Project title: Localised Earthquake Assessment Study
Strategy area: Urban Development

1. The Proposal

The project proposal is a major collaboration between the Institute of Geological and Nuclear Sciences (IGNS) and Victoria and Massey universities and will result in a significant step forward in our understanding of the likelihood and impact of a major earthquake in the Wellington region. It is a 5 year project, estimated to cost in the region of $1.5 million.

As a likely significant beneficiary of the output from the project the Council has been asked for a financial contribution towards the cost of undertaking it. Officers are recommending an annual contribution of $100,000 per annum over the next 5 years, commencing 2006/07.

2. Strategic fit

Because dealing with the city's (and region's) earthquake risk is factored into so many of the Council's activities, this project has a potentially wide-ranging and pervasive contribution to make to the successful achievement of its strategic outcomes. The benefit will be felt most keenly in the areas of Urban Development, Economic Development and Transport.

The project will contribute directly to four of the following very high strategic priorities:

- The Council will improve the way infill development in residential areas is managed.
- The Council will work to improve the quality of urban design.
- The Council will set in place the 50-year growth spine plan.
- The Council will contribute significantly to the completion and successful implementation of the Wellington Regional Strategy.

The project will also contribute toward many of the transport priorities including:

- The Council will improve the performance of the city's transport system through Travel Demand Management
- The Council will advocate for and facilitate investment in the city's State Highway network
- The Council will improve the performance of the city's passenger transport system through bus priority measures
- The Council will work to resolve the conflict between access to the port, and access to the central area and beyond.

3. Relationship to existing activities

Wellington's earthquake risk is a consideration in many aspects of the Council's activities – application of the District Plan, infrastructural asset management and development, business retention and migrant attraction to name a few – and the need to address that risk underpins many Council decisions. Having a greater understanding of the risk and (the timing of) the potential impact on the city of it eventuating can only enhance the quality of the Council's delivery of services and better inform planning towards achievement of its medium and long term strategic goals.

4. Proposal Costs

Outline project costs per year										
	Operating expenses $000									
Project Component	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
Council contribution	*100*	*100*	*100*	*100*	*100*					
Total	*100*	*100*	*100*	*100*	*100*					

The Earth Quake Commission has agreed to contribute dollar for dollar up to $300,000. The Accident Compensation Corporation has agreed to contribute $100,000. Other local Council's have been approached to contribute towards the project and are considering their level of support.

5. Project Outline

The project will deliver considerable benefits to Council and the community.

The product of this project will be of critical importance to the Council, will have a significant influence on its future decision making and as a result could help shape the future development and economic prosperity of the city. The development of a more accurate predictor of earthquakes, coupled with more certainty around the nature of the impact of such events, will establish a risk profile that will:

1. Give the Council a more reliable indication of the long term planning "window" within which it needs to adapt its future city development strategies, asset management plans and work programmes.

2. Help the Council future-proof the city by guiding decisions in regard to:
   - the development of appropriate urban planning standards and guidelines
   - on-going investment in infrastructure, specifically the location of new infrastructure, the need for, nature and scope of engineering solutions to deal with earthquake risk, and the timing and priority of necessary work.

3. Facilitate the modelling of the financial impact on ratepayers over time of addressing earthquake risk and guide the use of appropriate financial risk mitigation tools.

4. Inform the nature and scope of the city's and the Council's emergency response management and recovery needs.

5. Assist with the raising of community and business sector awareness of Wellington's earthquake risk and with the promotion of the need to develop relevant self-help measures.

The spin-offs for the city relate largely to its continued economic prosperity and attraction and retention of businesses and migrants, in the form of:

1. A higher level of international, national and local resident confidence in the city's future stemming from the Council's better ability to forward-think and front-foot its approach to dealing with a known natural hazard.

2. A greater level of assurance for current businesses, encouraging them to feel more secure in their commitment to the city and to take a more positive view of their future growth prospects.

3. Assurance for new businesses and migrants seeking to relocate to Wellington that their medium to long term aspirations are achievable.

The project itself is likely to attract overseas attention and help enhance Wellington's profile as a centre of earthquake engineering excellence, reinforcing the city's status as a centre of creativity and innovation. The product from it could have an economic return in terms of its potential scope for application overseas.

The work phases of the project are as follows.

5.1 2006/07 Actions

The focus during this period will be quantifying the likelihood of a high loss earthquake occurring in the Wellington region. This will be done through geological research, synthetic seismicity modelling and geodetic GPS studies of the region. The research will then be collated and analysed to better define earthquake size.

5.2 2007/08 Actions

The second stage will focus on the Effects of a high loss earthquake occurring in the Wellington Region. The focus will be on modelling work to define the likely physical effects of Wellington earthquakes. At this point, the data collected from likelihood and size research will be turned into information able to be used to calculate loss and risk.

5.3 2008/09 Actions

The third stage (through to 2011) will concentrate on an Impact assessment, incorporating the vulnerability of the built environment, indirect loss (through business interruption) and the wider impacts of an earthquake disaster scenario, e.g. impact of evacuation, social losses and displacement of people in the Wellington region.

6. Conclusion

Wellington is regarded as being among the top 5 earthquake risks in the world. The overall goal of the study is to see Wellington become a more resilient city through a comprehensive study of the likelihood of large Wellington earthquakes, the size of these earthquakes, their effects, and their impacts on the built environment so that the Council can plan effectively for the future.