

**BUILDING
PERFORMANCE**

Progress toward identifying potentially earthquake-prone buildings: 2018

November 2018



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
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New Zealand Government

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Use of this report

Readers should always refer to the *Building Act 2004* Part 2 Building, Subpart 6A – Special provisions for earthquake-prone buildings of the Building Act 2004, the earthquake-prone building guidance, methodology and register as well as education and training provided on the building.govt.nz website.

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

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1 Progress toward identifying potentially earthquake-prone buildings

New Zealand is extremely prone to seismic activity. Failure of buildings, or parts of buildings, can endanger lives. Protection of people and property is paramount.

The regulatory framework

The Building (Earthquake-prone Buildings) Amendment Act 2016 introduced major changes to the way earthquake-prone buildings are identified and managed under the Building Act 2004.

The new earthquake-prone building (EPB) management system was introduced nationally on 1 July 2017. Under this system territorial authorities must:

- consult to identify well-used and strategic transport routes if necessary
- identify potentially earthquake-prone buildings
- notify the building owners and request engineering assessments
- consider engineering assessments provided by building owners
- determine if a building is earthquake prone, and if it is, assign an earthquake rating
- issue EPB notices to owners of earthquake-prone buildings
- publish information about earthquake-prone buildings on the EPB register.

The system focuses on how to manage the risks to public safety posed by existing buildings.

The reporting schedule for territorial authorities

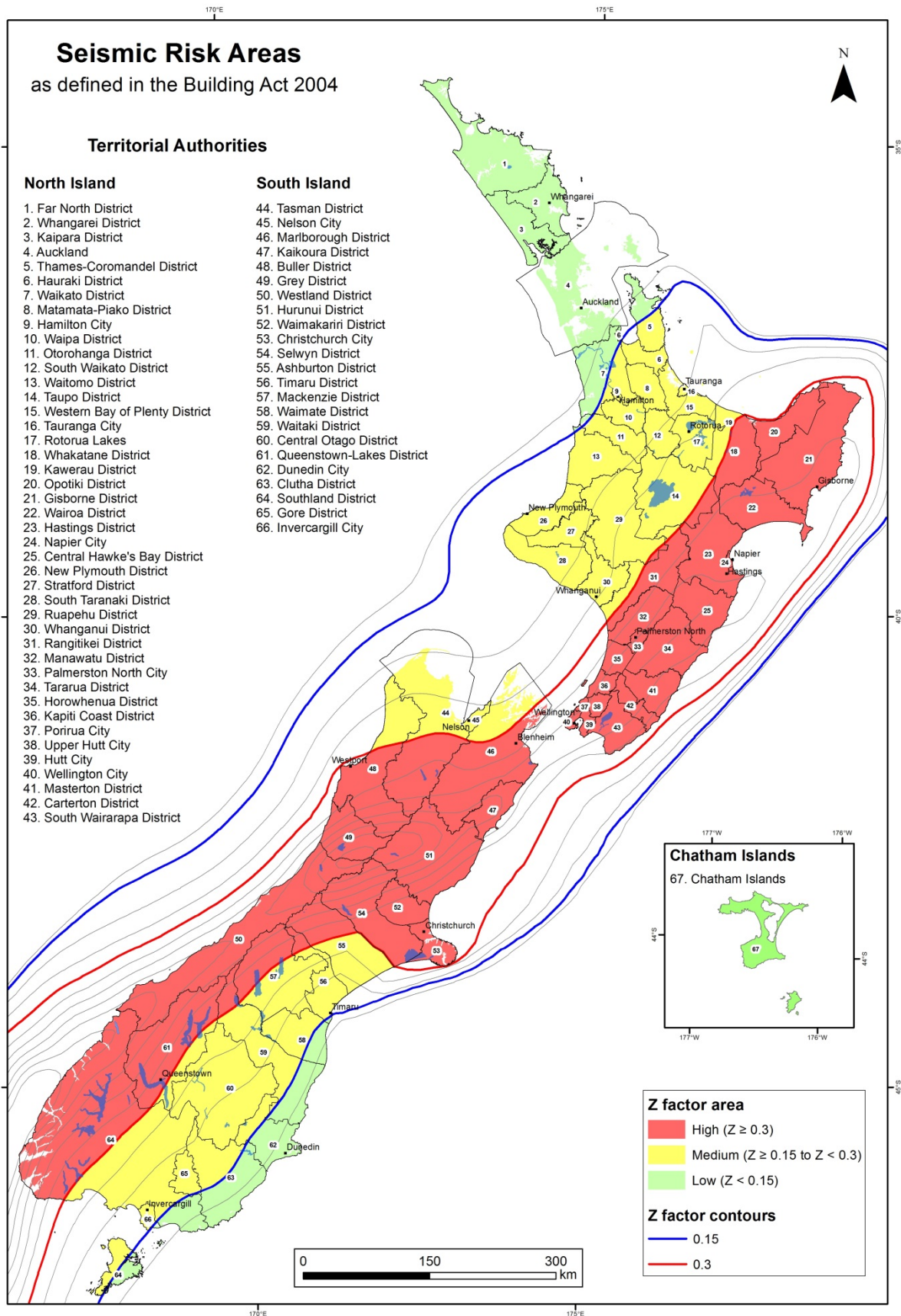
The Building Act 2004 requires territorial authorities to report annually to MBIE from 2018 for five years on their progress if their district includes an area of high seismic risk.

Thirty-eight territorial authorities have an area of high seismic risk in their district. Of the 38 territorial authorities:

- Twenty-five territorial authorities sit fully within the high seismic-risk area
- Thirteen include high and medium seismic risk areas
- Three districts include high, medium and low risk areas.

The map on the following page shows the seismic-risk areas as defined in the Building Act 2004 and the boundary lines for each of the territorial authorities.

By 1 January 2020, these 38 territorial authorities must identify the buildings that are most likely to result in death or injury because of their use or location (priority buildings). By 1 July 2022, they must also identify all other earthquake-prone buildings in high seismic-risk areas.



This figure is based on Figures 3.3 and 3.4 from NZS 1170.5:2004 and is used with permission from Standards New Zealand, on behalf of the New Zealand Standards Executive, under copyright licence LN001239.

Analysis and organisation of this report

The report is organised by high, medium and low seismic-risk area and presents:

- progress with community consultation
- the estimated number of potentially earthquake-prone buildings to be identified
- progress with requests for engineering assessments from building owners
- progress with updating the old s124 earthquake-prone building notices.

The information in this report includes data received from territorial authorities for the period 1 July 2017 to 30 June 2018. The territorial authorities provided data through an online reporting tool.

Further information about managing earthquake-prone buildings is available on the Building Performance website: <https://www.building.govt.nz/managing-buildings/managing-earthquake-prone-buildings/> and <https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/priority-buildings-earthquake-prone/>

2 Executive Summary

A nationally consistent system for managing earthquake-prone buildings

The Building (Earthquake-prone Buildings) Amendment Act 2016 introduced major changes to the way earthquake-prone buildings are identified and managed under the Building Act 2004.

The earthquake-prone building (EPB) management system commenced on 1 July 2017.

Identification is the first stage in managing earthquake-prone buildings. By 1 January 2020, 38 territorial authorities must identify those buildings that are most likely to result in death or injury (priority buildings), and by 1 July 2022, they must identify all other earthquake-prone buildings in the high seismic-risk area of their district. These authorities must report on progress annually for five years from 2018.

Territorial authorities in high seismic risk areas are on track but still have work to do

The progress reported by the territorial authorities reflects their local geography, building types and town sizes; and how actively each authority managed earthquake-prone buildings prior to the new system, and in the first year of the national system.

Seven of the 38 territorial authorities in the high seismic risk area estimated that they had no, or no further, potentially earthquake-prone buildings to identify.

The remaining 31 territorial authorities estimated that they needed to identify about 4,576 potentially earthquake-prone buildings.

Between 1 July 2017 and 30 June 2018, fifteen territorial authorities requested a total of 483 engineering assessments from building owners.

Community consultation is in its early stages

Some buildings present a higher life-safety risk because of their location. Councils must consult with their communities to identify well-used roads and footpaths, and strategic transport routes that are critical to recovery in an emergency. Buildings along these routes can be prioritised for fixing in a shorter time period.

Consultation in high seismic-risk areas is expected to be completed by 1 July 2019. At 30 June 2018, six territorial authorities reported that they had completed consultation with their communities to agree well-used routes and two reported having consulted on strategic routes. Some territorial authorities have deemed it unnecessary to consult to identify well-used and/or strategic transport routes.

Support to territorial authorities is available

To ensure that territorial authorities meet the requirements of the earthquake-prone building management system, the Ministry of Business, Innovation and Employment (MBIE) continues to provide information, training and targeted help.

3 Progress in areas of high seismic-risk

Territorial authorities with high seismic-risk areas are required to report annually for five years (2018-2022). These territorial authorities are required to identify any buildings in the high seismic-risk area that are priority potentially earthquake-prone by 1 January 2020, and all other potentially earthquake-prone buildings in the high risk area by 1 July 2022.

3.1 Territorial authorities with areas of high seismic-risk

Thirty-eight territorial authorities have areas of high seismic risk within their boundaries. All territorial authorities have reported to the Ministry of Business, Innovation and Employment. Territorial authorities were invited to review or complete their data in their reports where inconsistencies were identified during analysis.

The territorial authorities whose districts include high seismic-risk areas are:

Ashburton District	Mackenzie District	Southland District
Buller District	Manawatū District	Tararua District
Carterton District	Marlborough District	Tasman District
Central Hawke's Bay District	Masterton District	Taupō District
Christchurch City	Napier City	Timaru District.
Gisborne District	Ōpōtiki District	Upper Hutt City
Grey District	Palmerston North City	Waimakariri District
Hastings District	Porirua City	Wairoa District
Horowhenua District	Queenstown-Lakes District	Waitaki District
Hurunui District	Rangitīkei District	Wellington City
Hutt City	Ruapehu District	Westland District
Kaikōura District	Selwyn District	Whakatāne District
Kāpiti Coast District	South Wairarapa District	

3.2 Progress with community consultation (high seismic-risk)

Territorial authorities must use the special consultative procedure (section 83 of the Local Government Act 2002) to identify routes in an area of medium or high seismic risk, onto which parts of an unreinforced masonry building could fall in an earthquake; and that are busy enough to warrant prioritising the identification and remediation of these parts of unreinforced masonry buildings.

A territorial authority is not required to consult to identify priority buildings if there is no reasonable prospect of any thoroughfare in its district having sufficient vehicle or pedestrian traffic on roads, footpaths or other thoroughfares onto which parts of an unreinforced masonry building can fall in an earthquake.

A territorial authority has the discretion to initiate the special consultative procedure, as described in the Local Government Act (2002), to identify buildings that could impede a

*strategic transport route*¹. A territorial authority may not use any other process to prioritise buildings on a strategic transport route.

For the 2018 reporting year, six territorial authorities reported that they had completed special consultation on well-used roads or footpaths. The majority of territorial authorities (25) plan to run a special consultation to identify well-used roads or footpaths; three planned not to consult.

Two territorial authorities reported that they had completed special consultation on strategic transport routes. Seventeen plan a special consultation to identify strategic transport routes. Fifteen territorial authorities reported that they do not intend to consult on strategic routes.

Decisions made by territorial authorities not to consult on either busy or strategic transport routes were reasonable based on the local context. The reasons for not consulting were that the area was alpine or rural, the towns did not have unreinforced masonry buildings, or the street layout had alternate routes that emergency vehicles could use after an earthquake.

The table below shows the number of territorial authorities at the various stages or options for consulting to identify well-used roads and footpaths, and strategic transport routes.

Consultation plans as reported by territorial authority in 2018 high seismic-risk areas		
Status of consultation	Well-used roads and footpaths	Strategic transport routes
Consultation is complete	6	2
Consultation is planned	25	17
Consultation is not going to be done	3	15
Consultation plan yet to be determined	4	4
Total	38	38

3.3 Potentially earthquake-prone buildings at 30 June 2018 (high seismic-risk)

A building, or part of a building, is earthquake prone if it will have its ultimate capacity exceeded (might collapse) 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.

Priority earthquake-prone buildings include potentially earthquake-prone buildings (or parts of buildings) that may fall on well-used roads or footpaths, or that may fall on transport routes needed by emergency services immediately after an earthquake, or are hospital, emergency or education buildings.

Non-priority earthquake-prone buildings, like priority earthquake-prone buildings, are less than 34 per cent of the new building standard, but are less likely to cause a life-safety risk because they are located on less-used roads or footpaths, or on non-strategic transport routes, and are not hospital, emergency or education buildings.

At 30 June 2018, seven territorial authorities reported they did not have any potentially earthquake-prone buildings still to identify. Twelve territorial authorities estimated that there

¹ <http://www.legislation.govt.nz/act/public/2002/0084/170.0/DLM172328.html>

were no potentially earthquake-prone buildings that were priority, and eight estimated that they had no potentially earthquake-prone buildings that were non-priority in high seismic-risk areas.

The sum of the estimates of potentially earthquake-prone buildings to be identified was 4,576. Of these, 884 were estimated to be priority potentially buildings that must be identified by 1 January 2020, and 3692 were non-priority, which must be identified by 1 July 2022. Territorial authorities may update their estimates after community consultation and further assessment.

3.4 Progress with engineering assessments (high seismic-risk)

When a territorial authority identifies a building as potentially earthquake prone, the building owner is required to provide an engineering assessment for their building within 12 months from the date they are notified. The building owner can apply for one extension of up to 12 months in certain circumstances.

Building owners need to make sure they commission an engineer who knows the requirements of the EPB methodology and has the qualification requirements set out in the EPB methodology. Engineers need to make sure they undertake assessments in accordance with the EPB methodology.

Fifteen territorial authorities reported that they had identified a total of 483 potentially earthquake-prone buildings between 1 July 2017 and 30 June 2018. Requests for engineering assessments had been sent to the building owners (190 priority; 293 other).

One district had received and accepted two claims of factual error. The error was that the construction type had been incorrectly identified. Three owners of potentially earthquake-prone buildings had requested an extension of time to provide an engineering assessment. The territorial authority granted an extension in each case.

The table below shows the number of priority and non-priority (other) buildings of each profile category in the high seismic-risk area that territorial authorities had identified as potentially earthquake-prone and had sent a request to the building owner for an engineering assessment during the period 1 July 2017 to 30 June 2018.

Requests for engineering assessments in 2018 for high seismic-risk areas		
Building profile category	Priority	Other
Unreinforced masonry buildings	110	40
Pre-1976 buildings with 3 or more stories, or 12 or more meters in height above the lowest ground level (and not URM)	6	74
Pre-1935 buildings that are one or two stories (and not URM)	68	60
Other basis for identifying as outlined in the EPB methodology	6	119
Total	190	293

3.5 Progress with updating old notices (high seismic-risk)

Territorial authorities that previously had an active (rather than passive) approach may have given notices under section 124 of the Building Act before the commencement date of the 2016 amendment. From 1 July 2017, these territorial authorities have been required to replace any old notices with new notices, or if the building is now excluded, to revoke the old notice. As soon as practicable the territorial authority must record the details of the building or the part of the building in the register of earthquake-prone buildings (EPB Register)² and update other information in the register as necessary.

Nine territorial authorities reported that they had issued earthquake-prone notices prior to the current national system for managing EPBs. There were 1,492 notices current on 1 July 2017. Three territorial authorities have revoked 39 notices, and four territorial authorities have replaced 772 old notices with new notices (183 priority; 589 other), leaving 681 notices that were current at 1 July 2017 to be transitioned.

The national register of earthquake-prone buildings had been updated by some of the territorial authorities that reported they had revoked and/or replaced notices.

4 Progress in areas of medium seismic-risk

Territorial authorities are required to identify all priority potentially earthquake-prone buildings in medium seismic-risk areas by 1 July 2022. All other potentially earthquake-prone buildings in medium seismic-risk areas must be identified by 1 July 2027.

Territorial authorities whose districts include high and medium-seismic-risk areas are required to report on progress in identifying potentially earthquake-prone buildings annually for five years (2018-2022) and in 2023, 2025 and 2027.

4.1 Territorial authorities with areas of medium seismic-risk

Thirteen territorial authorities have high and medium seismic-risk areas within their boundaries. These territorial authorities are Ashburton, Buller, Mackenzie, Marlborough, Queenstown-Lakes, Rangitīkei, Ruapehu, Southland, Tasman, Taupō, Timaru, Waitaki, and Whakatāne district councils.

4.2 Progress with community consultation (medium seismic-risk)

One territorial authority has completed community consultation to identify both well-used roads or footpaths, and strategic transport routes in its area of medium seismic risk. This consultation resulted in the decision that there were no buildings within scope for identification as priority. One other territorial authority also reported consulting to identify where buildings may block emergency service routes.

One territorial authority reported that it did not intend to consult on routes that were essential to emergency services. The decision not to consult is appropriate given the local context.

² <https://epbr.building.govt.nz/>

The table below shows the number of territorial authorities at each stage or option for consulting to identify well-used roads and footpaths, and strategic transport routes.

Consultation plans as reported by territorial authority in 2018 medium seismic-risk areas		
Status of consultation	Well-used roads and footpaths	Strategic transport routes
Consultation is complete	1	2
Consultation is planned	9	7
Consultation is not going to be done	0	1
Consultation plan yet to be determined	3	3
Total	13	13

4.3 Progress with identifying buildings (medium seismic-risk)

Territorial authorities estimated that there were 611 potentially earthquake-prone buildings in the medium seismic-risk areas. Of these, 318 were potentially priority, and 293 were potentially non-priority (other) buildings.

The territorial authorities reported that no buildings in the medium seismic-risk areas had current earthquake-prone buildings notices at 1 July 2017.

5 Progress in areas of low seismic-risk

Territorial authorities whose districts include high, medium and low seismic-risk areas are required to report on progress in identifying potentially earthquake-prone buildings annually for five years (2018-2022), and in 2023, 2025, 2026, 2027, 2029 and 2032.

Territorial authorities are required to identify all potentially earthquake-prone buildings in low seismic-risk areas by 1 July 2032.

5.1 Territorial authorities with areas of low seismic-risk

Three territorial authorities have high, medium and low seismic-risk areas within their boundaries. They are Timaru, Waimate and Southland, which includes Stewart Island.

The priority building provisions do not apply in low seismic-risk areas and so no community consultation is required in areas with low seismic risk.

5.2 Progress with identifying buildings (low seismic-risk)

Territorial authorities estimated that there were about 266 potentially earthquake-prone buildings in the low seismic-risk areas of their districts.

The territorial authorities reported that no buildings in the low seismic-risk areas had current earthquake-prone building notices at 1 July 2017.

6 Conclusion and next steps

Analysis of the 2018 reports from the 38 territorial authorities that have areas of high seismic-risk within their districts found that:

1. Progress reflects local geography, building types and town sizes; and how actively each authority managed earthquake-prone buildings prior to the current system as well as in the past year.
2. Some territorial authorities will complete identification of potentially earthquake-prone buildings well within the applicable timeframes.
3. All territorial authorities can potentially complete identification within the timeframes.

Based on the regulatory requirements and the reports provided by the territorial authorities, the following activity is expected:

1. By 30 June 2019, territorial authorities will finalise community consultation. This will allow territorial authorities to improve their estimate of the number of priority and other potentially earthquake-prone buildings in high seismic-risk areas.
2. Before the deadline of 1 January 2020, territorial authorities must identify priority potentially earthquake-prone buildings in high seismic-risk areas. Based on 2018 estimates, this may generate about 900 requests for engineering assessments.
3. By 1 July 2022, territorial authorities must identify non-priority (other) potentially earthquake-prone buildings in high seismic-risk areas. Based on 2018 estimates, 3700 non-priority earthquake-prone buildings may need engineering assessment.
4. During the 2018-2019 year, some territorial authorities will use engineering assessments requested in the 2017-2018 year to make decisions as to whether or not a building is earthquake-prone.
5. Territorial authorities that were actively managing earthquake-prone buildings prior to 1 July 2017 must revoke or replace remaining old notices with the new EPB notices.
6. Territorial authorities that issued new EPB notices or replaced old notices with new EPB notices must update the EPB register.

The Ministry of Business, Innovation and Employment used the 2018 monitoring reports and additional information to identify further support it can provide to territorial authorities to ensure that they meet the legislated timeframes for identification of earthquake-prone buildings and to improve life safety for New Zealanders and our visitors.