

BUILDING PERFORMANCE

Progress toward identifying potentially earthquake-prone buildings 2021

FEBRUARY 2022



Use of this report

Readers should always refer to subpart 6A of Part 2 of the Building Act 2004 (special provisions for earthquake-prone buildings), the earthquake-prone building guidance, methodology and register as well as education and training provided on the [building.govt.nz](https://www.building.govt.nz) website.

Questions about this report and management of earthquake-prone buildings can be sent to EPB_TA_monitoring@mbie.govt.nz

ISSN (online) 2703-3058

Published February 2022 (first edition)

Evidence and Insights Branch | Digital, Data and Insights
Ministry of Business, Innovation and Employment (MBIE)
PO Box 1473, Wellington 6014, New Zealand

www.mbie.govt.nz | www.building.govt.nz

1. Contents

2. Definitions	2
3. Executive summary	3
4. Background, purpose and methodology	4
4.1 Background.....	4
4.2 Purpose.....	5
4.3 Methodology.....	5
4.4 Disclaimer.....	5
5. Territorial authorities required to report in 2021 by seismic risk area	6
6. Identifying potential earthquake-prone buildings in high seismic risk areas	7
6.1 All priority potential earthquake-prone buildings in high seismic risk areas have been identified.....	7
6.2 TAs with high seismic risk areas are well underway in identifying non-priority potential EPBs.....	7
7. Identifying potential earthquake-prone buildings in medium seismic risk areas	8
7.1 TAs with medium seismic risk areas are also well underway in identifying priority potential EPBs.....	8
7.2 Some priority buildings are being identified with community help.....	8
7.3 Some priority buildings have their own identification process.....	9
7.4 TAs with medium seismic risk areas have made an early start in identifying non-priority EPBs.....	9
8. Formalising the identification of an EPB	10
8.1 Outcomes of determinations.....	10
9. Conclusion and next steps	11
9.1 Conclusion.....	11
9.2 Next steps.....	11

2. Definitions

Term	Definition
District	An area managed by a territorial authority (defined in section 7 of the Building Act 2004)
Earthquake-prone building (EPB)	A building, or part of a building, is earthquake-prone if it will have its ultimate capacity exceeded in a moderate earthquake, and if it were to collapse, would do so in a way that is likely to cause injury or death to persons in or near the building or on any other property, or damage to any other property.
Earthquake-Prone Building (EPB) methodology	The document used by territorial authorities and engineers to identify, assess and make decisions on potentially earthquake-prone buildings. It is set by the Chief Executive of MBIE under the Building Act 2004.
High seismic risk	An area that has a Z factor (the seismic risk factor of an area determined in accordance with Standard NZS 117.5:2004), that is ≥ 0.3
Medium seismic risk	An area that has Z factor that is ≥ 0.15 and < 0.3
Low seismic risk	An area that has a Z factor that is < 0.15
MBIE	Ministry of Business, Innovation and Employment
Priority building	Buildings in high and medium seismic risk area that are considered to present a higher risk due to their construction, building type, use or location.
Territorial authority (TA)	Territorial authority is defined under the Local Government Act 2002 as a city or a district council
Unreinforced masonry (URM)	Concrete, stone or brick masonry that has no reinforcing steel

3. Executive summary

TAs (Territorial Authorities) are required to report on their progress in identifying potential earthquake-prone buildings (EPBs). This was the fourth year TAs have reported on their progress to the Ministry of Business, Innovation and Employment (MBIE) since the national system for managing EPBs came into effect on 1 July 2017. Reporting began on 28 July 2021 and closed on 23 September, by which time all TAs had reported. The key conclusions of this report are:

All priority potential earthquake-prone buildings in high seismic risk areas have been identified

All TAs with high seismic risk areas were required to identify priority potential EPBs by January 1, 2020. As reported last year, all priority potential EPBs in high seismic risk areas have now been identified.

TAs with high seismic risk areas are well underway in identifying non-priority potential EPBs

The majority of TAs (89 per cent) have either completed identification of, or have started identifying, non-priority potential EPBs in their high seismic risk area. So far, 2,396 buildings have been identified as being a non-priority potential EPB.

TAs with medium seismic risk areas are also well underway in identifying priority potential EPBs

The majority of TAs (89 per cent) have either completed identification of, or have started identifying, priority potential EPBs in their medium seismic risk area. So far, 1,896 buildings have been identified as being a priority potential EPB.

TAs with medium seismic risk areas have made an early start in identifying non-priority potential EPBs

Although not required to complete identification of all non-priority potential EPBs until 1 July 2027, most TAs (84 per cent) are either well underway or have made a start. So far, 1,441 buildings have been identified as a non-priority potential EPB.

The next progress report will be in 2022

The next report will include progress from 38 TAs with high seismic risk areas in meeting the 1 July 2022 deadline for identifying all non-priority potential EPBs.

4. Background, purpose and methodology

4.1 BACKGROUND

On 1 July 2017, a national system came into effect that introduced new provisions for managing earthquake-prone buildings (EPBs) in New Zealand. These provisions affect building owners, territorial authorities (TAs), engineers, building professionals and building users.

The Building (Earthquake-prone Buildings) Amendment Act 2016 introduced major changes to the way EPBs are identified and managed under the Building Act 2004. It uses knowledge learned from past earthquakes in New Zealand and overseas. The new national system for managing earthquake-prone buildings is consistent across the country and focuses on the most vulnerable buildings.

How the EPB system works:

- › TAs identify potential EPBs
- › Owners who are notified by their TA must obtain engineering assessments of the building carried out by suitably qualified engineers

- › TAs determine whether buildings are earthquake-prone, assign ratings, issue notices and publish information about the buildings in a public register
- › Owners are required to display notices on their building and to remediate their building.

The EPB system also divides New Zealand into three seismic risk areas – high, medium and low. Each has their own reporting schedule. TAs with high seismic risk areas are required to report every year until 2022, TAs with medium seismic areas are required to report every two years until 2027, and TAs with low seismic risk areas are required to report every three years until 2032.

They also all have their own timeframes for action as seen in Table 1 below. Additionally, priority buildings must be identified in a shorter timeframe than non-priority buildings and owners are given a shorter time in which to carry out work on priority buildings.

Table 1: Timeframes for action

Seismic risk area	TAs must identify potential EPBs by:		Owners of EPBs must carry out seismic work within (time from issue of EPB notice):	
	Priority	Other	Priority	Other
High	1 January 2020	1 July 2022	7.5 years	15 years
Medium	1 July 2022	1 July 2027	12.5 years	25 years
Low	N/A	1 July 2032	N/A	35 years

4.2 PURPOSE

This summary report informs all stakeholders about the progress that has been made by TAs (from the high and medium seismic risk areas) towards identifying potential EPBs in their districts during the period of **1 July 2020 to 30 June 2021**. It gives the Ministry of Business, Innovation and Employment (MBIE) an annual update and evidence in terms of:

- › how TAs have tracked in achieving their deadlines thus far
- › TAs' progress towards meeting future deadlines
- › which TAs are not tracking as expected and may require support.

This report also provides New Zealanders with assurance that risks posed to public safety by existing buildings in the event of an earthquake are being identified and managed.

Progress at individual TA-level is not provided. TAs may choose to publish their progress but are not required to do so.

4.3 METHODOLOGY

On 28 July 2021, 62 TAs in New Zealand's high and medium seismic risk areas were asked to complete their 2021 reporting requirements. This was the fourth year that TAs have reported on their progress in identifying potential EPBs to MBIE since the national system for managing EPBs came into effect on 1 July 2017. They were originally given six weeks to complete the progress report, but this deadline was extended in response to the emergence of COVID-19 in New Zealand. Reporting closed on 23 September, by which time all TAs had reported.

Some TAs will be wholly one seismic risk area, but some are a mix of seismic risk areas and as such are required to report on each relevant area. Twenty-five TAs were in the high seismic risk area only, thirteen had a mix of high and medium seismic risk areas and twenty-four were only reporting on their medium seismic risk area.

They were asked to provide information on their progress from 1 July 2020 to 30 June 2021 on various topics such as:

- › whether they have completed their community consultations on Unreinforced Masonry (URM) buildings and EPBs on busy and strategic routes, respectively
- › their progress in identifying the priority potential EPBs in medium seismic risk areas
- › their progress in identifying the non-priority potential EPBs in high seismic risk areas
- › how many requests for engineering assessments have been sent.

4.4 DISCLAIMER

The findings in this report and MBIE's interpretation of the answers is based on information provided by TAs at the time of the submissions, as well as any follow-ups MBIE was able to do with Councils (where applicable).

As MBIE works with TAs regularly, site and training visits and discussions with TAs may update these answers. If this happens, these changes will be shown in the next progress report with revised figures and interpretations.

5. Territorial authorities required to report in 2021 by seismic risk area

High	Medium/High	Low/Medium/High ¹	Medium	Low/Medium ²
Carterton District Council	Ashburton District Council	Southland District Council	Central Otago District Council	Clutha District Council
Central Hawke's Bay District Council	Buller District Council	Timaru District Council	Hamilton City Council	Dunedin City Council
Christchurch City Council	Mackenzie District Council	Waitaki District Council	Kawerau District Council	Gore District Council
Gisborne District Council	Marlborough District Council		Matamata-Piako District Council	Hauraki District Council
Grey District Council	Queenstown Lakes District Council		Nelson City Council	Invercargill City Council
Hastings District Council	Rangitīkei District Council		New Plymouth District Council	Ōtorohanga District Council
Horowhenua District Council	Ruapehu District Council		Rotorua Lakes Council	Thames-Coromandel District Council
Hurunui District Council	Tasman District Council		South Taranaki District Council	Waikato District Council
Hutt City Council	Taupō District Council		South Waikato District Council	Waimate District Council
Kaikōura District Council	Whakatāne District Council		Stratford District Council	Waitomo District Council
Kāpiti Coast District Council			Tauranga City Council	
Manawatū District Council			Waipā District Council	
Masterton District Council			Western Bay of Plenty District Council	
Napier City Council			Whanganui District Council	
Ōpōtiki District Council				
Palmerston North City Council				
Porirua City Council				
Selwyn District Council				
South Wairarapa District Council				
Tararua District Council				
Upper Hutt City Council				
Waimakariri District Council				
Wairoa District Council				
Wellington City Council				
Westland District Council				

¹ These TAs are only required to report on their Medium and High seismic risk areas this year.

² These TAs are only required to report on their Medium seismic risk area this year.

6. Identifying potential earthquake-prone buildings in high seismic risk areas

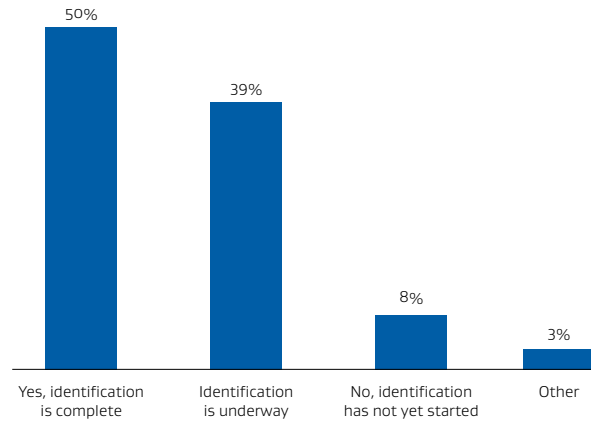
6.1 ALL PRIORITY POTENTIAL EARTHQUAKE-PRONE BUILDINGS IN HIGH SEISMIC RISK AREAS HAVE BEEN IDENTIFIED

All TAs with high seismic risk areas were required to identify priority potential EPBs by 1 January 2020. As reported last year, all priority potential EPBs in high seismic risk areas have now been identified.

6.2 TAS WITH HIGH SEISMIC RISK AREAS ARE WELL UNDERWAY IN IDENTIFYING NON-PRIORITY POTENTIAL EPBS

All TAs with high seismic risk areas are required to identify non-priority potential EPBs by 1 July 2022. When asked where they were in the process, the majority (89 per cent) have either completed identification or are underway. So far, 2,396 buildings have been identified as being a non-priority potential EPB.

Figure 1: Identification of non-priority potential EPBs progress in high seismic risk areas as at 30 June 2021



n = 38
Source: MBIE

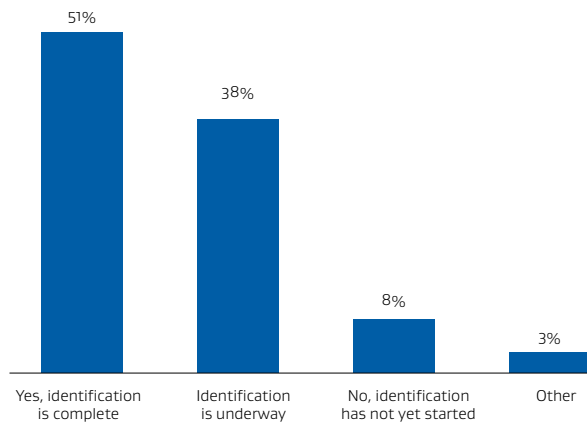
Of those who had not yet completed, most were confident they would meet the deadline. Only three out of the nineteen TAs who had not yet completed were not confident they would meet the deadline or were uncertain if they would.

7. Identifying potential earthquake-prone buildings in medium seismic risk areas

7.1 TAS WITH MEDIUM SEISMIC RISK AREAS ARE ALSO WELL UNDERWAY IN IDENTIFYING PRIORITY POTENTIAL EPBS

All TAS with medium seismic risk areas are required to identify priority potential EPBs by 1 July 2022. When asked where they were in the process, the majority have either completed identification or are underway. So far, 1,896 buildings have been identified as being a priority potential EPB.

Figure 2: Identification of priority potential EPBs progress in medium seismic risk areas as at 30 June 2021



n = 37
Source: MBIE

Of those who had not yet completed, all were confident they would meet the deadline.

7.2 SOME PRIORITY BUILDINGS ARE BEING IDENTIFIED WITH COMMUNITY HELP

TAs that are in the high or medium seismic risk areas can use special consultative procedures (as per section 83 of the Local Government Act 2002), to work with the public in their districts to prioritise the identification and remediation of potential EPBs that:

- > are on routes that are busy due to higher vehicle and pedestrian use (known as 'busy routes') and;
- > include parts of URM buildings that could fall during an earthquake on these busy routes and hence warrant its prioritisation.

This year only those TAS with medium seismic risk areas were asked about their consultations as those with high seismic risk areas have previously mostly reported having either completed consultations or deemed them unnecessary (37 out of 38 TAS).

Twenty-seven of those TAS with medium seismic risk areas have previously reported having either completed consultations or deemed them unnecessary. Of the 10 who had not started as at 1 July 2020, the majority have now either completed or are partway through.

Table 1: Status of special consultations as reported by TAS in 2021 in medium seismic risk areas

Status	URMs on busy routes	EPBs on strategic routes
Complete	4	3
Started but not complete	2	2
Not started yet	3	3
Not required	1	2

n = 10
Source: MBIE

For the URMs on busy routes consultation, TAs may have indicated that it was not required as there was no reasonable prospect of any thoroughfares with high vehicle or pedestrian traffic usage onto which parts of a URM building could fall during an earthquake.

TAs had discretion on whether they ran a consultation on EPBs on strategic routes so a 'not required' response may indicate that they do not have any buildings that could impede a strategic route, or TAs are simply using the option not to consult.

7.3 SOME PRIORITY BUILDINGS HAVE THEIR OWN IDENTIFICATION PROCESS

Where a building is identified as a priority building and meets the definition for hospital building, emergency building or education building set out in section 133AE of the Building Act 2004, the TA must also identify whether the building is potentially earthquake-prone using the EPB methodology. TAs were asked to report on whether they had completed the identification of these types of buildings. The majority of TAs reported that they had completed this work or that it was not applicable for their TA.

Table 2: Priority building status as at 30 June 2021

Type	Status	Number
Hospital	Identification complete	20
	Identification not yet complete	7
	Not applicable	10
Emergency	Identification complete	22
	Identification not yet complete	10
	Not applicable	5
Education	Identification complete	20
	Identification not yet complete	12
	Not applicable	5

Source: MBIE

7.4 TAs WITH MEDIUM SEISMIC RISK AREAS HAVE MADE AN EARLY START IN IDENTIFYING NON-PRIORITY EPBS

TAs with medium seismic risk areas are not required to have identified all non-priority potential EPBs until 1 July 2027. The majority (84 per cent) are either well underway or have made a start. So far, 1,441 buildings have been identified as a non-priority potential EPB.

8. Formalising the identification of an EPB

Identification of potential EPBs is formalised when the TA sends a letter to the building owner to notify them that their building is potentially earthquake prone

Building owners are required to contact an engineer (with the relevant skills and experience) to obtain an engineering assessment and provide this assessment to their TA within 12 months (along with any other information), or request an extension of up to 12 months, after being notified that their building is potentially earthquake prone.

TAs were asked how many letters have been sent to owners requesting an engineering assessment on potential EPBs as at 30 June 2021. Table 3 below shows the number of letters sent by the priority level of the building.

Table 3: Number of letters sent to potential EPB owners as at 30 June 2021

Priority level	Number
Priority	1,865
Non-priority	2,281

Source: MBIE

8.1 OUTCOMES OF DETERMINATIONS

Once owners have been notified by their TA that their building may be earthquake-prone, they must obtain an engineering assessment of the building carried out by a suitably qualified engineer. Once this information is provided to the TA, the TA makes a determination as to whether the building is earthquake prone. The outcomes of these determinations are shown in table 4 below.

Table 4: Total number of priority and non-priority potential EPBs where the TA has made a determination as at 30 June 2021

Outcome of determination	Number
Priority buildings determined EPB	826
Priority buildings determined not EPB	1,130
Non-priority buildings determined EPB	910
Non-priority buildings determined not EPB	3,791

Source: MBIE

9. Conclusion and next steps

9.1 CONCLUSION

New Zealand is extremely prone to seismic activity and buildings play a vital role in ensuring that people are safe, and property is protected during an earthquake.

Most of the 62 TAs required to report in 2021 showed promising progress in identifying potential EPBs and meeting the legislative deadlines. MBIE will follow up with the small number of TAs who weren't confident they would meet legislative deadlines and will provide support to help them meet the requirements.

9.2 NEXT STEPS

In 2022, only those TAs in high seismic risk areas will be required to report. They have a deadline of 1 July 2022 to have identified all non-priority potential EPBs.

The next step in the EPB process is for building owners to complete seismic work for buildings that are determined earthquake prone. Owners of a building (or part of a building) that has been issued with an EPB notice must complete seismic work before their individualised remediation deadlines. Future reporting will look at whether deadlines are being met and how TAs are handling any issues that arise from the remediation process.

