



CDEM Resilience Fund project application form

Application for CDEM Resilience Collaborative fund approval	
Project title	The Canterbury Palaeo-tsunami Database: (Pilot project for National palaeotsunami database).
Date of application	31 July 2014
Details on application	
Lead local authority	Environment Canterbury
CDEM Group	Canterbury
Other local authorities or Groups supporting the proposal	National Institute and Atmospheric Research (NIWA)
Project description	
<p>Executive summary</p> <p>This pilot project aims to bring together all known information about palaeo-tsunamis in the Canterbury region to produce a user-friendly tool for quantifying and qualifying tsunami hazard and risk for coastal-marine planning and management. This work will build upon the recent release the historical tsunami database by the GNS Science and comprise the following objectives:</p> <ul style="list-style-type: none"> (i) A systematic review of existing records of palaeo-tsunamis that have impacted the Canterbury region. This will involve quality assurance of all available data as well as the development of interoperable data standards for variable data sources that have developed independently of one another. (ii) The configuration, design, and implementation of a database that is compatible with the development of other regionally significant databases currently under construction (e.g. Australian Tsunami Database, Pacific Island Tsunami Database). (iii) Peer-reviewed raw data readily available for Environment Canterbury, and the scientific community involved in tsunami hazard and risk research. (iv) A web-interface capable of facilitating enhanced processing, analysis and interpretation of historical and palaeo-tsunami information. This will improve the calibration of tsunami inundation modelling which is important for the assessment of tsunami risk. 	
<p>Problem/opportunity</p> <p>In New Zealand as a whole, and the Canterbury region, a diverse assembly of data, scientific research and experience surrounds pre-historic tsunamis (palaeotsunamis). Much of this information however, is difficult to locate, has variable reporting standards, and lacks quality assurance. This situation has led a number of stakeholders (council, science providers and iwi) to recognise the value of formally bringing together this information into a single database where access to the best available data and research could be guaranteed. Realisation of this project would provide authoritative scientific support for coastal-marine planning and risk management. Further, it would contribute to an enhanced public awareness of tsunami by being a "one-stop-shop" for information on past tsunami impact. The science community would also benefit - in particular, through the modelling (and calibration) of tsunami risk profiles. This project is intended to be a pilot, to be further developed into a national level tool. We anticipated that this regional on-line tool would inform the future configuration, design, and implementation of a national palaeo-tsunami</p>	

database for New Zealand, enabling correlation of events along different stretches of the New Zealand coastline, and provide information on frequency and extent of local, regional and distant source tsunamis.

Alignment with identified goals and objectives

This application aligns with National CDEM goals 1 and 2

- Objective 1A- “increasing the level of community awareness and understanding of the risks from hazards”
- Objective 2A-“Developing a comprehensive understanding of New Zealand’s hazardscape”.

This work will also address Objectives and actions set out in the Canterbury CDEM Group Plan:

- Overall goals: “ The risks we face are well understood within all communities and organisations”

Specific Canterbury Group plan objectives:

- 4.5.4 Communicate all issues relating to risks effectively to the community and partners.
- 4.5.1 Provide collaborative leadership in hazard research initiation, delivery and application.
- 4.5.2 Proactively identify, understand and manage the risks that Canterbury’s communities face.
- 4.5.3 Ensure that planning and management of risk are based on relevant risk assessments

Dissemination of benefits to sector

Realisation of this project would consolidate a wide range of published and unpublished research contributions from many institutions and science providers (domestic and overseas), on historic- and palaeo-tsunamis in the Canterbury region. Such work would provide authoritative scientific support for coastal-marine planning and risk management. It would contribute to an enhanced public awareness of tsunami by being a “one-stop-shop” for information on past tsunami impact. The science community would also benefit - particularly, through the modelling (and calibration) of tsunami risk profiles. It is anticipated that the provision of on-line tools would inform the future configuration, design, and implementation of a national palaeo-tsunami database for New Zealand.

The following regions have expressed an interest/support for the concept of a national palaeotsunami database:

- Bay of Plenty Regional Council
- Environment Canterbury
- Environment Waikato
- Gisborne District Council
- Greater Wellington
- Hawkes Bay Regional Council
- Northland Regional Council
- Otago Regional Council
- Southland Regional Council
- Tasman District Council
- West Coast Regional Council

Finally, EQC has expressed an interest in supporting financially the development of this regional pilot into a national level tool. In addition, GNS have conveyed interest in linking their Historical Tsunami Database with any national palaeotsunami database that is developed from this pilot.

Project design



Project manager	Marion Gadbsy (ECAN)
Other project members	Darren King (NIWA) Andrew Watkins (NIWA) James Goff (UNSW) Jose Borrero (eCoast Ltd. Consulting and Research)
External providers/contractors	

Deliverables

Milestone	Date for completion	Cost
Review QA of data completed	6 months from start date	\$20,000
Development of palaeotsunami database	9 months from start date	\$20,000
Development of user interface	11 months from start date	\$20,000
Testing	12 months from start date	Up to \$5,000

Identified risks

Risk	Suggested management
Beta testing will be required to produce a fully functional web-interface capable of facilitating enhanced processing, analysis and interpretation palaeo-tsunami information.	Adequate time must be made available to accomplish this requirement. Environment Canterbury will allow \$5,000 to cover extra costs of any issues that arise at this stage, should the need arise.

Funding request and use	
CDEM resilience fund contribution	\$ 60,000
Local authority contribution	Up to \$5,000 if extra testing required
Other sources of funding	EQC has expressed an interest in supporting financially the development of this regional pilot into a national level tool.
Expenditure	
Application confirmation	
Approval of Chief Executive	 31/2/14
CDEM Group comment	
Comment	
Approval of Coordinating Executive Group Chair	 31/2/14