



CDEM Resilience Fund project application form

Application for CDEM Resilience Collaborative fund approval	
Project title	West Coast Tsunami Modelling & Risk Analysis
Date of application	28 th of February, 2018
Details on application	
Lead local authority	West Coast Regional Council
CDEM Group	West Coast CDEM Group
Other local authorities or Groups supporting the proposal	Buller District Council Grey District Council Westland District Council
Project description	
<p>Executive summary <i>[200 words maximum description.]</i></p> <p>The West Coast is made up of many small communities spread out along a relatively narrow coastal strip from Kahurangi Point in the north to Awarua Point in the south. A large portion of West Coast communities are in low lying coastal areas exposing them to potential tsunami risk. This project aims to identify at risk areas by updating the tsunami modelling to enable more accurate tsunami risk analysis for which the West Coast CDEM Group can use for tsunami response and recovery planning.</p> <p>Previously basic tsunami modelling was completed for the main coastal centres only. This current level of modelling does not take into account all available bathymetric and topographic data, or tsunami hydrodynamics such as source, and offshore and onshore tsunami propagation for all coastal communities on the West Coast.</p> <p>The project objective is to:</p> <ul style="list-style-type: none">- Complete an accurate terrain model by collecting all current and relevant bathymetric and topographic data.- Upgrade the current tsunami modelling within the main centres from basic level 2 (MCDEM, 2008) to preferred level 3 modelling with multiple source scenarios and tsunami sensitivity analysis.- Complete MCDEM level 2 modelling for the wider West Coast region for all other coastal communities.- Complete tsunami risk analysis to aide in preparedness, response and recovery planning for the West Coast CDEM Group Plan. <p>This project meets many of the goals of the National CDEM Strategy and the West Coast CDEM Group Plan. Outcomes of this project will improve resilience and preparedness of the coastal communities of this region.</p>	
<p>Problem/opportunity <i>[200 words maximum description.]</i></p> <p>Although the West Coast is not directly exposed to the Pacific Ocean, paleo-tsunami evidence still suggests that tsunamis are a hazard that the West Coast needs to take seriously as the majority of the population is location in low-lying coastal regions.</p> <p>The current tsunami modelling is only at a basic level 2 under the MCDEM guidelines for some of the main centres on the West Coast and is therefore not at an acceptable level to complete tsunami response planning or public education.</p> <p>This project is the minimum recommended tsunami inundation risk study for the West Coast to enable tsunami response planning and public education.</p>	

It will encompass the source modelling of several distant, regional and local potential tsunami sources. NIWA will complete tsunami source and propagation modelling for the entire West Coast through to hydrodynamic inundation modelling in built up locations of Westport, Greymouth and Hokitika. Then the WCRC will complete Level 2 worst case tsunami inundation modelling for the rest of the West Coast regions not covered by NIWA.

Because the West Coast has such a long coastline, different sources are likely to be more hazardous in different locations. To address this NIWA will undertake a sensitivity analysis to identify source regions most likely to severely impact locations of interest and develop a wider range of events to encompass these.

Once the tsunami modelling has been complete the WCRC will complete a tsunami risk assessment for the coastal regions to aide in preparedness, response and planning. This will provide information on potential costs of tsunami events, numbers of people exposed and displaced due to an event, infrastructure and, in particular, critical infrastructure exposed to events.

Alignment with identified goals and objectives *[200 words maximum description.]*

This application aligns with many of the National CDEM Objectives including:

- Goal 1 – Readiness:
 - 1a - Increasing the level of community awareness and understanding of the risks from hazards.
 - 1b - Improving individual, community and business preparedness.
 - 1d - Encouraging and enabling wider community participation in hazard risk management decisions.
- Goal 2 – Reduction:
 - 2b - Developing a comprehensive understanding of New Zealand's hazardscape.
- Goal 3 – Response:
 - 3b, c, d & e – Enhancing the ability of CDEM Groups, emergency services, lifeline utilities and government agencies to prepare for and manage civil defence emergencies.
- Goal 4 – Recovery:
 - Assisting the CDEM Group and other key stakeholders to plan for and manage recovery, this will assist with operational aspects of recovery management, such as pre-emergency operational planning, emergency-specific recovery planning, roles and responsibilities during recovery.

This work will also address Objectives and the Actions set in the West Coast CDEM Group Plan:

- Building on the review of existing information on the risk and impacts to West Coast Communities from tsunami;
- Assist with identifying 'at risk' communities and helping them to plan their response in the development and review of Community Response Plans; and
- Will assist with developing the Tsunami Response Plan.

Dissemination of benefits to sector *[200 words maximum description.]*

There has been a substantial amount of tsunami inundation modelling already undertaken elsewhere around New Zealand. This project will provide information for the West Coast that is consistent with that developed elsewhere and will provide tsunami risk analysis information for a second stage project through tsunami response planning such as evacuation signage and public education.

Project design

Project manager	Mark Crowe
Other project members	Jolene Paterson
External providers/contractors	Emily Lane - NIWA

Deliverables		
Milestone	Date for completion	Cost
1. Data collection, collation and validation, and terrain modelling (WCRC)	1 st July, 2018	\$30,000*
2. Tsunami sensitivity analysis (NIWA)	1 st October, 2018	\$30,000
3. Level 3 tsunami modelling & reporting for Hokitika, Greymouth and Westport (NIWA)	1 st January, 2019	\$80,000
4. Project management (WCRC)	1 st February, 2019	\$2,500*
5. Level 2 tsunami modelling & reporting for the wider West Coast region (WCRC)	1 st March, 2019	\$75,000*
6. Tsunami risk analysis (WCRC)	1 st April, 2019	\$10,000*
*WCRC (West Coast Regional Council) contribution.		
Identified risks		
Risk	Suggested management	
That the full amount of funding requested will not be granted.	This project has been estimated by NIWA to cover the entire region but with more detailed modelling around the main centres. Should the full amount not be funded then the tsunami sensitivity analysis as well as the area modelled will have to be reduced. This proposal is already at the minimum recommended level by tsunami experts and a reduction in the funding will reduce the confidence in the tsunami risk analysis for the West Coast.	
That the funding request is not granted at all.	Currently there is only a basic level of tsunami modelling for the main centres which is not at an acceptable level for tsunami response planning or public education purposes.	
Funding request and use		
CDEM resilience fund contribution	\$110,000	
Local authority contribution	\$117,500	
Other sources of funding	NA	
Expenditure <i>[Please supply details]</i>	\$227,500	
Application confirmation		

Approval of Chief Executive	 Michael Meehan
CDEM Group comment	
Comment	
Approval of Coordinating Executive Group Chair	 Michael Meehan