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## CDEM Resilience Fund project application form

Application for CDEM Resilience Collaborative fund approval	
Project title	The New Zealand Palaeo-tsunami Database.
Date of application	17th November 2014 - Resubmitted. 2016/2017
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), Geological and Nuclear Sciences (GNS), Northland, Auckland, Waikato, BOP, Gisborne, Hawkes Bay, Manawatu-Wanganui, Greater Wellington, Tasman, Marlborough, WCRC, Otago RC, Environment Southland, Chatham Islands Council, MCDEM Hazard Risk Management & Analysis team, EQC
Project description	
<p>Executive summary</p> <p>This project aims to bring together all known information about palaeo-tsunamis in New Zealand to produce a user-friendly tool for quantifying and qualifying tsunami hazard and risk for coastal-marine planning and management. The work will build upon the recent release of the historical tsunami database by GNS Science and comprise the following objectives:</p> <p>(i) A systematic review of existing records of palaeo-tsunamis that have impacted the New Zealand coast. 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.</p> <p>(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).</p> <p>(iii) Peer-reviewed raw data readily available for CDEM groups, regional councils, and the scientific community involved in tsunami hazard and risk research.</p> <p>(iv) A web-interface capable of facilitating enhanced processing, analysis and interpretation of historical and palaeo-tsunami information. This will assist the calibration of tsunami inundation modelling which is important for the assessment of tsunami risk.</p>	
<p>Problem/opportunity</p> <p>In New Zealand, a diverse assembly of data, scientific research and experience surrounds pre-historic tsunamis (palaeotsunamis). However, much of this information is difficult to locate, has variable reporting standards, and lacks quality assurance. A number of stakeholders (council, science providers and iwi) have come 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. This proposed project would thereby:</p> <ul style="list-style-type: none"> <li>• provide authoritative scientific support for coastal-marine planning and risk management.</li> </ul>	

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- contribute to an enhanced public awareness of tsunami impacts
- benefit the science community, through the modelling (and calibration) of tsunami risk profiles.
- enable 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.

Future developments include a joint user-interface with the GNS historic database and the addition of CDEM evacuation maps providing a true "one-stop-shop" for information on tsunami impact in New Zealand. Further, conversation with those concurrently developing other national databases in the Pacific region will ensure compatibility of these databases and allow for the building of a Pan-Pacific picture of past tsunami events and current tsunami hazard.

#### 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 New Zealand. 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.

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



- Northland Regional Council

- Auckland Council CDEM
- Environment Waikato
- Bay of Plenty Regional Council
- Gisborne District Council
- Hawkes Bay Regional Council
- Manawatu-Wanganui
- Greater Wellington Regional Council
- Tasman District Council
- Environment Canterbury Regional Council
- West Coast Regional Council
- Otago Regional Council
- Southland Regional Council
- MCDEM
- EQC
- GNS
- NIWA

Finally, EQC has expressed an interest in principle in financially supporting this national level tool in a co-funding arrangement. 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 Australia) Jose Borrero (eCoast Ltd. Consulting and Research)	
External providers/contractors		
Deliverables		
Milestone	Date for completion	Cost
Review QA of data completed	12 months from start date	\$90,000
Development of palaeotsunami database	15 months from start date	\$50,000
Development of user interface	17 months from start date	\$30,000 Up to \$5,000
Testing	18 months from start date	

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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.	<p>Adequate time must be made available to accomplish this requirement.</p> <p>Environment Canterbury will allow \$5,000 to cover extra costs of any issues that arise at this stage, should the need arise.</p>
Funding request and use	
CDEM resilience fund contribution	\$ 175,000
Local authority contribution	Up to \$5,000 if extra testing required
Other sources of funding	EQC has expressed an interest in principle in financially supporting this national level tool in a co-funding arrangement.
Expenditure	
Application confirmation	
Approval of Chief Executive	 11/11/14
CDEM Group comment	
Comment	At the MCDEM –funded Tsunami land-use/evacuation workshop in Gisborne on 16th October, the meeting requested that Canterbury Group resubmit a modified version of our existing application for Resilience funding, broadening the scope from a Regional to a National Palaeotsunami Database. This was overwhelmingly supported by those present at the meeting- including representatives of almost every CDEM group in New Zealand, MCDEM and EQC. Since the meeting we have received emails of support for the application from most of the organisations represented at the meeting. If this application is not accepted we still request that our regional resilience fund application is considered.
Approval of Coordinating Executive Group Chair	 11/11/14