



CDEM Resilience Fund project application form

Application for CDEM Resilience Collaborative fund approval	
Project title	Tsunami inundation modelling- Taranaki coastline
Date of application	11/04/11
Details on application	
Lead territorial authority	Taranaki Regional Council
CDEM Group	Taranaki
Other TAs or Groups supporting the proposal	New Plymouth District Council, South Taranaki District Council
Project description	
<p>Executive summary <i>[200 words maximum description.]</i> Following the Samoan and Chilean tsunami events in the last couple of years, the Taranaki CDEM Group has prepared and exercised a tsunami contingency plan for the region. This has highlighted the need for inundation maps to be prepared (electronic and hardcopy) and incorporated into the plan, to expedite risk assessment and evacuation planning, as well as evacuation route identification. The need for this mapping work has been identified as a priority by the Taranaki CDEM Group.</p>	
<p>Problem/opportunity <i>[200 words maximum description.]</i> While there is not a general regional risk from tsunamis, there are a number of critically low-lying small coastal settlements, the foreshore frontage of New Plymouth (with major recreational usage), and Port Taranaki, the largest west coast port in New Zealand and critical for imports, exports, and offshore hydrocarbon production services and maintenance, that pose major risk. Robust and comprehensive mapping will facilitate an informed response to tsunami events within time-critical situations. Further, the preparation of these plans will enable the mapping of locations of critical and sensitive facilities, lifelines and infrastructure, access routes and control points, and other key features, within and adjacent to at-risk areas, for consideration</p>	
<p>Alignment with identified goals and objectives <i>[200 words maximum description.]</i> Participation in the national scale Exercise Tangaroa was reported to and received by the Group in February 2011. The report noted as follows:-</p> <ol style="list-style-type: none"> 1. The draft Tsunami Response plan requires further updating as consequence of lessons learnt from the exercise. The improvements relate to the provision of maps and evacuation information. 2. Staff are now exploring options for provision of the appropriate maps, both in hard copy and in terms of GIS-based output prior to or during an event. 3. The much greater use of GIS during the exercise was a feature of evolving technology and practice. There is still much work to be done in this area. 4. The existing draft Tsunami Response Plan identifies a number of communities that could be affected by a tsunami using the 'unrefined bath tub' model. GNS are enhancing New Zealand's tsunami inundation modelling and mapping capability. Once the improved GNS GIS tsunami model can be adapted for Taranaki, a better definition of communities, facilities, lifelines, and locations at risk can be developed. 5. This information could subsequently be used, for example, to assist communities in developing Community Response Plans in line with current MCDEM Director's Guidelines. The CEG and Joint Committee will need at some future point to determine 	

how much resource should be allocated to assisting with the development of community response plans. The Urenui community have already indicated that they would like to develop their own community response plan for tsunami.

The Taranaki CDEM Group has adopted as a specific recommendation: that the Group gives effect to the specific recommendations made in the report, as follows:-

- that the CEG request an action plan be developed and presented for its approval. The action plan should include details of who is responsible for the work, timeframes for remedies and resources required.
- that within the action plan, the tsunami response plan should be updated to include a set of maps showing the impacts of tsunami from 1 to 5 m, at 1 m intervals. Additional maps should be developed showing:
 - a) The areas to be evacuated, corresponding to the level of threat,
 - b) The evacuation routes,
 - c) Locations of road blocks and check points,
 - d) Locations of critical infrastructure in the affected area, and
 - e) Other locations considered as important to EOC staff

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

This work would be of critical value to the Taranaki CDEM Group as outlined above. In addition it would be significant for the two district councils with coastline, in respect of land use planning and management; the hydrocarbon production industry (offshore and near-shore extraction and production facilities), who would access and utilise the information through the CDEM lifelines advisory group; the Port for contingency planning; and for local communities wishing to prepare community response plans.

Project design

Project manager	Gary Bedford, Director-Environment Quality Taranaki Regional Council
Other project members	Peter Hebden IT specialist NPDC; Mike Langford EMO Taranaki
External providers/contractors	Craig Goodier, Hawkes Bay Regional Council

Deliverables

Milestone	Date for completion	Cost
Stage 1 pilot study (anticipate 3 weeks), covering up to 10 specific coastal communities or coastline zones that are of priority interest. Model between 5-25 km of coastline, offshore for about 30 km, utilising ground elevation data (Lidar data, or topographical contours) and sea bathymetry. Examine the output data for validity. Test different scenarios.	September 2011	\$10,000
Stage 2 If stage 1 is found to provide a) valid results and b) worthwhile	March 2012	\$25,000

outputs, then consider extending to entire Taranaki coastline		
Identified risks		
Risk	Suggested management	
<p>1. The modelling tools are wrong.</p> <p>2. Availability and quality of input data is deficient</p> <p>3. Digital outputs are unusable because of lack of expertise locally or at time of a future event</p> <p>4. Cost over-run</p>	<p>1. The modelling approach has been previously peer reviewed by University of Auckland and endorsed. The nominated contractor is on ongoing peer contact with GNS staff.</p> <p>2. By staging the project with a pilot study before a full coastal modelling, the value and quality of the project can be closely monitored throughout the project</p> <p>3. Ongoing local Council GIS/IT support (including availability during event) has been confirmed; outputs will be in hard copy as well as digital.</p> <p>4. Costs have been estimated on a maximum credible anticipated time basis, derived from previous modelling work done in Hawkes Bay. By staging the work, the project risks including cost are closely monitored and thus controlled.</p> <p>Note: an informal approach to GNS as an alternative supplier indicates that they could not deliver the work in the same timeframe, nor for a competitive cost. Risks related to delay and cost have thus been addressed already.</p>	
Funding request and use		
CDEM resilience fund contribution	first stage- \$10,000. Subject to satisfactory performance and value, a further \$25,000.	
Territorial authority contribution	Staff resourcing in kind: estimate \$3,000	
Other sources of funding	nil	
Expenditure <i>[Please supply details]</i>	Contractor time only- Craig Goodier, Hawkes Bay Regional Council. To be charged at standard Council charge-out rate. Figures given above are maximum anticipated costs	
Application confirmation		
Approval of Chief Executive		
CDEM Group comment		
Comment	This work delivers on a commitment specifically recognised by the CDEM Group. It is outside the capability of the Group to deliver internally. The work requires a high degree of technical competence, with few providers available nationally. The need for the work, based on the high risk factors for the region and the likelihood of a tsunami event (demonstrated over the last couple of years), make this a priority for the Group.	
Approval of Coordinating Executive Group Chair		

