

Vulnerable: The quantum of local government infrastructure exposed to sea level rise.

“Impacts resulting from sea level rise will be far reaching, and will need central and local government, communities, iwi, businesses and property owners to coordinate investments to adapt and build community resilience.”



**We are.
LGNZ.**

Te Kāhui Kaunihera o Aotearoa.

Introduction

Councils are already experiencing the impacts of climate change and are beginning to recognise that communities' resilience to climate change depends in large part on what is being done to adapt to it.

< However, until now councils have not had a good understanding of the type, amount and replacement value of local government owned infrastructure exposed to sea level rise, and therefore if and where adaptation planning should be prioritised. >

Impacts resulting from sea level rise will be far reaching, and will need central and local government, communities, iwi, businesses and property owners to coordinate investments to adapt and build community resilience. For too long in the local government setting, dialogue has focused on response to an opaque impact; unquantified costs have led to indecision in planning and investment, and vague objectives.

To fill this gap, LGNZ has gathered critical evidence identifying the current quantity and replacement value of infrastructure exposed to sea level rise at four increments; mean high water springs (MHWS) plus 0.5, 1.0, 1.5 and 3.0 metres. Although the focus was primarily on roads, three waters infrastructure and buildings, data was

collected on all available owned infrastructure (such as greenspace, jetties and airports).

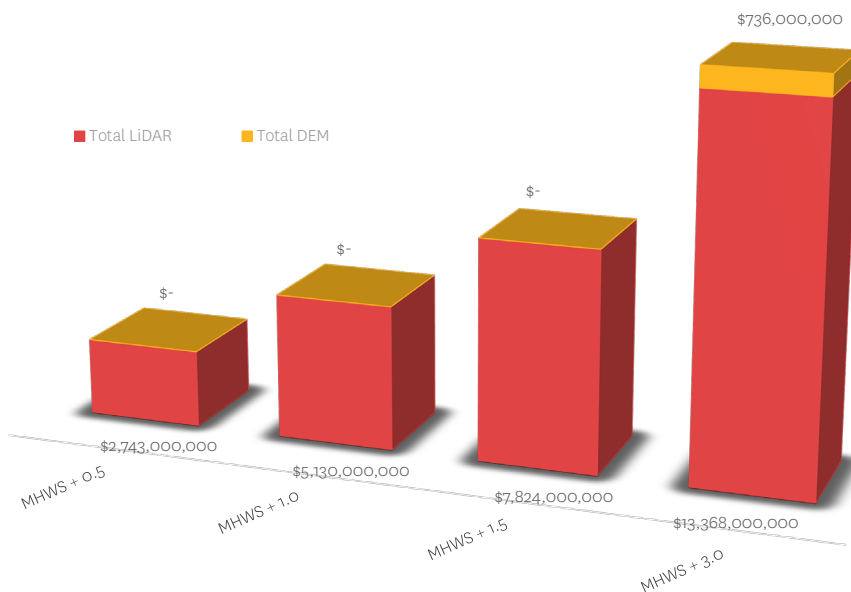
LGNZ's investigation aims to support council decision-makers' efforts to plan for adaptation, and will be followed by ongoing advocacy to the Government and stakeholders to support the development of tools and resources that councils and their communities can use to adapt to climate change.

Our analysis reveals that more than \$4 billion of three waters infrastructure, roughly \$1.0 billion of roading infrastructure and \$1.2 billion of buildings and facilities is exposed at a 1.5-metre elevation increment of sea level rise. The total value of all infrastructure types exposed is estimated at approximately \$8.0 billion.

The data that LGNZ has gathered confirms that the real challenge for our communities is to accept that multi-generational investment for sustainable future outcomes is needed now.

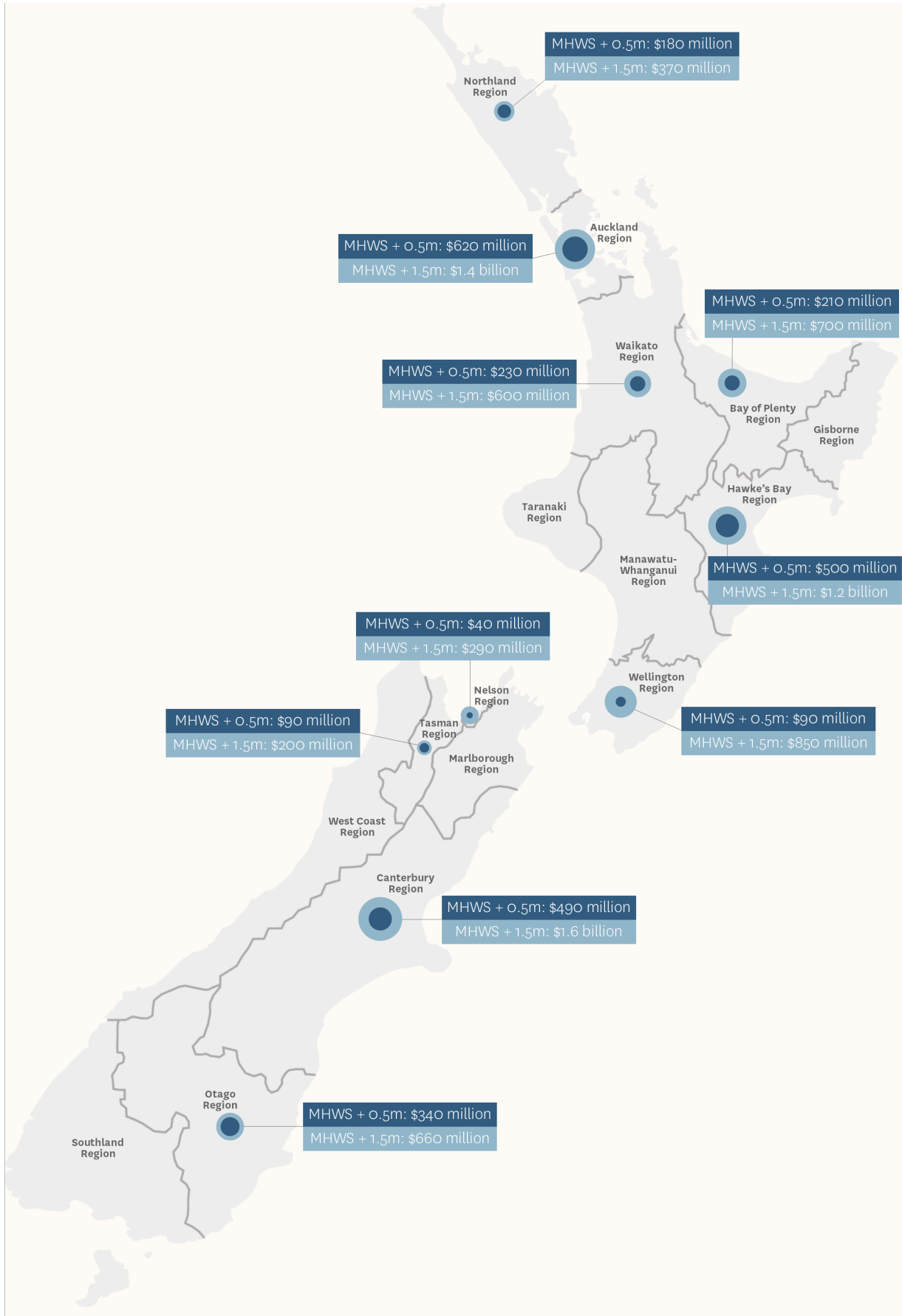
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Figure 1: Total replacement value of exposed infrastructure



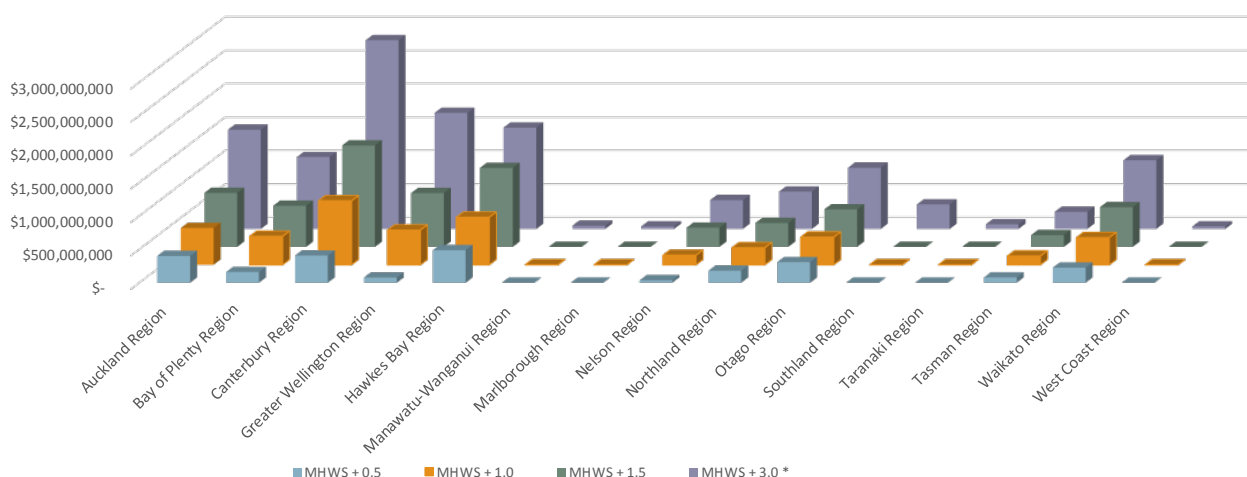
Note: Note: LiDAR data was available for 43 out of the 62 coastal councils surveyed. For the remainder only National DEM (Digital Elevation Model) data was available at an elevation of MHWS + 3.0m. DEM is Digital Elevation Model and LiDAR is Light Detection And Ranging.

Figure 2: Total replacement value of exposed infrastructure for priority regions at MHWS + 0.5M and 1.5M



Note: No data is shown for the West Coast, Southland, Marlborough, Taranaki, and Manawatu-Whanganui Regions due to no LiDAR being available for these areas. No data was provided for the Gisborne Region. The total replacement value shown is the value for all infrastructure categories (three waters, buildings, transport, greenspace and landfills).

Figure 3: Total replacement value for three waters, roading and building/facilities by region



Note for *: MHWS + 3.0m includes data from councils with both LiDAR and DEM contour information. DEM data is much coarser and only represents a small proportion of Councils and the related quantity / value of assets exposed.

Proposed actions

To address the issues and challenges identified in this study, LGNZ has developed a very broad, but targeted, set of proposed actions.

1. **Local government leads a national conversation about levels of service currently provided and what can be anticipated in the short (1 – 10 years), medium (10 – 30 years) and long term (30+ years). This should include comprehensive and targeted communication and engagement by local government with residents, iwi and businesses exposed to rising sea levels.**

Local government must actively engage with a wide range of stakeholders to inform decisions about how best to prepare for and address rising sea levels. Inter-council coordination to undertake a conversation on a national and/or regional level will enable councils to identify opportunities for regional collaboration to ensure that they are able to deliver levels of service that are expected, or find suitable alternatives, in critical areas.

2. **Central and local government coordinate to establish a National Climate Change Adaptation Fund to improve stakeholder participation in responding to climate change and to ensure equitable outcomes.**

Local government and its communities will be unable to address the costs of adapting to climate change alone. Central and local government therefore must work together to determine funding arrangements that will support and enable communities to undertake adaptive action at the local level. An Adaptation Fund, if well designed, should improve the capability and capacity

of councils to ensure climate change disruption to communities is kept to a minimum.

3. **Establish a Local Government Risk Agency to assist and guide consistent and expedited planning, decision-making and procurement, and build local government capability and capacity to identify, quantify and understand risk.**

A Local Government Risk Agency would support councils by improving their capability and capacity to understand and prepare for risks associated with sea level rise (and other climate change related impacts). A Local Government Risk Agency should support inter-council coordination by maximising opportunities for collaborative and efficient planning, decision-making and procurement. Councils need to coordinate around things such as what data is needed and its quality. While leadership could be provided by central government, local government is best-placed to provide that leadership itself through a more collaborative approach.

4. **Local government coordinates with owners and users of exposed infrastructure to create a National Master Plan, prioritising options and opportunities for responding to sea level rise.**

Local government must work with a wide range of stakeholders to identify opportunities for addressing the risks posed by sea level rise. The purpose of such discussions should be to allocate and agree upon roles and responsibilities for addressing risk. This is an area on which councils should work collectively so that they can identify areas where they can coordinate to maximise opportunities for action.