

Our Ref DOIA 24-322

14 June 2024

██████████
RNZ

██████████@rnz.co.nz

Wellington Office

Radio New Zealand House
155 The Terrace

PO Box 5501

Wellington 6145

New Zealand

T 0800 665 463

F +64 4 472 2244

E customersupport@linz.govt.nz

W www.linz.govt.nz

Tēnā koe ██████████

Response to your official information request

Thank you for your official information request received on 28 May 2024 for information regarding “the Common Operating Datasets for Emergency Management work and how that intersects with lack of a Common Operating Platform/Picture.”

In response to your request, and given your focus is on the Common Operating Datasets for Emergency Management (CODEM) work, we would like to provide you with the following background and context. Once you have had the opportunity to consider this information, please contact us to discuss and clarify what further information you may wish to receive.

Our role in resilience and climate change

Resilience and climate change is a critical challenge facing New Zealand. Toitū Te Whenua Land Information New Zealand’s (LINZ) role is to help coordinate and promote the use of geographic data as New Zealand prepares for and responds to emergency events and climate change.

Our focus is on improving key datasets in peace time and supporting emergency response agencies during an event by coordinating the collection and supply of geospatial information. An overview of our [resilience and climate change work](#)¹ can be found on the LINZ website.

The CODEM demonstrator was created to conceptualise how a geospatial data catalogue could contribute to other organisations’ common operating platforms/pictures.

Key data improvements

Since 2018, we have engaged with the emergency management geospatial community to identify the key datasets which they consider critical in decision-making in emergency management and responding to climate change.

¹ <https://www.linz.govt.nz/products-services/data/types-linz-data/resilience-and-climate-change>

The emergency management geospatial community is represented by [Geospatial Emergency Management Aotearoa](#)² (GEMA), the local government [Geospatial Special Interest Group](#)³ and the National Emergency Management Agency (NEMA).

Using these insights, we work with the owners of these key datasets to ensure their data is accessible and available to support emergency management. Each year a data improvement plan is developed with our partners and published on the LINZ website. You can find the [2023/24 Data Improvement Plan here](#)⁴.

The first national key data improvement plan was published in June 2019. At this time only two of the 12 key datasets were considered reasonably fit for emergency management purposes – LINZ's Topo50 Maps and NZ Primary Parcels.

As at October 2023, 11 of the 12 key datasets are assessed as fit for purpose for emergency management, with Roads data having the most opportunity for improvement. **Appendix 1** provides a summary of the latest Key Data Assessment, which includes two new datasets that have not yet been assessed.

The [Key Datasets for Resilience and Climate Change overview](#)⁵ of the programme was updated in May 2023. This storymap provides an overview of what has been achieved, and lists areas for improvement based on customer feedback. We've used these customer insights to drive work programmes over the past year and we look forward to announcing further improvements to available datasets shortly.

Geospatial support in an emergency

LINZ provides geospatial information and support to organisations who respond to emergency events. Our people are specialists in mapping, data and nautical charts, so we have the data and expertise that can help response agencies identify hazards and understand what may have happened to the land, sea and waterways before and after an emergency event.

When an emergency event occurs that may require geospatial support, LINZ will activate its duty team and reach out to Civil Defence groups and emergency responders advising them we are available. Most frequently, our role is to coordinate the collection and supply of:

- aerial photography
- satellite imagery
- LiDAR elevation data
- bathymetry (detailed sea-bed mapping).

² <https://gema.nz/>

³ <https://nz.linkedin.com/company/lgga>

⁴ https://www.linz.govt.nz/sites/default/files/doc/Key%20datasets%20for%20resilience%20and%20climate%20change%20-%20Priority%20data%20improvement%20plan%202023_24.pdf

⁵ <https://storymaps.arcgis.com/stories/b4dd46f15cea4234a098b4c8caae5b3d>

This geospatial information can assist response agencies to record the scale of damage and assess impacts. For example, we can help them determine the extent of a flood or the loss of farmland after a fire.

Please refer to **Appendix 2** for a summary of emergency events for which LINZ has provided geospatial support since January 2020.

The CODEM demonstrator

As a result of the Covid-19 pandemic, there was willingness across key emergency response agencies for improved and coordinated geospatial information, systems and capability across government during an emergency event.

In 2021, LINZ led discussions with NEMA and geospatial specialists from emergency response agencies on their common operating picture requirements. These discussions confirmed that the organisations wanted to make their own choices about which technology platforms and systems they use within their specific operational environments.

Therefore, rather than creating a single Common Operating Picture (COP) to be used by all organisations and accessed via a single system, LINZ focused on accessible, authoritative sources of geospatial data that could feed into technology platforms and systems of emergency response agencies.

LINZ utilised the [GovTech Accelerator](#) programme to design a potential solution that would reflect the needs of emergency management stakeholders that focuses on how improved access to “Common Operational Datasets” could be achieved. The GovTech Accelerator programme cost was approximately \$50,000 plus GST.

Following the conclusion of the 13-week GovTech project, the CODEM demonstrator was developed.

Unlike a COP which “is achieved through a system of protocols, procedures and tools that facilitate shared awareness and understanding of the situation and enable consolidated planning”⁶, CODEM would be a web-based catalogue that acts as a single point of access to connect users to authoritative geospatial datasets. Once put into production, ongoing technical support and maintenance would be required to ensure it remained up-to-date and authoritative.

The CODEM demonstrator shows the geospatial data catalogue as a concept, it does not have full functionality. Therefore, because the demonstrator is not fully functional, it has not been and currently cannot be used to provide access to geospatial datasets to support emergency events. LINZ is not funded to further develop the CODEM demonstrator, put it into production and sustain ongoing maintenance.

You can access the [CODEM demonstrator here](#)⁷.

⁶ <https://www.civildefence.govt.nz/assets/Uploads/documents/cims/CIMS-3rd-edition-FINAL-Aug-2019.pdf>

⁷ <https://codem-eaglelabs.hub.arcgis.com/>

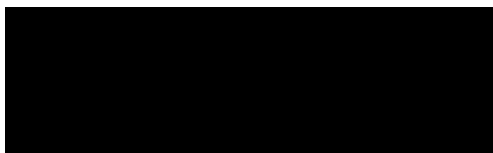
Further information

We trust this context and background information is useful. If you would like further information, you are welcome to contact us at ministerialsupport@linz.govt.nz.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Please note, this response letter outlining our decision on your request, **with your personal details withheld**, and any attached documentation will be published on the LINZ website. This is likely to be published by 20 July 2024.

Nāku noa, nā



Aaron Jordan
Head of Location Information

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APPENDIX 1 – Summary of Key Data Assessment as at October 2023

Key Data Assessment 2023/24

The wider geospatial emergency management community consultation outlined on page 9 resulted in the following assessment of the 14 key datasets.

The feedback was unanimous that roads data has the most opportunity for improvement, and there are a high number of requests for changes to property, rivers and imagery.

Rail has only two requests, and buildings, address, suburbs, elevation, population, coastline and topo maps each have at least three data improvement requests. Rapid Building Assessments and place names have not yet been assessed. Each data improvement request relates to one of the key data assessment criteria ([Appendix B](#)).

Key data improvements	Population	Building	Address	Suburbs
Property	Rapid Building Assessments	Roads	Rail	Elevation
Rivers & Catchments	Imagery	Coastline	Topo Maps	Place Names

Summary of key data assessment at October 2023.

The key assessment represents the number of data improvements requested:

- Very Good One or two data improvements requested
- Good Three to five data improvements requested
- Average Six to nine data improvements requested
- Poor Ten or more data improvements requested
- New key dataset has not yet been assessed by customer representatives.

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Excerpt from [Key Data for Resilience and Climate Change Data Improvement Plan 2023/24](#) (dated 18 October 2023) available on the LINZ website.

APPENDIX 2: Summary of emergency events for which LINZ has provided geospatial support since January 2020

LINZ actively monitors for potential and actual emergency declarations and offers support to the relevant Civil Defence Emergency Management (CDEM) groups and emergency response agencies, such offers are not always taken up.

Below is a list of emergency events where LINZ has provided geospatial support (it excludes events where the LINZ Geospatial Incident Management Team was activated but no support was required).

CDEMs and emergency response agencies do not always advise LINZ how they are going to use, or have used, the data in their response activities. However, past uses of imagery have included:

- identifying damage to infrastructure
- assessing where to prioritise response activities and community support
- undertaking pre- and post-event change analysis.

Date	Event	LINZ geospatial support
04 Feb 2020	Southland flooding local emergency	Provided assistance to Emergency Management Southland to identify and procure satellite imagery to support the response.
09 Mar 2020	COVID National emergency	Between March – September 2020: <ul style="list-style-type: none"> • Maps created for Police and 16 regional Civil Defence Emergency Teams, • Data validation for Fire and Emergency NZ
10 Nov 2020	Napier flooding local emergency	Provided assistance to Hawkes Bay CDEM to identify and procure satellite and aerial imagery to support the response.
16 July 2021	West Coast and Marlborough flooding local emergencies	Provided assistance to West Coast CDEM to identify and procure satellite imagery to support the response.
01 Feb 2022	Taranaki severe weather local emergency	Provided assistance to Taranaki CDEM to identify and procure satellite imagery to support the response.
23 Mar 2022	Tairāwhiti severe weather local emergency	Provided assistance to Tairāwhiti CDEM to identify and procure satellite imagery to support the response.
16 Aug 2022	Top of the South severe weather local emergency	Coordinated aerial imagery and LiDAR requirements and areas of interest for Nelson Tasman CDEM, Marlborough CDEM and Waka Kotahi
27 Jan 2023	Upper North Island and Auckland flooding local emergencies	Monitored satellite imagery of areas of interest and offered geospatial support for obtaining imagery and LiDAR to Auckland, Waikato, Bay of Plenty and Northland Councils. Processed satellite imagery and shared with Police, NEMA and Auckland CDEM.

Date	Event	LINZ geospatial support
06 Feb 2023	Cyclone Gabrielle national emergency	High resolution imagery of flood-hit areas supports cyclone recovery ⁸ Pages 13-17 in the LINZ 2022/23 Annual Report ⁹
22 June 2023	Tairāwhiti severe weather (Cyclone Hale) local emergency	Provided satellite imagery to Tairāwhiti CDEM.
15 February 2024	Port Hills Fire local emergency	Monitored satellite imagery and provided property data to Police to support evacuations.

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⁸ <https://www.linz.govt.nz/news/2023-03/high-resolution-imagery-flood-hit-areas-supports-cyclone-recovery>

⁹ <https://www.linz.govt.nz/resources/annual-report/annual-report-202223>