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Resilient New Zealand – key geospatial resilience dataset

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UNWGIC Disasters Will Happen: How can We Be Better Prepared?

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OUR VISION The power of 'where' drives NZ's success

the power of where drives NZ's success

OUR OUTCOME Geographic and property information are both used effectively to address key challenges for NZ: resilience and climate change, water, urban areas

Challenge	Water	Resilience and climate change	Urban areas
Description	Contribute to better management of fresh water, including quality and allocation (3-waters are in 'urban areas').	Support efforts to prepare for, mitigate and adapt to the impacts on land and sea of climate change and one-off events (natural and man-made).	Contribute to managing and responding to pressures on urban areas from population growth.

Resilience and climate change

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LINZ's key activities:

- Identify key datasets and implement an improvement plan
- Provide authoritative national datasets that are openly available and can be relied on – reduction, readiness, response, and recovery
- Formalise the support role offered by LINZ during an emergency event

To support more effective risk management and response to and recovery from an emergency event.

Criteria to Identify Key Datasets

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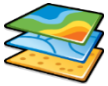
Data Re-Use for Resilience and Climate Change



- Geospatial layer
- Base Layer
- Multiple Use

Data Significance for Resilience and Climate Change

- National Coverage
- Legislation
- Physical Infrastructure
- Navigation
- Public Funding

Data for Resilience and Climate Change Scenarios

- Response
- Risk Reduction

Resilience and climate change

Key Datasets for Resilience & Climate Change

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Over 100 datasets identified and ranked – focus on top 12

Address

Buildings

Property

Population

Road Network
Rail Network

Aerial Photography

Topographic Map

Elevation

Coastline

River Network
Water Catchments

1

High-value geographic and property information

Resilience and climate change

Next Steps

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- Validate key datasets with resilience community
- Work with data custodians within LINZ to identify planned improvements to key datasets
- Work with external data custodians to identify planned improvements to key datasets
- Establish and prioritize improvement plan for key datasets

High-value geographic and property information

Resilience and climate change

Key datasets

NZ 12 top resilience datasets

- Address
- Buildings
- Property
- Population
- Aerial Photography
- Topographic Map
- Elevation
- Road Network
- Rail Network
- River Network
- Water Catchments
- Coastline

UN 14 Fundamental Data Themes

- Global Geodetic Reference Frame
- Address
- Buildings and Settlements
- Elevation and Depth
- Functional Areas
- Geographic Names
- Geology and Soils
- Land Cover and Land Use
- Land parcels
- Othoimagery
- Physical Infrastructure
- Population Distribution
- Transport Network
- Water

Key datasets

NZ 12 top resilience datasets

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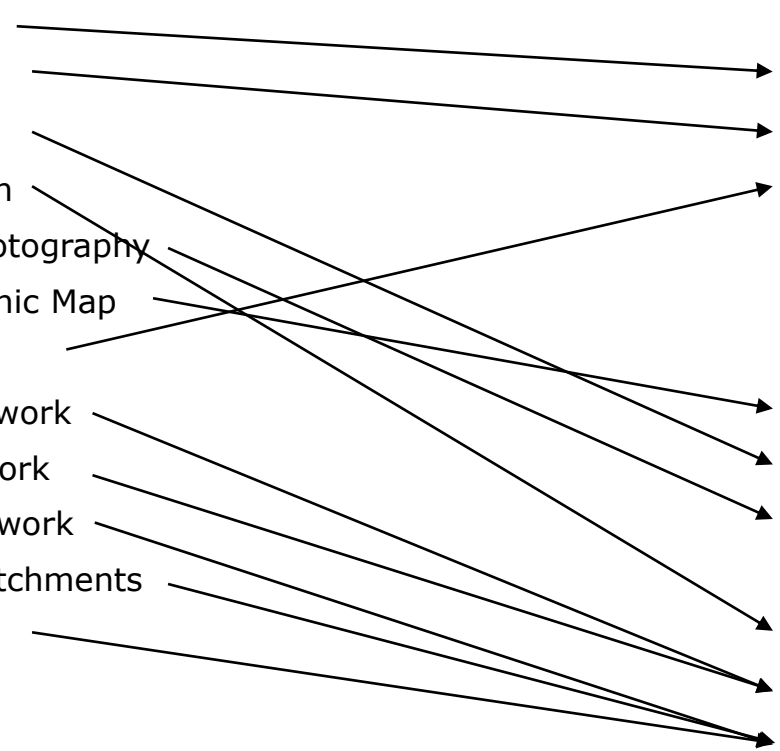

Top priority UN GGIM geospatial data themes?

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NZ 12 top resilience datasets

- Coastline
- Property Boundaries
- Rail Transport Network
- River Network
- Road Transport Network
- Population Data
- Address
- Buildings
- Elevation
- Water Catchments
- Topographic Map
- Aerial Photography

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Challenges for geospatial data sharing and accessibility before, during and after a disaster

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The NZ Government has a policy of proving data under an open creative common license. However not all data is held by Government

Key challenges:

- Providing data that has privacy issues or is commercially sensitive
- Locating the authoritative source of data
- Lack of standards for key datasets
- Combining distributed datasets into a national dataset
- Developing and providing an authoritative portal for access to the data

What is the most important thing the UNGGIM can do to overcome the challenges

- Provision of ‘operational’ standards/guidelines for key datasets
- Work with key international agencies (remote sensing) for the provision of information following an event

National Elevation Improvement

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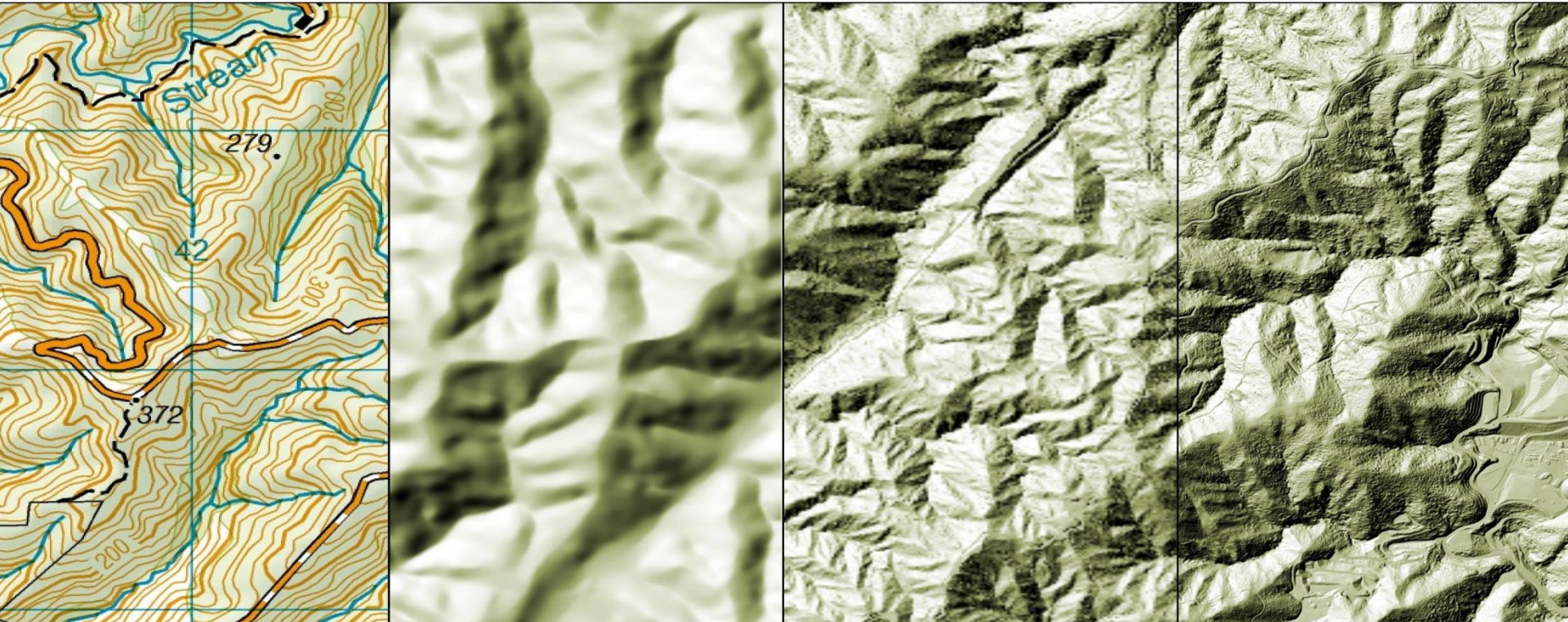
"Changing the source elevation data from mapping contours to LiDAR provides the DEMs required for better interpretation of remote sensing data."



Flood risk example

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National DEM – 10m accuracy

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LiDAR provides sub-m accuracy

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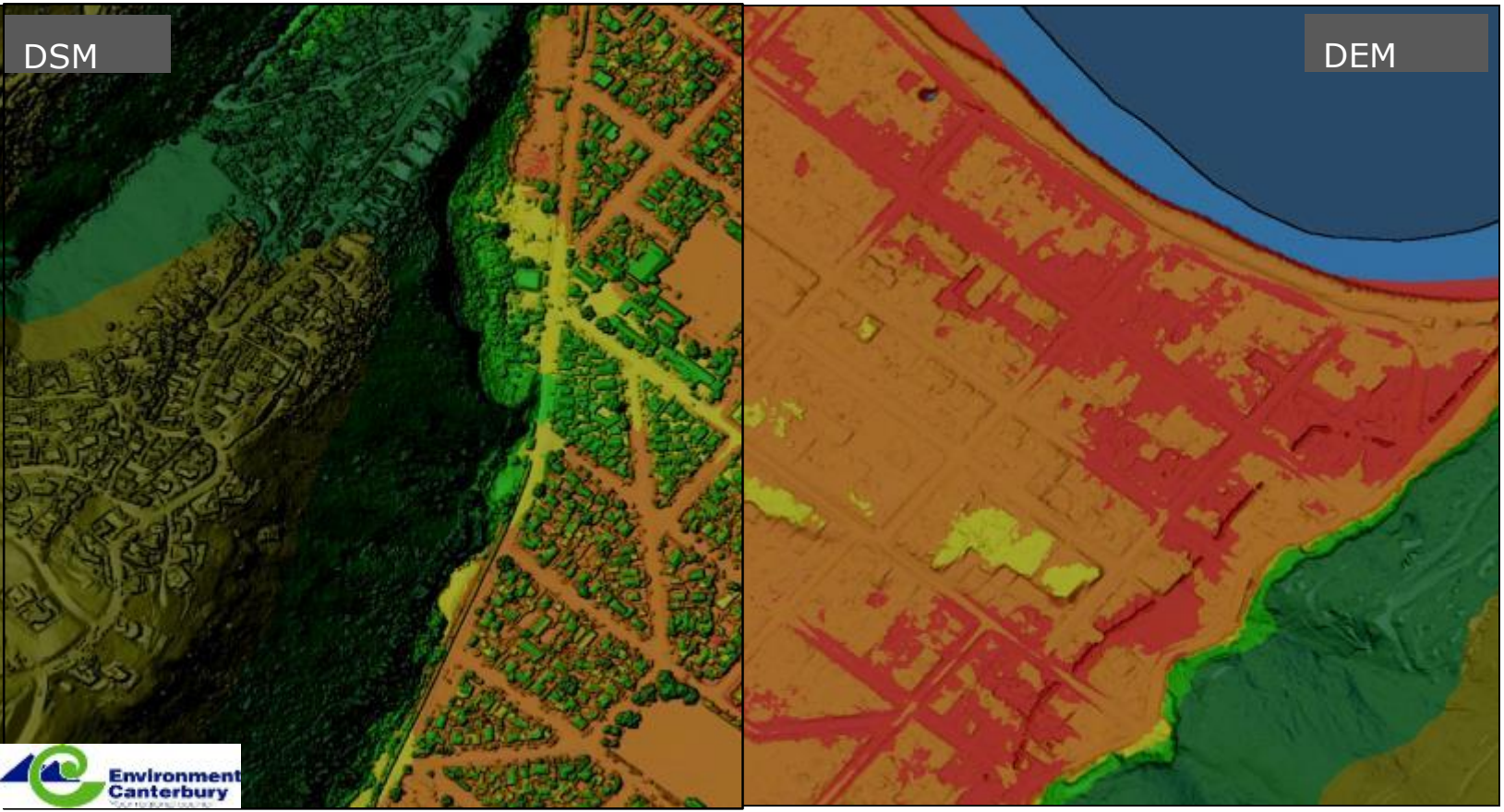

Filling in the missing piece

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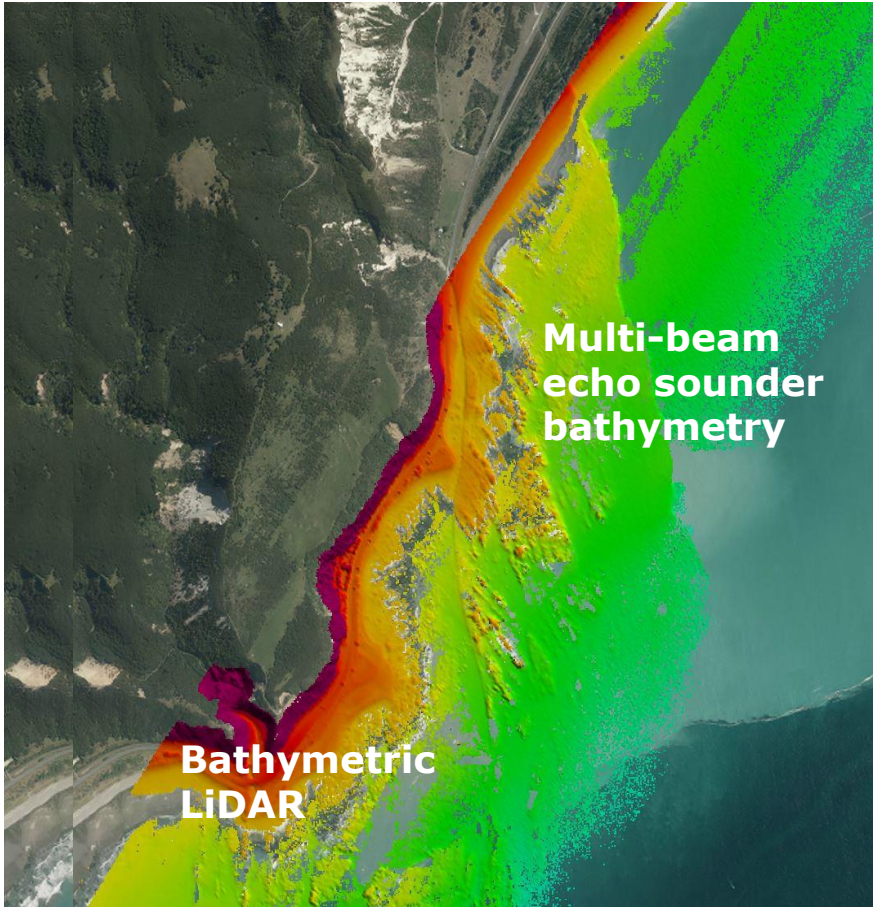

Kaikoura earthquake pre and post-event imagery and LiDAR

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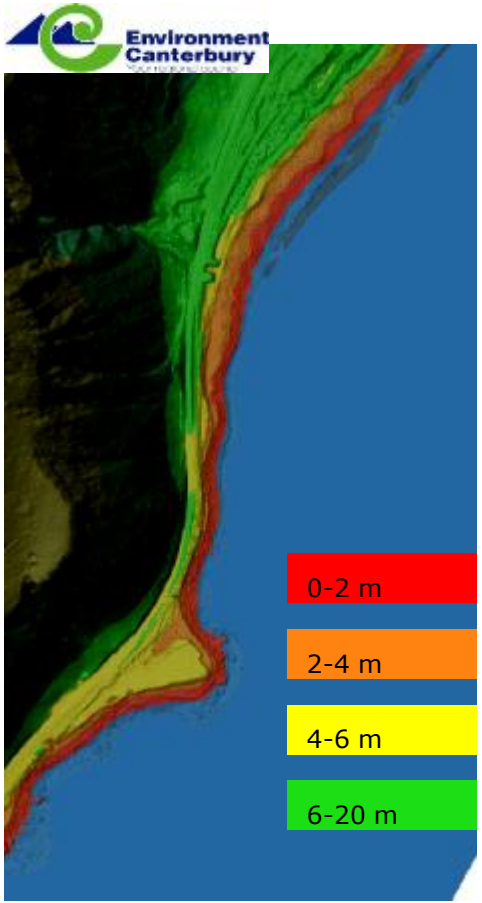

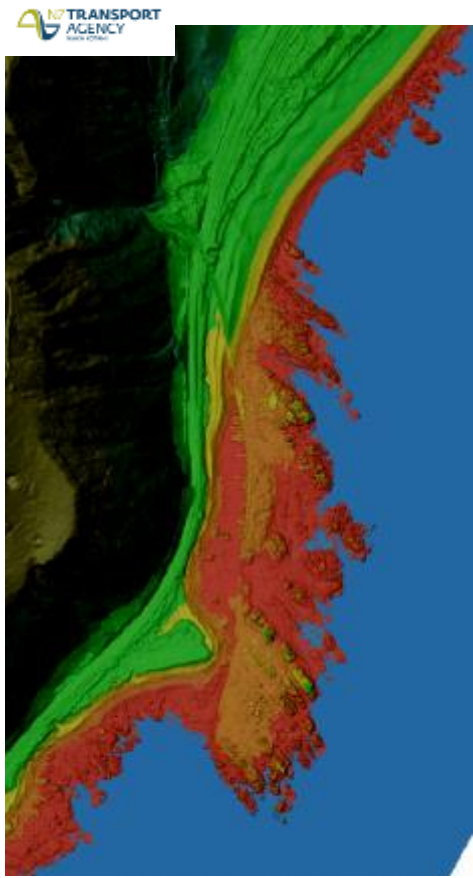


Questions