



CDEM Resilience Fund project application form

This form provides the minimum of information for the application; a detailed project plan should be developed to inform this application and may be attached.

Project title		Northland Tsunami Alerting system upgrade
Date of application		15 March 2021
Details on application		
Applicant		Northland CDEM Group
CDEM Group/s affected		Northland CDEM Group
Other local authorities, Groups or organisations supporting this proposal		
Project description		
Executive summary		
<p>The Northland CDEM Group has a comprehensive alerting system for tsunami response, including a region wide siren network around Northland's coastline. The siren network is integral to our tsunami readiness and response arrangements and plays a key role in alerting communities in conjunction with other mechanisms. The sirens are 10 years old and reaching the end of their lifetime having been commissioned in 2009 and 2010.</p> <p>The joint committee has agreed to replace the existing network with world leading state of the art technology with sirens that meet or exceed the NEMA Tsunami Siren technical standard.</p> <p>A pilot test of one of the new tsunami sirens is due to be completed in the next month.</p> <p>The Northland CDEM Group and its constituent councils have agreed to replace the network, however, due to funding constraints and other priorities councils have in some cases not allowed sufficient funding or an appropriate timeline in their LTP to complete the replacement programme. There is a forecast shortfall in the funding that is proposed in LTP's and the funding needed to complete the siren replacement and upgrades.</p> <p>This application seeks funding to enable the immediate installation (Phase 1) of new sirens into high risk and high population communities.</p>		
Challenge/opportunity		
<p>Investigation into the feasibility of a Northland tsunami siren network commenced shortly after the 2004 Boxing Day tsunami. Several options were investigated, including the indoor siren systems. In 2008 agreement was reached with Northpower to design and host the outdoor "ripple control" tsunami sirens on its power supply network. The intent of the sirens was to create a warning device across Northland capable of reaching populations within communities in an efficient and timely manner.</p> <p>Agreement followed shortly afterwards with Top Energy and in 2010 the first installation of the outdoor sirens activated by "ripple control technology" occurred for the region.</p> <p>Initial installations occurred in 2010 with approximately 60 sirens in the Whangarei district in partnership with Northpower. Far North and Kaipara District Councils both installed sirens shortly afterwards with a further 80 sirens being installed across coastal communities.</p> <p>In 2009 whilst the tsunami siren network was being developed the Northland CDEM Group also invested in the first version of the region wide tsunami evacuation zone maps at a cost of \$40,000. These maps were used to assist in locating the tsunami sirens.</p> <p>By 2019 the current total of outdoor tsunami sirens in the network to reached 202. The minimum lifespan of a tsunami siren is estimated to be 10 years.</p>		

Up until 2014 the Ministry of Civil Defence Emergency Management (MCDEM) had little or no guidance on tsunami sirens. In July 2014 MCDEM published a Technical Standard "Tsunami Warning Sirens". (<https://www.civildefence.govt.nz/assets/Uploads/publications/Tsunami-Warning-Sirens-TS-03-14.pdf> is the link to the standard). In the development of the MCDEM Technical Standards in 2014, the Northland CDEM Group were consulted on its existing tsunami siren network function, structure, design and processes.

The technical standard also outlines 14 principles for the use of sirens for tsunami warnings. One of the principles outlines that sirens may be used for distant and regional source tsunami. Activation of sirens must not be expected for local source tsunami (<1-hour travel time) experiencing the strong earthquake is the only reliable warning source for a local event.

The Technical Standard refers to the natural warnings of a strong earthquake as the only reliable warning. Recent research carried out by GNS raises doubt about whether any natural warning ie Long Strong earthquake being felt would actually occur in Northland. A significant earthquake in New Zealand and off shore may not be felt in Northland and is not a reliable natural warning of tsunami for Northland communities.

Part of the Northland public education programme is to educate communities on the natural warning signs of ocean behavior before a tsunami arrival. This compliments the use of a wide range of alerting tools in Northland, which includes a tsunami siren network for alerting communities to a tsunami threat.

Research also shows that an accompanying public education programme is required to compliment the use of sirens. Northland has a comprehensive public education programme, which includes tsunami information boards and the use of social media.

The current sirens although effective, as demonstrated during the 5 March tsunami alert and evacuation in Northland, lack several of the criteria identified in the National Tsunami Technical Standard. The group has investigated a number of options in regard to the siren network and has agreed to upgrade the existing sirens.

The new upgraded siren will is capable of delivering voice messaging (pre-recorded and live), a 100 dbh sound and has a much wider coverage. The system will also be completely controlled by CDEM professionals. The current systems are connected to electricity lines company systems and as we experienced on 15 March there is potential for sirens to be activated erroneously by control room operators.

The councils in Northland have provided for the tsunami siren upgrade in each of their Long Term Plans, however there is a shortfall of funding to complete the entire network and with what is available in the LTP's only a partial upgrade of the system is possible.

This application is made to support installation of tsunami sirens in locations on the Northland coast in those areas with large populations and high risk from tsunami within the immediate future. (ie Phase 1 of 20 sirens into high risk areas by 1 June 2021).

Alignment with identified goals and objectives identified in the CDEM sector

Goals/Objectives

National Resilience Strategy

Working together to manage risk and build resilience through;

2. Effective Response to and Recovery from Emergencies

Northland CDEM Group Plan;

Kia mahi tahi, kia hangaia he pakaritanga ki roto inga rohe o Te Taitokerau.rubber

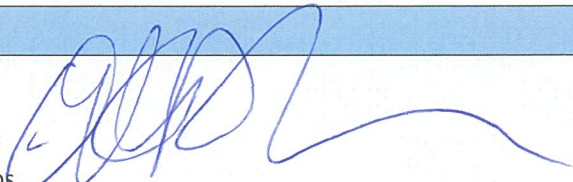
Vision: 'Working together to create resilient communities in Northland'

Goal 3: 'Enhancing capability to manage civil defence emergencies (Response)'

The objective is to ensure that the group has in place effective warning systems to enable agencies and the community to respond rapidly to a potential event

Delivering better responses, natural disasters and other emergencies- Government response to the Technical Advisory Group's recommendations (August 2018)

The review identified the requirement of speed up warning and evacuation arrangements.

Dissemination of benefits to sector Strengthening and enhancing capability at the local and regional level		
Project design		
Project manager	Graeme MacDonald	
Other project members	Northland CDEM Group members	
External providers/contractors	Nil	
Deliverables		
Milestones	Date for completion	Cost
Stage 1	1 June 2021	\$250,000
Identified risks		
Risks	Suggested management	
Insufficient funding to support complete installation programme	Distribute funds across region according to risk and consequence.	
Funding request and use		
CDEM resilience fund contribution	\$250,000	
Local authority/organisation contribution	\$3.5m over 10 years	
Other sources of funding or support		
Budget		
Applies if application exceeds \$100,000 over the life of the project	Do you wish to attend a hearing in support of this application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Application confirmation		
Approval of CEG Chair	 Tony Phipps Northland CDEM Coordinating Executive Group Chair. 14 January 2021	