nz). Incomplete applications will not be considered.

Closing date

The review of applications will begin on January 17th 2022 and continue until the position is filled. Final acceptance is subject to the approval of the University of Waikato's School of Graduate Research.