

Office of the Minister for Building and Housing

Cabinet Economic Growth and Infrastructure Committee

Additional decisions to improve the system for managing earthquake-prone buildings

Proposal

- 1 This paper seeks additional decisions on proposals to improve the system for managing earthquake-prone buildings.

Executive summary

- 2 The Building (Earthquake-prone Buildings) Amendment Bill (the Bill) amends the Building Act 2004 (the Act) to give effect to reforms agreed to by Cabinet and announced by Government in August 2013 to improve the system for managing earthquake-prone buildings [CAB Min (13) 26/7 and CAB Min (13) 41/1 refer].
- 3 The Bill deals with highly complex issues and is broadly in line with the recommendations of the Canterbury Earthquakes Royal Commission (the Royal Commission).
- 4 The Bill introduces a revised system for managing earthquake-prone buildings that aims to strike an appropriate balance between protecting people from harm in an earthquake, the costs of strengthening or removing buildings and impacts on heritage. The revised system provides for a significantly greater role for central government, particularly in relation to leadership and direction.
- 5 The Bill is currently being considered by the Local Government and Environment Committee. The Committee received 121 submissions on the Bill (several supplementary submissions were also received). The Ministry of Business, Innovation and Employment is due to provide its Departmental Report to the Committee by the end of April 2015. The Committee is due to report back to Parliament on the Bill by 30 July 2015.
- 6 Many submitters on the Bill supported the intent of the proposed legislation. However, several submitters including Local Government New Zealand (LGNZ) and some territorial authorities (TAs) raised concerns about the potentially significant impacts of the Bill, particularly for rural and provincial New Zealand, and regions of low seismic risk. Appendix 1 discusses these matters in more detail.
- 7 I am seeking approval for refinements to the Bill that take a more focused approach, by reducing the scope of buildings covered by the Bill and prioritising those areas and buildings that pose the greatest risk. This will reduce direct costs of strengthening by over \$500 million in Net Present Value terms (with a similar level of benefits compared to the current Bill) based on economic modelling. Based on population adjusted historical earthquake fatalities across New Zealand, it is estimated that the proposals will result in 335 fewer fatalities and 368 fewer serious injuries over the next 100 years.

- 8 The most important change proposed is lengthening the timeframes for earthquake-prone building identification and remediation to better reflect different levels of seismic risk around New Zealand. It is proposed to categorise New Zealand into three areas of high, medium and low seismic risk and to adjust the assessment and remediation timeframes accordingly.
- 9 This approach has been influenced by the estimated return periods of significant seismic events. The Modified Mercalli Intensity Scale classifies an MM8 as the most frequent of the damaging earthquakes and is defined as "Heavily damaging; Alarm may approach panic. A few buildings are damaged and some weak buildings are destroyed."¹ GNS Science estimates that an MM8 earthquake has a return period of around 120 years in Wellington, 720 years in Christchurch and 7400 years in Auckland.
- 10 The changes in this paper will involve rescinding some existing decisions made by Cabinet, which are incorporated in the Bill as currently drafted. Some consequential matters consistent with the policy framework agreed in August 2013 that were approved during the drafting of the Bill will also be affected.
- 11 The main policy proposals will:
- reduce the scope of buildings covered by the Bill (by excluding certain buildings where the application of the earthquake-prone building provisions would likely either be impractical and/or excessive, e.g. in relation to farm buildings);
 - only require TAs to undertake initial investigations to identify *potentially* earthquake-prone buildings, using a methodology set and published by the Ministry of Business, Innovation and Employment, within five, 10 or 15 years from commencement (timeframe dependent on the seismic risk of the area – the timeframe is half of this for a 'priority building');
 - require building owners to provide an engineering assessment of buildings identified by TAs as potentially earthquake-prone within 12 months, using tools and methods in a methodology set and published by the Ministry of Business, Innovation and Employment;
(the processes above are in comparison to the Bill which requires TAs to assess all existing buildings with five years from commencement, using a methodology specified and published by the Ministry of Business, Innovation and Employment)
 - only require those buildings *determined* to be earthquake-prone (or designated as potentially earthquake-prone (not assessed)) by the TA following consideration of the engineering assessment to have their details listed on the register;
 - better align timeframes for remediation of earthquake-prone buildings with different levels of seismic risk around New Zealand: 15 years for areas defined as high seismic risk, 25 years for areas defined as medium seismic risk, and 35 years for areas defined as low seismic risk – timeframes for remediation will run from when buildings are *determined* as earthquake-prone or designated as potentially earthquake-prone (not assessed);

¹ Modified Mercalli Intensity (MMI) is a scale of earthquake shaking that is based on human experience and observations of building damage at the higher levels of MMI. It does not have a one-to-one correlation with instrumentally-based measurements of earthquake shaking and hazard (e.g. z-factor). It differs from the Richter scale that is a measurement of the energy released rather than the level of shaking, i.e. you can have a large deep earthquake on the Richter scale that causes little damage.

(for example, this will mean that the timeframe in Christchurch, Gisborne, Napier, and Wellington will be 15 years, the timeframe in Hamilton, Invercargill, Tauranga and Whanganui will be 25 years, and the timeframe in Auckland and Dunedin will be 35 years (a more detailed list of locations and timeframes is outlined in Appendix 2) – this compares to the timeframe in the Bill of 15 years for most buildings)

- set the timeframe for remediating a priority building at half the timeframe for other earthquake-prone buildings in that seismic risk region (after a building is determined as being earthquake-prone or designated as potentially earthquake-prone (not assessed));
- define priority building within primary legislation in areas of high and medium seismic risk as follows:
 - 'hospital buildings' – those components of a hospital necessary for it to be able to maintain services in the event of a significant earthquake, but excluding administration buildings and aged residential care facilities;
 - 'school buildings' – all buildings regularly occupied by 20 persons or more in an early childhood education centre, primary, secondary, or tertiary education facility, including registered private training establishments;
 - 'emergency service facilities' – emergency service facilities such as fire stations, police stations and emergency vehicle garages; and designated emergency shelters, designated emergency centres and ancillary facilities;
 - 'corridor buildings' – those buildings identified by the TA, after consulting their communities (using the special consultative procedure in section 83 of the Local Government Act 2002), that could, if they were to collapse in an earthquake, impede transport routes of strategic importance in an emergency. The use of this provision would be optional for TAs;
- add a further trigger for remediating earthquake-prone buildings, i.e. where 'substantial alterations' are carried out, building work would also need to be undertaken so that the building (or the affected part) is no longer earthquake-prone.

12 Combined with a robust methodology for initial investigations of *potentially* earthquake-prone buildings and engineering assessments, I consider that a number of the concerns raised by submitters about the Bill can be adequately addressed through the refinements outlined in this paper, while at the same time sufficiently balancing the need to protect the public in an earthquake. The Ministry of Business, Innovation and Employment has begun initial work on the methodology, including working with the New Zealand Society for Earthquake Engineering (NZSEE), GNS Science, other engineers and experts, and local government.

13 There may be a perception that the proposals in this paper step back from the recommendations of the Royal Commission in some areas, for example reducing the scope of buildings covered and the proposal of extended remediation timeframes for areas of lower seismic risk. However, I consider the proposals in this paper will result in a system for managing earthquake-prone buildings that better balances cost, risk and heritage issues.

14 I have also tested the main proposals in this paper with LGNZ and selected mayors.

- 15 I propose that decisions on these matters be incorporated into the Ministry of Business, Innovation and Employment's Departmental Report to the Local Government and Environment Committee.
- 16 The Ministry of Business, Innovation and Employment will also be recommending a range of other minor amendments to improve the workability of the Bill in response to submissions. These additional changes are not discussed in this paper, as they fall within the scope of existing Cabinet policy approvals.
- 17 Appendix 3 contains a process map which illustrates the main features of the new system for managing earthquake-prone buildings in the Bill, incorporating the amendments proposed in this paper. Appendix 4 shows estimates of numbers of buildings strengthened each year under the proposals in this paper.

Background

- 18 The Bill was introduced into Parliament on 9 December 2013. It is currently being considered by the Local Government and Environment Committee. The Committee received 121 submissions (several supplementary submissions were also received). Hearings have been held in Auckland, Dunedin and Christchurch as well as in Wellington.
- 19 The Committee also received advice from the Regulations Review Committee.
- 20 The Ministry of Business, Innovation and Employment is due to provide its Departmental Report to the Local Government and Environment Committee by the end of April 2015. Officials have the permission of the Committee to consult with local government, engineers and GNS Science to help inform the development of the Departmental Report.
- 21 The Committee is due to report back to Parliament on the Bill by 30 July 2015.

Main features of the Bill as currently drafted

- 22 The Bill repeals the existing provisions in subpart 6 of Part 2 of the Act in relation to earthquake-prone buildings and creates a new subpart 6A in Part 2 of the Act to solely regulate earthquake-prone buildings. Currently, the provisions governing the management of earthquake-prone buildings are located alongside the provisions regulating dangerous and insanitary buildings.
- 23 The Act defines an 'earthquake-prone building' as one that would have its ultimate capacity exceeded in a 'moderate earthquake' and that would be likely to collapse causing injury or death to persons in the building or to persons on any other property or damage to any other property. Regulations made under the Act define a moderate earthquake as one that would generate shaking at the site of the building that is of the same duration, but a third as strong, as the earthquake shaking used to design a new building at the same site.
- 24 The requirements of the Building Code are different in areas of different seismicity in New Zealand. Therefore because the definition of an earthquake-prone building is connected to the site of the building, it already takes into account the different levels of seismicity around New Zealand.
- 25 The Bill replicates the definition of an earthquake-prone building in the Act (and regulations), but with the amendments outlined in clauses 23 and 43 of the Bill. These amendments clarify the definition, including that parts of buildings can be earthquake-prone as well as whole buildings. These amendments also link the definition of moderate earthquake to the Building Code as at the date of commencement to provide greater certainty to building owners and increase the

transparency around the process for incorporating new knowledge into the moderate earthquake definition.

- 26 The Bill provides for all existing buildings within the scope of the earthquake-prone building provisions to be assessed by TAs within five years of the commencement of the legislation using a methodology set and published by the Ministry of Business, Innovation and Employment. Most residential buildings are excluded from the system.
- 27 Remediation of earthquake-prone buildings (so they are no longer earthquake-prone) is required within 15 years from assessment for most buildings (i.e. in total, within 20 years from commencement).
- 28 The Bill provides for exemptions from the requirement to remediate in certain circumstances with criteria to be defined in regulations (intended to apply where the consequence of failure is low), and for an extension of time of up to an extra 10 years to remediate for Category 1 listed historic places that are earthquake-prone (owners must manage risk if an extension is granted)².
- 29 The Bill provides that TAs can set a shorter timeframe than 15 years for the remediation of buildings that come within the definition of priority building (to be defined in regulations), after consulting their communities.
- 30 The Bill enables TAs that are building consent authorities to issue building consents, in certain circumstances, despite section 112(1) of the Act, for earthquake strengthening work on buildings that are earthquake-prone without requiring upgrades to the means of escape from fire and access and facilities for persons with disabilities. This provision requires a case-by-case decision to be made by the TA.³
- 31 The Bill also provides for a seismic capacity register held by the Ministry of Business, Innovation and Employment that will publicly disclose whether or not a building is earthquake-prone. The current intention in the Bill is for all buildings to be on the register (other than those buildings excluded under the residential building exclusion).

Reducing the scope of buildings covered by the Bill

- 32 Under the Act (and the Bill), most residential buildings are excluded from the earthquake-prone building definition.
- 33 I propose that certain additional buildings be excluded from the definition of an earthquake-prone building, along the lines of the following: farm buildings, retaining walls, fences, monuments that cannot be entered (e.g. statues), wharves, bridges, tunnels, and storage tanks (e.g. water reservoirs).
- 34 Applying the earthquake-prone building provisions in the Bill to these buildings would likely either be impractical or excessive or both. In the case of the infrastructure buildings listed, applying the earthquake-prone building provisions may add little value beyond maintenance plans and requirements that exist under

² In the explanatory note to the Bill it was noted that it was intended that, before the Bill is enacted, amendments would be made to enable owners of buildings on the National Historic Landmarks List under the Heritage New Zealand Pouhere Taonga Bill (once enacted) to also apply for the extension of time of up to 10 years to complete seismic work. The Heritage New Zealand Pouhere Taonga Bill has now been enacted.

³ Under section 112 of the Act, a building consent authority must not grant a building consent for the alteration of an existing building unless it is satisfied that the altered building will comply as nearly as is reasonably practicable with the Building Code provisions for means of escape from fire, and access and facilities for people with disabilities.

other legislation (such as the Railways Act 2005, Land Transport Management Act 2003, and Civil Defence Emergency Management Act 2002).

- 35 The buildings referred to in paragraph 33 are covered by the current earthquake-prone building definition in section 122 of the Act, but in practice TAs do not focus on them for the reasons outlined. It is unlikely that many earthquake-prone notices have been issued for these buildings.
- 36 In the event that notices requiring remediation have been issued for these buildings under the current system for managing earthquake-prone buildings, to ensure owners of these buildings are not disadvantaged, I propose that these notices lapse upon the commencement of the Bill.
- 37 It is important to note that the dangerous building provisions of the Act will still apply to these structures where appropriate. These provisions apply where a building is likely to cause injury or death, or property damage, in the ordinary course of events (excluding earthquakes).
- 38 The list of excluded buildings discussed in paragraph 33 was developed in consultation with a local government reference group (including LGNZ and several TAs).

Initial investigations, engineering assessments, notification and disclosure of earthquake-prone buildings

39 On 5 August 2013, Cabinet agreed to amend the Act to require:

- TAs to undertake a seismic capacity assessment of all non-residential and multi-storey/multi-unit residential buildings (as currently defined under section 122 of the Act) in their districts within five years from commencement using a methodology specified and published by the Ministry of Business, Innovation and Employment;
- TAs to prioritise for assessment, according to a framework to be specified and published by the Ministry of Business, Innovation and Employment:
 - (i) buildings likely to have a significant impact on public safety (including buildings with high risk elements such as falling hazards); and
 - (ii) strategically important buildings;(with both (i) and (ii) defined in regulations made under the Act);
- TAs to provide the results of the assessments to the relevant building owner;
- owners who are notified that the outcome of the seismic capacity assessment is that their building is earthquake-prone to strengthen (or demolish) their building within the statutory timeframe;
- provide that an owner will be able to provide an engineering assessment of a type to be specified and published by the Ministry of Business, Innovation and Employment, should they disagree with the outcome of the seismic capacity assessment undertaken by the TA [CAB Min (13) 26/7 refers].

40 On 5 August 2013, Cabinet also agreed to amend the Act to require TAs to enter the results of each seismic capacity assessment into the national register (as well as updated information if this becomes available to the TA) [CAB Min (13) 26/7 refers].

41 I consider that the Bill can be improved in this area, and effort and scarce resource better focused.

42 I therefore propose that the Cabinet decisions discussed in paragraph 39 be rescinded and instead propose to include the following proposals in the Bill to amend the Act to:

- require TAs to undertake initial investigations to identify *potentially* earthquake-prone buildings within their districts using a methodology to be set and published by the Chief Executive of the Ministry of Business, Innovation and Employment (with no ability for the TA to recover the costs of doing so directly from the individual building owner), and notify owners by way of an outcome notice, within the following timeframes from commencement:
 - five years in areas of high seismic risk;
 - 10 years in areas of medium seismic risk; and
 - 15 years in areas of low seismic risk;
- define areas of high, medium and low seismic risk in connection with the Building Code (and associated approved solutions and verification methods) with reference to the seismic hazard factor (Z factor) as follows:
 - high seismic risk (Z factor ≥ 0.3);
 - medium seismic risk (Z factor of 0.15 up to < 0.3); and
 - low seismic risk (Z factor < 0.15);

(note that the Z factors outlined above for defining areas of seismic risk were developed in consultation with engineers);

- require TAs to prioritise for identification those buildings defined as a priority building (within half the timeframe for the identification of other buildings);
- require building owners to provide an engineering assessment to their TA within 12 months of being advised in an outcome notice that their building is *potentially* earthquake-prone (using tools and methods specified in the methodology set and published by the Chief Executive of the Ministry of Business, Innovation and Employment) unless they can provide conclusive evidence that their building is not earthquake-prone;

(the Bill currently includes transitional provisions to recognise engineering assessments that have already been undertaken, and notices already issued requiring the remediation of earthquake-prone buildings – amendments are proposed to these provisions as outlined later in this paper);

- provide TAs with a limited discretion to extend the 12 month period for assessment (for up to a further 12 months), for example where there is insufficient engineering resource available to undertake assessments;

provide that where an owner either advises the TA that they do not wish to undertake an engineering assessment, e.g. because they intend to demolish the building, or fails to provide an engineering assessment, the building is designated as 'potentially earthquake-prone (not assessed)' and is automatically categorised with earthquake-prone buildings that have the lowest level of performance (see further description below). The register and notices issued requiring work to be carried out will record the fact that the building is *potentially* earthquake-prone and that an engineering assessment has not been undertaken. Remediation to ensure that the building is no longer earthquake-prone will be required as if the building was an earthquake-prone building (this could simply involve providing an engineering assessment that determines the building is not earthquake-prone);

- provide TAs with discretionary powers to undertake an engineering assessment using tools and methods specified in the methodology set and published by the Chief Executive of the Ministry of Business, Innovation and Employment (with the ability for the TA to recover the costs of undertaking assessments from the building owner);
- provide that the methodology for initial investigations to identify potentially earthquake-prone buildings and engineering assessments is risk-based, and require the methodology to specify:
 - the tools and methods to be used to identify *potentially* earthquake-prone buildings;

(this is likely to consist of building categories which, by virtue of their location, age, and construction type, TAs can consider contain potentially earthquake-prone buildings (or parts of buildings) and therefore require assessment by owners. It is anticipated these categories may not include, for example, most timber framed buildings and post-1976 buildings, some low-rise non-unreinforced masonry buildings, and some 1936-1976 multi-storey buildings in low seismicity areas such as Auckland and Northland);
 - the tools and methods to be used to determine whether or not a building is earthquake-prone, and its rating.

43 I will be bringing the methodology to Cabinet because it will have an important effect on how wide the net is cast to determine those buildings that will need engineering assessments, including buildings in the public sector (such as health and education buildings). The intention is that the methodology will be heavily focused on unreinforced masonry buildings, with most timber framed buildings unlikely to require engineering assessments. My officials are committed to consulting with agencies, such as the Ministry of Education, to ensure the methodology is consistent with the best engineering advice available.

44 The tools and methods to identify *potentially* earthquake-prone buildings will act as a profiling mechanism and due to their nature may not ensure every earthquake-prone building is identified. To address this issue, I propose that the Bill also provides TAs with residual discretionary powers to apply their earthquake-prone building powers to those buildings that are not initially identified as potentially earthquake-prone, including after the relevant identification period if necessary. These powers include the ability to require (or undertake) engineering assessments and issue notices requiring work to be carried out to ensure a building is no longer earthquake-prone.

45 To help ensure that the process for identifying *potentially* earthquake-prone buildings is carried out in a measured fashion, I propose including in the Bill an amendment to the Act that requires TAs to monitor and report their progress on identification to the Chief Executive of the Ministry of Business, Innovation and Employment: annually in relation to areas of high seismic risk; every two years in relation to areas of medium seismic risk; and every three years in relation to areas of low seismic risk. This will also assist with the new function under the Bill for the Ministry of Business, Innovation and Employment to monitor the application and effectiveness of the system for managing earthquake-prone buildings. Where a TA's region includes more than one level of seismic risk, I propose that the shortest relevant reporting timeframe applies.

46 I also propose:

- amending the register provisions in the Bill so that the register only includes details of buildings that have been *determined* as being earthquake-prone (and *potentially* earthquake-prone buildings that have not been assessed) rather than including details of all buildings;
- clarifying that the register includes relevant details where only part of the building is earthquake-prone;
- changing the name of the seismic capacity register to the earthquake-prone buildings register;
- amending the register provisions in the Bill so that the register also includes details of an earthquake-prone building's percentage of new building standard (NBS) range or specific percentage NBS, or in the case of a potentially earthquake-prone building where no engineering assessment has been undertaken, a statement that it has not been assessed; and
- changing the names of the seismic capacity assessment and seismic work notice to engineering assessment and earthquake-prone building notice, and amending the relevant provisions in the Bill so that:
 - notices issued requiring work to be done for earthquake-prone buildings will specify whether the building is a priority building and will also specify its percentage NBS range or specific percentage NBS, or in the case of a potentially earthquake-prone building where no engineering assessment has been undertaken, a statement that it has not been assessed; and
 - the form of the earthquake-prone building notice be set in regulations (using a grading scheme to help differentiate earthquake-prone buildings and incentivise action);
- providing owners with the ability to provide an engineering assessment to the TA (in accordance with the tools and methods to be specified and published in the methodology) at any time after the issue of an earthquake-prone building notice, and in the event that the TA considers this changes the outcome of the earthquake-prone building notice to require the TA to reissue (or revoke) the notice and update the register.

47 It is anticipated that a grading scheme to come into effect during the implementation phase of the legislation could be based on the NZSEE guidelines and/or a traffic light system (<20%NBS in the NZSEE guidelines is an E rating (could be a red notice), 20-34%NBS in the NZSEE guidelines is a D rating (could be an orange notice)).

48 As noted earlier, the methodology will consist of profiling tools to identify potentially earthquake-prone buildings. Engineering assessments will be considered by TAs who will then determine whether *potentially* earthquake-prone buildings are earthquake-prone. The structure of the methodology and the tools and methods for determining whether a building is earthquake-prone are still to be set. However, based on the estimated costs of using existing tools and methods, the Ministry of Business, Innovation and Employment estimates the costs of engineering assessments will range from an estimated average cost of \$800 to \$1200 per building for an initial seismic assessment to an estimated average cost of \$10,000 to \$20,000 per building (or more for larger, complex structures) for a detailed seismic assessment. The costs of assessment will fall to building owners, who will be required to pay for engineering assessments.

- 49 The requirement to have the percentage NBS range or specific percentage NBS specified and the use of a grading scheme to help differentiate earthquake-prone buildings and incentivise action, will mean that all earthquake-prone buildings will need to have at least a detailed seismic assessment carried out (at an estimated cost of \$10,000 to \$20,000 per building (or more for larger, complex structures)). This is in order to provide sufficient evidence and confidence about the percentage NBS range or specific percentage NBS, to inform the decision about the grade of the earthquake-prone building, based on the grading scheme.
- 50 To reduce compliance costs for TAs, I also propose removing the requirement in the Bill (which restates the current requirements in section 125 of the Act) for TAs to provide copies of earthquake-prone building notices to the occupiers of the building. This is considered an unnecessary compliance cost as there will be a requirement for earthquake-prone building notices to be sent to owners, placed on the buildings, and information about earthquake-prone buildings will also be on a publicly accessible register available on the internet.

Timeframes for remediating buildings *determined as earthquake-prone*

51 On 5 August 2013, Cabinet agreed to amend the Act to require buildings to be strengthened so they are not earthquake-prone within 20 years of the legislation taking effect (i.e. assessment by TAs within five years, strengthening within 15 years of assessment).

52 Rather than specifying a single timeframe for remediating most earthquake-prone buildings, I propose to better align timeframes for remediating earthquake-prone buildings with seismic risk around New Zealand.

53 I therefore propose that the Cabinet decision discussed in paragraph 51 be rescinded and instead propose to include the following proposals in the Bill to amend the Act to:

- set the timeframes for remediation of earthquake-prone buildings at 15 years for areas of high seismic risk, 25 years for areas of medium seismic risk, and 35 years for areas of low seismic risk – timeframes for remediation will run from when buildings are determined as earthquake-prone (or potentially earthquake-prone and not assessed); and
- define areas of high, medium and low seismic risk in connection with the Building Code (and associated approved solutions and verification methods) with reference to the seismic hazard factor (Z factor) as follows:
 - high seismicity risk (Z factor ≥ 0.3);
 - medium seismic risk (Z factor of 0.15 up to < 0.3); and
 - low seismic risk (Z factor < 0.15).

54 These proposals will mean that the timeframe for remediating buildings determined to be earthquake-prone will be (Z factors are in brackets):

- 15 years in Christchurch (0.3), Gisborne (0.36), Napier (0.38), Wellington (0.4);
- 25 years in Hamilton (0.16), Invercargill (0.17), New Plymouth (0.18), Tauranga (0.2), Rotorua (0.24), Whanganui (0.25), Nelson (0.27); and
- 35 years in Auckland (0.13), Dunedin (0.13).

- 55 Note that the existing provisions in the Bill regarding exemptions from the requirement to remediate in certain circumstances, and extensions of time of up to an extra 10 years to remediate for Category 1 listed historic places that are earthquake-prone, would continue to apply (owners must manage risk if an extension is granted).
- 56 The table below sets out the indicative quantitative costs and benefits for alternative timeframe options (note these figures do not include the assessment costs discussed earlier).

Table 1: Indicative direct costs of strengthening (to 34% NBS) compared to the direct benefits of reduced fatalities and injuries (and estimates of reduced property damage), under alternative timeframe options (not including a priority buildings list)⁴

	Costs NPV \$ million	Benefits NPV \$ million	Net NPV \$ million
Current system (timeframes vary across New Zealand – estimated average of 28 years)	958	26	-932
One national timeframe (20 years) – the timeframe broadly reflected in the Bill	1,359	29	-1,330
Timeframes of 15, 25, and 35 years* for Z factors: < 0.15 (areas of low seismic risk) 0.15 to < 0.3 (areas of medium seismic risk) ≥0.30 (areas of high seismic risk)	668	26	-642

* These timeframes apply once a building has been *determined* as being earthquake-prone, or designated as *potentially* earthquake-prone (not assessed). Timeframes for identification and assessment outlined earlier in this paper occur first and have been taken into account in the calculation of these figures.

Priority buildings

- 57 On 5 August 2013, Cabinet agreed to amend the Act to:
- provide that TAs can require (i) buildings likely to have a significant impact on public safety (including buildings with high risk elements such as falling hazards) and (ii) strategically important buildings, to be strengthened (or demolished) more quickly than other earthquake-prone buildings (with both (i) and (ii) defined in regulations made under the Act); and
 - require TAs to set a framework for dealing with these buildings after consulting with their communities (using the special consultative procedure in section 83 of the Local Government Act 2002), for transparency.
- 58 Several submitters requested greater clarity about the definition of priority buildings, including the Legislation Advisory Committee. The Regulations Review Committee recommended amending the Bill to either include a definition of priority building on the face of the Bill, rather than leaving the definition to regulations, or to provide for the purpose of defining priority building and require regulations made under new section 401C(a) to be made in accordance with that purpose.
- 59 I consider the following to be important in considering how best to deal with this issue.

⁴ Note that the discount rate used in the calculation of these figures is 6.5%. An attrition rate of 10% (demolition) is assumed in the calculation of these figures.

- 60 Firstly, the Education (Early Childhood Services) Regulations 2008 require early childhood education centres to have (at least) 2.5sqm per child of indoor activity space, and the Ministry of Education provides state schools with a property entitlement of 3sqm per child. In comparison, the Government's office space density goal for public servants is 12-16sqm per full-time equivalent employee.
- 61 In the CTV building the following casualties were associated with the businesses tenanting each floor: 16 – Canterbury Television (levels one and two); 79 – Kings Education Language Centre (level four); 19 – 'The Clinic' (a medical centre) (level five); one – Relationships Aotearoa (level six).
- 62 Recently, in assessing public protection of life, a more sophisticated approach has been taken. Rather than just using a dollar value figure per life, the new approach considers a dollar value figure per healthy years lived. This suggests a more cautious approach should be taken to buildings occupied by children and young persons.
- 63 Schools are often used as civil defence centres across New Zealand. Comprehensive information about the location of these centres across all districts is not readily available. Across nine districts and regions that have been examined by my officials, 207 out of 377 civil defence centres are identified as being located in schools. In places such as Hamilton, all of the civil defence centres are identified as being located in schools.
- 64 Finally, California has specific requirements for existing hospitals to be seismically upgraded and has requirements for public school buildings constructed prior to 1933 to be retrofitted or demolished. The use of unreinforced masonry buildings as school buildings is also prohibited. Detailed structural assessments have been recommended for some buildings constructed or retrofitted between 1933 and 1978. Some jurisdictions have additional requirements, for example in San Francisco seismic assessments of private schools are required to be carried out within three years from September 2014.
- 65 To allow for a smoother implementation of the Bill (and to respond to submissions on the Bill that requested greater clarity on this matter), I propose that the decisions referred to in paragraph 57 be rescinded and instead propose to include the following proposals in the Bill to amend the Act to:
- define priority building within primary legislation in areas of high and medium seismic risk as follows:
 - 'hospital buildings' – those components of a hospital necessary for it to be able to maintain services in the event of a significant earthquake, but excluding administration buildings and aged residential care facilities;
 - 'school buildings' – all buildings regularly occupied by 20 persons or more in an early childhood education centre, primary, secondary, or tertiary education facility, including registered private training establishments;
 - 'emergency service facilities' – emergency service facilities such as fire stations, police stations and emergency vehicle garages; and designated emergency shelters, designated emergency centres and ancillary facilities;
 - 'corridor buildings' – those buildings identified by the TA, after consulting their communities (using the special consultative procedure in section 83 of the Local Government Act 2002) that could, if they were to collapse in an earthquake, impede transport routes of strategic importance in an emergency. The use of this provision would be optional for TAs;

- set the timeframe for remediating a priority building at half the timeframe for other earthquake-prone buildings (after a building is *determined* as being earthquake-prone or designated as potentially earthquake-prone (not assessed)).
- 66 Clarifying that 'emergency service facilities' are priority buildings is consistent with previous Cabinet decisions on this matter. This is not a new concept and was signalled in the Ministry of Business, Innovation and Employment's consultation document released in December 2012.
- 67 With respect to 'corridor buildings', the Bill currently makes reference to buildings that could, if they were to collapse in an earthquake, impede transport routes of strategic importance in an emergency in the regulation-making power (clause 37, new section 401C(a)) as an example of priority buildings. The proposals in this paper will make this explicit in primary legislation, while also providing some flexibility to link in with local civil defence and emergency management planning functions.
- 68 It is important to note that these provisions only affect buildings that are earthquake-prone (or those buildings designated as potentially earthquake-prone (not assessed)), only apply in areas of high and medium seismic risk, and the effect of the provisions is only to accelerate the identification and remediation timeframes. The level of remediation required is the same as for other earthquake-prone buildings.
- 69 It is important to note that any economic analysis in respect of this issue is difficult for public policy purposes because of the impact of discounting on monetary estimates of the value of life.
- 70 In undiscounted terms, the indicative quantifiable costs of strengthening and the direct benefits of reduced fatalities and injuries (and estimates of reduced property damage) of the proposals in this paper, including the impacts of remediating the list of priority buildings described above, are estimated at \$3,598 million and \$393 million respectively over 100 years.
- 71 The table below shows these figures in NPV terms (note these figures do not include the assessment costs discussed earlier).

Table 2: Total costs and benefits, reflecting the impacts of remediating a priority buildings list, including indicative direct costs of strengthening (to 34% NBS) and the direct benefits of reduced fatalities and injuries (and estimates of reduced property damage)⁵

	Costs NPV \$ million	Benefits NPV \$ million	Net NPV \$ million
Timeframes of 15, 25 and 35 years, and priority buildings list in areas of medium and high seismic risk*	777	27	-750

* These timeframes apply once a building has been *determined* as being earthquake-prone, or designated as *potentially* earthquake-prone (not assessed). Timeframes for identification and assessment outlined earlier in this paper occur first and have been taken into account in the calculation of these figures (including assumptions around timeframes for identification and assessment of priority buildings).

⁵ Note that the discount rate used in the calculation of these figures is 6.5%. An attrition rate of 10% (demolition) is assumed in the calculation of these figures.

72 When looking at this issue based on population adjusted historical earthquake fatalities across New Zealand, over the next 100 years it is expected that the proposals in this paper (taken together) will result in 3.3 fewer fatalities and 3.7 fewer serious injuries on average per annum compared to a situation of no remediation (totals of 335 fewer fatalities and 368 fewer serious injuries).

Additional substantial alterations trigger for remediating earthquake-prone buildings

73 To help further ensure that earthquake-prone buildings are remediated in a timely manner nationally, I propose including a further trigger in the Bill to require upgrades to earthquake-prone buildings when substantial alterations are undertaken to existing buildings.

74 This additional trigger may help to ensure more progressive upgrades of earthquake-prone buildings.

75 I propose to include the following proposals in the Bill to amend the Act to:

- add a further trigger for remediating earthquake-prone buildings so that where substantial alterations are to be carried out a building consent will not be granted unless building work is undertaken so that the building (or the affected part) is no longer earthquake-prone,⁶ and
- specify criteria in regulations that TAs must apply when considering whether an alteration is a substantial alteration, e.g. in connection with the value of the building work in the building consent as a ratio of the value of the building or some other criteria as determined. Providing for criteria to be specified in regulations is necessary due to the anticipated technical complexity and the need for flexibility to mitigate any potential unintended effects.

Clarification of some miscellaneous matters

76 Some miscellaneous matters have been raised by submitters on the Bill that require further clarification in the Act.

Issue: definition of earthquake-prone building

77 The definition of earthquake-prone building in the Bill (and the Act), includes reference to injury or death to persons in the building or to persons on any other property. A submitter on the Bill suggested clarifying the application of the definition to persons in or around the building.

78 The Bill includes the same residential exclusion provided for in the Act, i.e. that the earthquake-prone building provisions do not apply to a building that is used wholly or mainly for residential purposes, unless the building: (a) comprises two or more storeys; and (b) contains three or more household units. Section 7 of the Act specifically defines 'household unit' as not including a hostel, boardinghouse, or other specialised accommodation. Dunedin City Council recommended clarifying the application of the definition of earthquake-prone building to boardinghouses and other similar types of buildings which might otherwise be excluded through the application of the definition of household unit.

⁶ As noted earlier, under section 112 of the Act a building consent authority must not grant a building consent for the alteration of an existing building unless it is satisfied that the altered building will comply as nearly as is reasonably practicable with the Building Code provisions for means of escape from fire, and access and facilities for people with disabilities.

79 The definition of an earthquake-prone building in the Bill (and the Act) also makes reference to the term 'ultimate capacity'. Several submitters requested further clarification of the term. The Institution of Professional Engineers New Zealand, the NZSEE, and the Structural Engineering Society New Zealand submitted that the term 'ultimate capacity' should be clearly defined in either the Bill or in regulations.

Issue: exemptions from the requirement to remediate earthquake-prone buildings

80 The Bill provides that owners of certain buildings that meet criteria to be specified in regulations may apply for an exemption from the requirement to carry out seismic work on their buildings. This provision is intended to apply where the consequence of failure of the affected building is low. These buildings will have notices placed on the building and details will be included on the earthquake-prone buildings register. The Bill provides that a TA may revoke the exemption if it is satisfied the building no longer meets the exemption criteria specified in regulations. One example of the type of building that could fall within this exemption is a rarely used rural church/community hall that is earthquake-prone with little passing traffic.

81 Some submissions (for example those from Wellington City Council and the Institution of Professional Engineers New Zealand) discussed criteria that could be applied in regulations. The Regulations Review Committee recommended amending the Bill:

(i) to provide for a purpose of granting TAs power to grant exemptions from the requirements to carry out seismic work; and

(ii) to specify the criteria a TA should apply when determining whether to grant an exemption from a requirement to carry out seismic work on the face of the Bill rather than leaving the definition to regulations.

Issue: cost recovery by TAs

82 Several submitters raised concerns about the ability for TAs to recover costs.

Clarifications proposed

83 To provide greater clarity on these matters, I propose to include in the Bill amendments to the Act to include:

- injury or death to persons around the building in the definition of earthquake-prone building to ensure that it covers people on the same property as the buildings as well as persons on other property;
- a further 'carve-out' from the general residential exclusion for hostels, boardinghouses or other specialised accommodation, to clarify that the earthquake-prone building provisions apply in relation to these buildings;
- a regulation making power to define the term ultimate capacity. Defining the term ultimate capacity in regulations is necessary to address anticipated technical complexities associated with this matter and to ensure any unintended consequences are mitigated;
- a statement in the regulation-making power in clause 37 new section 401C(b) of the criteria for granting an exemption from a requirement to remediate an earthquake-prone building that will include but is not limited to:
 - location (including streetscape and seismicity);
 - the age of the building;
 - construction type;
 - building use;

- building occupancy; and
- new provisions allowing TAs to recover the costs of undertaking assessments from building owners as a debt due to the TA. This relates to TAs discretionary power to undertake engineering assessments as outlined in paragraph 44.

Infringement offences

- 84 The Bill restates existing enforcement mechanisms and offence provisions in the Act in relation to earthquake-prone building remediation requirements, and clarifies who they apply to. The Bill also introduces a new offence into the Act in relation to building owners failing to display a seismic work notice or an exemption notice, with a maximum fine of \$20,000.
- 85 LGNZ (and several local government submitters) suggested the Bill should provide for an infringement regime in addition to the offence provisions set out in the Bill. These submitters contend that taking court action is costly and is therefore only used as a last resort.
- 86 The Building (Infringement Offences, Fees, and Forms) Regulations 2007 set out infringement offences under the Building Act 2004.
- 87 I propose to clarify that the infringement regime that currently applies in respect of earthquake-prone buildings in the Building (Infringement Offences, Fees, and Forms) Regulations 2007 continues to apply in the revised system for managing earthquake-prone buildings provided for in the Bill.
- 88 I also propose to include in the Building (Infringement Offences, Fees, and Forms) Regulations 2007 that failures related to displaying earthquake-prone building notices and exemption notices on buildings under clause 23 new section 133AY(2) and (3) are infringement offences, and that the infringement fine for these offences is set at \$1,000 (the same fine as displaying a false or misleading building warrant of fitness).
- 89 These changes will provide TAs with alternative mechanisms to enforce compliance before having to take action against non-compliant building owners in the Courts.
- 90 If agreed to, changes to regulations to give effect to the proposals in paragraphs 87 and 88 will be signalled in the Departmental Report and changes to the regulations made after the Bill is enacted, but before it comes into force.

Transitional provisions

- 91 On 5 August 2013, Cabinet agreed to amend the Act to:
- recognise building assessments already undertaken where they have been undertaken using a methodology consistent with, or recognised by, that methodology to be specified and published by the Ministry of Business, Innovation and Employment.
- 92 On 5 August 2013, Cabinet also agreed to amend the Act so that:
- notices issued under section 124 for earthquake-prone buildings remain in force where the time remaining on the notice is shorter than the timeframe in paragraph 51 above;

- notices issued under section 124 for earthquake-prone buildings be reissued by the TA where the time remaining on the notice is longer than the timeframe in paragraph 51 above [CAB Min (13) 26/7 refers].
- 93 In light of the proposals in this paper, including changes to timeframes for remediation of earthquake-prone buildings, some of these transitional provisions will need to be adjusted.
- 94 I therefore propose that the Cabinet decisions discussed in paragraph 92 be rescinded and instead propose to include the following proposals in the Bill to amend the Act to provide that:
- decisions made by TAs that led to section 124 notices being issued for earthquake-prone buildings remain valid;
 - notices issued under section 124 for earthquake-prone buildings be reissued by the TA under the Bill to ensure there are consistent notifications on earthquake-prone buildings;
 - where the remediation timeframe remaining on the existing section 124 notices is less than the relevant timeframe of 15, 25, or 35 years (or the relevant timeframe for priority buildings) then the original remediation timeframe will apply;
 - where the remediation timeframe remaining on the existing section 124 notices is longer than the relevant timeframe of 15, 25, or 35 years (or the relevant timeframe for priority buildings) then the new relevant timeframes referred to above will apply.
- 95 I also propose to include in the Bill amendments to the Act to provide that building owners may apply to their TA to have the relevant timeframe of 15, 25, or 35 years (or the relevant timeframe for priority buildings) for buildings in that specific seismic area to apply from the date of issue of their original section 124 notice, and for the Ministry of Business, Innovation and Employment to provide guidance to TAs on how to exercise their discretion as to whether to grant these applications.
- 96 These proposals will provide for a clear transitional system, will help to provide certainty for building owners and TAs, will reduce unnecessary re-work and will retain momentum generated since the Canterbury Earthquakes.

Next steps

- 97 The Bill is currently being considered by the Local Government and Environment Committee. The Ministry of Business, Innovation and Employment is due to provide its Departmental Report to the Committee by the end of April 2015.
- 98 I propose that decisions on the matters outlined in this paper be incorporated into the Ministry of Business, Innovation and Employment's Departmental Report to the Local Government and Environment Committee.

Consultation

- 99 The following agencies have been consulted on this paper:
- The Treasury, Canterbury Earthquake Recovery Authority, Ministry for the Environment, Ministry for Culture and Heritage, Department of Internal Affairs, Inland Revenue, Government Property Management Centre of Expertise, Ministry of Health, Ministry of Education, Ministry of Justice, Ministry of Civil Defence and Emergency Management, Office for Disability Issues, Ministry of

Social Development, Land Information New Zealand, Ministry of Transport and the New Zealand Transport Agency.

100 The Department of the Prime Minister and Cabinet has been informed.

101 Initial discussions have been held with LGNZ. LGNZ was generally supportive of the proposals. However, it still has concerns about potential impacts on rural and provincial New Zealand in areas of high seismic risk where underlying economies are not strong.

[omitted]

Comment from the Ministry of Education

106 The Ministry of Education supports the paper. The Ministry of Education would like to continue to engage on the methodology being developed to determine whether a building is identified as potentially earthquake-prone prior to the methodology being presented to Cabinet.

[omitted]

[omitted]

Proactively released by the Minister for Building and Housing

Financial implications

113 The feedback Ministry of Business, Innovation and Employment officials have received from the Ministries of Health and Education and Treasury is that the priority building proposals in this paper could have financial implications for the Crown, as timeframes for remediating some Crown-owned earthquake-prone buildings may be brought forward, but others will be extended.

114 The existing Bill requires all earthquake-prone buildings (including schools and hospitals) to be remediated within 20 years of the legislation taking effect (i.e. assessment by TAs within five years, strengthening within 15 years of assessment). The combined effect of the changes in timeframes and priority buildings in this paper mean that for education and hospital buildings, the total timeframe is:

- extended from a maximum of 20 years to a maximum of up to 52 years in areas of low seismic risk (containing 41% of New Zealand's population);
- unchanged at a maximum of up to 20 years in areas of medium seismic risk (containing 25% of New Zealand's population); and
- reduced from a maximum of 20 years to a maximum of up to 12 years in areas of high seismic risk (containing 34% of New Zealand's population).

115 The full extent of these implications cannot be accurately assessed at this time. This is in part because:

- impacts will depend on exactly how priority buildings is defined in the legislation, and the manner in which that affects earthquake-prone hospitals, schools, early childhood education centres, and tertiary education facilities;
- assessments of the Crown's building stock have not yet been fully completed; and
- some of the cost impacts would have been met within existing baselines.

Human rights

116 There are no human rights issues associated with the proposals in this paper.

Legislative implications

117 The proposals in this paper will amend the Building Act 2004 through the Building (Earthquake-prone Buildings) Amendment Bill. The Bill is currently being considered by the Local Government and Environment Committee. The Bill has a category 2 rating on the 2015 legislation programme (must be passed in 2015).

118 It is proposed that the decisions on the proposals in this paper be incorporated into the Ministry of Business, Innovation and Employment's Departmental Report to the Local Government and Environment Committee.

119 The Committee is due to report back to Parliament on the Bill by 30 July 2015.

Regulatory impact analysis

120 The Regulatory Impact Analysis (RIA) requirements apply to the proposal in this paper and a Regulatory Impact Statement (RIS) has been prepared and is attached.

121 The Regulatory Impact Analysis Team (RIAT) has reviewed the RIS prepared by the Ministry of Business, Innovation and Employment and associated supporting material, and considers that the information and analysis summarised in the RIS partially meets the quality assurance criteria.

- 122 The RIS does not clearly indicate which of the cost-benefit analyses modelled corresponds most closely to the set of proposals put forward in the Cabinet paper. However, enough detail is given to be clear that the quantifiable costs of the proposal heavily outweigh the quantifiable benefits, including lives saved, albeit to a lesser extent than is the case for the approach currently contained in the Bill or the system currently in effect.
- 123 The options examined in the RIS have not themselves been subject to public consultation. However, the analysis is clearly informed by submissions to the Local Government and Environment Committee.

Disability perspective

- 124 A disability perspective statement was prepared when the substantive policy approvals were made in August 2013 [CAB Min (13) 26/7 refers]. The proposals in this paper do not impact on that statement.

Publicity

- 125 A communications strategy is being developed to support the announcement of additional decisions on proposals for changes to the system for managing earthquake-prone buildings, taking into account the confidentiality of select committee proceedings.

Proactively released by the Minister for Building and Housing

Recommendations

126 The Minister for Building and Housing recommends that the Committee:

- 1 **note** that the Building (Earthquake-prone Buildings) Amendment Bill (the Bill) amends the Building Act 2004 (the Act) to give effect to reforms agreed by Cabinet and announced in August 2013 to improve the system for managing earthquake-prone buildings [CAB Min (13) 26/7 and CAB Min (13) 41/1 refer];
- 2 **note** that the Bill is currently being considered by the Local Government and Environment Committee and the Ministry of Business, Innovation and Employment is due to provide its Departmental Report to the Committee by the end of April 2015;
- 3 **note** that many submitters on the Bill supported the intent of the proposed legislation, however, several submitters including Local Government New Zealand and some territorial authorities (TAs) raised concerns about the potentially significant impacts of the Bill, particularly for rural and provincial New Zealand, and regions of low seismic risk;
- 4 **note** that to help address the concerns of submitters, additional Cabinet policy approvals are needed to refine the Bill;
- 5 **note** that refining the Bill will involve rescinding some existing Cabinet decisions, which are incorporated in the Bill as currently drafted;
- 6 **note** that in August 2013 Cabinet authorised the Minister for Building and Construction to approve changes consistent with the agreed policy framework on any issues that arose during the drafting process, and in November 2013 Cabinet Legislation Committee confirmed certain authorisations that the Minister for Building and Construction had made in accordance with the Cabinet approvals – certain elements of those authorisations will be impacted by decisions made on the matters outlined below [LEG Min (13) 26/7, CAB Min (13) 26/7 and CAB Min (13) 41/1 refer];

Excluding additional buildings from the system

- 7 **note** that most residential buildings are excluded from the existing system for managing earthquake-prone buildings in Part 2, subpart 6 of the Act;
- 8 **agree** to include in the Bill an amendment to the Act to:
 - 8.1 exclude certain additional buildings from the definition of an earthquake-prone building, along the lines of the following: farm buildings, retaining walls, fences, monuments that cannot be entered (e.g. statues), wharves, bridges, tunnels, storage tanks (e.g. water reservoirs);
- 9 **note** that the buildings listed in paragraph 8.1 above are covered by the current earthquake-prone building definition in section 122 of the Act but in practice TAs have not focused on them and applying the pro-active earthquake-prone building provisions in the Bill to these buildings would likely either be impractical or excessive or both;
- 10 **agree** that any notices that have been issued under section 124 of the Act requiring remediation in relation to buildings listed in paragraph 8.1 above will lapse upon the commencement of the legislation;

Initial investigations, engineering assessments, notification and disclosure of earthquake-prone buildings

- 11 **note** that on 5 August 2013 Cabinet agreed to amend the Act to require:
- 11.1 TAs to undertake a seismic capacity assessment of all non-residential and multi-storey/multi-unit residential buildings (as currently defined under section 122 of the Act) in their districts within five years from commencement using a methodology specified and published by the Ministry of Business, Innovation and Employment;
 - 11.2 TAs to prioritise for assessment, according to a framework to be specified and published by the Ministry of Business, Innovation and Employment:
 - (i) buildings likely to have a significant impact on public safety (including buildings with high risk elements such as falling hazards); and
 - (ii) strategically important buildings;(with both (i) and (ii) defined in regulations made under the Act);
 - 11.3 TAs to provide the results of the assessments to the relevant building owner;
 - 11.4 owners who are notified that the outcome of the seismic capacity assessment is that their building is earthquake-prone to strengthen (or demolish) their building within the statutory timeframe;
 - 11.5 provide that an owner will be able to provide an engineering assessment of a type to be specified and published by the Ministry of Business, Innovation and Employment, should they disagree with the outcome of the seismic capacity assessment undertaken by the TA [CAB Min (13) 26/7 refers];
- 12 **note** that on 5 August 2013 Cabinet also agreed to amend the Act to require TAs to enter the results of each seismic capacity assessment into the national register (as well as updated information if this becomes available to the TA) [CAB Min (13) 26/7 refers];
- 13 **rescind** the decisions referred to in paragraphs 11.1 to 11.5; and instead
- 14 **agree** to include the following proposals in the Bill to amend the Act to:
- 14.1 require TAs to undertake initial investigations to identify potentially earthquake-prone buildings within their districts using a methodology to be set and published by the Chief Executive of the Ministry of Business, Innovation and Employment (with no ability for the TA to recover the costs of doing so directly from the individual building owner), and notify owners by way of an outcome notice, within the following timeframes from commencement;
 - 14.1.1 five years in areas of high seismic risk;
 - 14.1.2 10 years in areas of medium seismic risk; and
 - 14.1.3 15 years in areas of low seismic risk;

- 14.2 define areas of high, medium and low seismic risk in connection with the Building Code (and associated approved solutions and verification methods) with reference to the seismic hazard factor (Z factor) as follows:
- 14.2.1 high seismic risk (Z factor ≥ 0.3);
 - 14.2.2 medium seismic risk (Z factor of 0.15 up to < 0.3); and
 - 14.2.3 low seismic risk (Z factor < 0.15);
- 14.3 require TAs to prioritise for identification those buildings defined as a priority building (within half the timeframe for identification of other buildings);
- 14.4 require building owners to provide an engineering assessment to their TA within 12 months of being advised in an outcome notice that their building is potentially earthquake-prone (using tools and methods specified in the methodology set and published by the Chief Executive of the Ministry of Business, Innovation and Employment), unless they can provide conclusive evidence that their building is not earthquake-prone;
- 14.5 provide TAs with a limited discretion to extend the 12 month period for assessment (for up to a further 12 months), for example where there is insufficient engineering resource available to undertake assessments;
- 14.6 provide TAs with discretionary powers to undertake an engineering assessment using tools and methods specified in the methodology set and published by the Chief Executive of the Ministry of Business, Innovation and Employment (with the ability for the TA to recover the costs of undertaking assessments from the building owner);
- 14.7 provide that where an owner either advises the TA that they do not wish to undertake an engineering assessment, or fails to provide an engineering assessment, the building is designated as 'potentially earthquake-prone (not assessed)', and:
- 14.7.1 it is automatically categorised with earthquake-prone buildings that have the lowest level of performance;
 - 14.7.2 notices issued requiring work to be carried out and the register will record the fact that the building is potentially earthquake-prone and an assessment has not been undertaken;
 - 14.7.3 remediation to ensure that the building is no-longer earthquake-prone will be required as if the building was an earthquake-prone building; and
- 14.8 provide that the methodology for initial investigations to identify potentially earthquake-prone buildings and engineering assessments is risk-based, and require the methodology to specify:
- 14.8.1 the tools and methods to be used to identify potentially earthquake-prone buildings; and
 - 14.8.2 the tools and methods to be used to determine whether or not a building is earthquake-prone, and its rating;

- 15 **note** that the Minister for Building and Housing will be bringing the methodology to Cabinet because it will have an important effect on how wide the net is cast to determine those buildings that will need engineering assessments, including buildings in the public sector (such as buildings in the health and education sectors);
- 16 **note** that it is intended that the methodology will be heavily focused on unreinforced masonry buildings, with most timber framed buildings unlikely to require engineering assessments;
- 17 **agree** to include in the Bill amendments to the Act to require TAs to monitor and report their progress on identification of potentially earthquake-prone buildings to the Chief Executive of the Ministry of Business, Innovation and Employment:
- 17.1 annually in relation to areas of high seismic risk;
 - 17.2 every two years in relation to areas of medium seismic risk; and
 - 17.3 every three years in relation to areas of low seismic risk;
- (with the shortest relevant reporting timeframe applying for those TAs that cover more than one area of seismic risk);
- 18 **agree** to include in the Bill amendments to the Act to:
- 18.1 provide TAs with residual discretionary powers to apply their earthquake-prone building powers to those buildings not initially identified as potentially earthquake-prone; and
 - 18.2 enable TAs to exercise the powers outlined in paragraph 18.1 after the relevant identification period, if necessary;
- 19 **agree** to include the following proposals in the Bill to amend the Act to:
- 19.1 amend the register provisions in the Bill so that the register only includes details of buildings that have been determined by the TA as being earthquake-prone following consideration of an engineering assessment (and those designated as potentially earthquake-prone (not assessed)) rather than including details of all buildings;
 - 19.2 clarify that the register includes relevant details where only part of the building is earthquake-prone;
 - 19.3 change the name of the seismic capacity register to the earthquake-prone buildings register;
 - 19.4 amend the register provisions in the Bill so that the register also includes details of an earthquake-prone building's percentage of new building standard (NBS) range or specific percentage NBS, or in the case of a potentially earthquake-prone building where no engineering assessment has been undertaken a statement that it has not been assessed;

- 19.5 change the names of the seismic capacity assessment and seismic work notice to engineering assessment and earthquake-prone building notice, and amend the relevant provisions in the Bill so that:
- 19.5.1 notices issued requiring work to be done for earthquake-prone buildings will specify whether the building is a priority building and will also specify its percentage NBS range or specific percentage NBS or, in the case of a potentially earthquake-prone building where no engineering assessment has been undertaken, a statement that it has not been assessed; and
 - 19.5.2 the form of the earthquake-prone building notice be set in regulations (using a grading scheme to help differentiate earthquake-prone buildings and incentivise action);
- 19.6 provide owners with the ability to provide an engineering assessment to the TA (in accordance with the tools and methods to be specified and published in the methodology) at any time after the issue of an earthquake-prone building notice, and in the event the TA considers that this changes the outcome of the earthquake-prone building notice to require the TA to reissue (or revoke) the notice and update the register;
- 20 **agree** to remove the requirement in the Bill (which restates the current requirements in section 125 of the Act) for TAs to provide copies of earthquake-prone building notices to occupiers of the building, as this is an unnecessary compliance cost as there will be a requirement for earthquake-prone building notices to be sent to owners, placed on the buildings, and information about earthquake-prone buildings will also be on a publicly accessible register available on the internet;

Timeframes for remediating buildings determined as earthquake-prone

- 21 **note** that on 5 August 2013, Cabinet agreed to amend the Act to require buildings to be strengthened so they are not earthquake-prone (or demolished) within 20 years of the legislation taking effect (i.e. assessment by TAs within five years, strengthening within 15 years of assessment) [CAB Min (13) 26/7 refers];
- 22 **rescind** the decision referred to in paragraph 21; and instead:
- 22.1 agree to include in the Bill amendments to the Act to set the timeframe for remediation of earthquake-prone buildings at 15 years for areas of high seismic risk, 25 years for areas of medium seismic risk, and 35 years for areas of low seismic risk – with timeframes for remediation running from when buildings are determined as earthquake-prone (or designated potentially earthquake-prone (not assessed)); and
 - 22.2 define areas of high, medium and low seismic risk in connection with the Building Code (and associated approved solutions and verification methods) with reference to the seismic hazard factor (Z factor) as follows:
 - 22.2.1 high seismicity risk (Z factor ≥ 0.3);
 - 22.2.2 medium seismic risk (Z factor of 0.15 up to < 0.3); and
 - 22.2.3 low seismic risk (Z factor < 0.15);

Priority buildings

23 **note** that on 5 August 2013, Cabinet agreed to amend the Act to:

- 23.1 provide that TAs can require (i) buildings likely to have a significant impact on public safety (including buildings with high risk elements such as falling hazards) and (ii) strategically important buildings, to be strengthened (or demolished) more quickly than other earthquake-prone buildings (with both (i) and (ii) defined in regulations made under the Act); and
- 23.2 require TAs to set a framework for dealing with these buildings after consulting with their communities (using the special consultative procedure in section 83 of the Local Government Act 2002), for transparency [CAB Min (13) 26/7 refers];

24 **EITHER**

24.1 **rescind** the decisions referred to in paragraphs 23.1 and 23.2; and instead agree to include the following proposals in the Bill to amend the Act to:

24.1.1 define priority building within primary legislation in areas of high and medium seismic risk as follows:

24.1.1.1 'hospital buildings' – those components of a hospital necessary for it to be able to maintain services in the event of a significant earthquake, but excluding administration buildings and aged residential care facilities;

24.1.1.2 'school buildings' – all buildings regularly occupied by 20 persons or more in an early childhood education centre, primary, secondary, or tertiary education facility, including registered private training establishments;

24.1.1.3 'emergency service facilities' – emergency service facilities such as fire stations, police stations and emergency vehicle garages; and designated emergency shelters, designated emergency centres and ancillary facilities;

24.1.1.4 'corridor buildings' – those buildings identified by the TA, after consulting their communities (using the special consultative procedure in section 83 of the Local Government Act 2002) that could, if they were to collapse in an earthquake, impede transport routes of strategic importance in an emergency. The use of this provision would be optional for TAs;

24.1.2 set the timeframe for remediating priority buildings at half the timeframe for other earthquake-prone buildings (after a building is determined as being earthquake-prone or designated as potentially earthquake-prone (not assessed));

[omitted]

Additional 'substantial alterations' trigger for upgrading earthquake-prone buildings

- 25 **note** that to help further ensure that earthquake-prone buildings are remediated in a timely manner nationally, a further trigger in the Bill for upgrading earthquake-prone buildings is recommended;
- 26 **agree** to include the following proposals in the Bill to amend the Act to:
- 26.1 add a further trigger for remediating earthquake-prone buildings so that where 'substantial alterations' are to be carried out a building consent will not be granted unless building work is undertaken so that the building (or the affected part) is no longer earthquake-prone; and
- 26.2 specify criteria in regulations that TAs must apply when considering whether an alteration is a substantial alteration, e.g. in connection with the value of the building work in the building consent as a ratio of the value of the building or some other criteria as is determined.

Clarification of some miscellaneous matters

- 27 **note** that some miscellaneous matters have been raised by submitters on the Bill that require further clarification in the Act;
- 28 **agree** to include in the Bill amendments to the Act to include:
- 28.1 injury or death to persons around the building in the definition of earthquake-prone building, to ensure that it covers people on the same property as the building as well as persons on other property;
- 28.2 a further 'carve-out' from the general residential exclusion for hostels, boarding-houses or other specialised accommodation, to clarify that earthquake-prone building provisions apply in relation to these buildings;
- 28.3 a regulation making power to define the term 'ultimate capacity';
- 28.4 a statement in the regulation-making power in clause 37 new section 401C(b) of the criteria for granting an exemption from a requirement to remediate an earthquake-prone building that will include but is not limited to:
- 28.4.1 location (including streetscape and seismicity);
- 28.4.2 the age of the building;
- 28.4.3 construction type;
- 28.4.4 building use;
- 28.4.5 building occupancy; and
- 28.5 new provisions allowing TAs to recover the costs of undertaking assessments from the building owner as a debt due to the TA;

Infringement offences

- 29 **agree** to clarify that the infringement regime that currently applies in respect of earthquake-prone buildings in the Building (Infringement Offences, Fees, and Forms) Regulations 2007 continues to apply in the revised system for managing earthquake-prone buildings provided for in the Bill;
- 30 **agree** to include in the Building (Infringement Offences, Fees, and Forms) Regulations 2007 that failures related to displaying earthquake-prone building notices and exemption notices on buildings under clause 23 new section 133AY(2) and (3) are infringement offences, and that the infringement fine for these offences is set at \$1,000;

- 31 **note** that, if agreed to, changes to regulations to give effect to the decisions in paragraphs 29 and 30 will be signalled in the Ministry of Business, Innovation and Employment's Departmental Report to the Local Government and Environment Committee and changes to the regulations made after the Bill is enacted, but before it comes into force;

Transitional provisions (not including excluded buildings)

- 32 **note** that on 5 August 2013, Cabinet agreed to amend the Act to recognise building assessments already undertaken where they have been undertaken using a methodology consistent with, or recognised by, that methodology to be specified and published by the Ministry of Business, Innovation and Employment;

- 33 **note** that on 5 August 2013, Cabinet also agreed to amend the Act:

33.1 so that notices issued under section 124 for earthquake-prone buildings remain in force where the time remaining on the notice is shorter than the timeframe referred to in paragraph 21 above;

33.2 so that notices issued under section 124 for earthquake-prone buildings be reissued by the TA where the time remaining on the notice is longer than the timeframe referred to in paragraph 21 above [CAB Min (13) 26/7 refers];

- 34 **rescind** the decisions referred to in paragraphs 33.1 and 33.2; and instead agree to include the following proposals in the Bill to amend the Act to provide that:

34.1 decisions made by TAs that led to section 124 notices being issued for earthquake-prone buildings remain valid;

34.2 notices issued under section 124 for earthquake-prone buildings be reissued by the TA under the Bill to ensure there are consistent notifications on earthquake-prone buildings;

34.3 where the remediation timeframe remaining on the existing section 124 notices is less than the relevant timeframe referred to in paragraphs 22.1 and 24 then the original remediation timeframe will apply;

34.4 where the remediation timeframe remaining on the existing section 124 notices is longer than the relevant timeframe referred to in paragraphs 22.1 and 24 then the new timeframe referred to in paragraphs 22.1 and 24 will apply; and

34.5 building owners may apply to their TA to have the relevant timeframes in paragraphs 22.1 and 24 apply from the date of issue of their original section 124 notice, and the Ministry of Business Innovation and Employment is to provide guidance to TAs on the exercise of their discretion as to whether to grant these applications;

Next steps

- 35 **agree** that decisions on the matters outlined in paragraphs 7 to 34 above be incorporated into the Ministry of Business, Innovation and Employment's Departmental Report to the Local Government and Environment Committee;

- 36 **note** that the Ministry of Business, Innovation and Employment will also be recommending a range of other minor amendments to improve the workability of the Bill within the scope of existing Cabinet policy approvals as part of the Departmental Report in response to submissions on the Bill;

37 **note** that as part of the implementation of the Bill, the Ministry of Business, Innovation and Employment is developing a monitoring and evaluation strategy to assess the implementation and impacts of Bill.

[omitted]

Hon Dr Nick Smith
Minister for Building and Housing

[omitted]

Proactively released by the Minister for Building and Housing

Appendix 1: Key themes and issues raised in submissions on the Bill

Few submitters explicitly stated their support or opposition to the entire Bill and those who did also went on to specifically support or raise concerns about particular proposals. In some cases, the same submitter equally supported or opposed different parts of the Bill.

Many submitters on the Bill supported the intent of the proposed legislation. However, several submitters including LGNZ and some TAs raised concerns about the potentially significant impacts of the Bill, particularly for rural and provincial New Zealand, and regions of low seismic risk.

Some of the concerns expressed by TAs and others were in relation to the costs of assessment and the need for decisions to be made about the seismic capacity of all existing buildings. Not all existing buildings would have been required to be assessed by an engineer but there was a perception in submissions that this was the case. Other concerns were around potential loss of heritage and costs of remediating earthquake-prone buildings, particularly in communities where the underlying economies are not strong.

Some building owners expressed concerns about the potential impacts on themselves, which they considered to be disproportionate.

Submitters suggested a range of options to address their concerns including financial assistance and alternative systems (for example, those that rely on local discretion like the current system). In relation to specific clauses of the Bill, amendments suggested by submitters to address their concerns include those related to:

- changing the scope of buildings covered by the Bill, including which buildings need to be assessed, and which buildings need to be included on the seismic capacity register;
- which buildings (and parts of buildings) should be prioritised for assessment and remediation, locational seismic risk issues, and the timeframes for remediation;
- amending the Building (Infringement Offences, Fees, and Forms) Regulations 2007 so that the existing infringement regime for earthquake-prone buildings continues to apply following the removal of earthquake prone-buildings provisions from Part 2, subpart 6 of the Act;
- the ability for TAs to recover the costs of assessment; and
- minimising the amount of re-work necessary in relation to work already undertaken, or underway.

Upgrades for means of escape from fire and access and facilities for persons with disabilities

The Bill includes a provision (clause 23 new section 133AX) that will allow upgrades to means of escape from fire and access and facilities for persons with disabilities to not be required in certain limited circumstances when earthquake strengthening is undertaken. The Royal Commission made a similar recommendation in relation to upgrades for access and facilities for persons with disabilities, as it heard evidence that these upgrades were a barrier to earthquake strengthening being undertaken.

There was significant comment on this provision. Disability groups were opposed to it, as was the Human Rights Commission. The majority of the TAs that submitted on the Bill, LGNZ, and the Property Council supported the provision. However a few TAs, such as Wellington City Council, believed that the existing provisions of the Act could be applied in a practical way to reduce the potential for the upgrade requirements to be a barrier to earthquake strengthening.

Heritage building time extension

In relation to the provisions in the Bill that allow for a time extension of up to an extra 10 years to remediate Category 1 listed historic places, several submitters stated that this should apply to all heritage buildings listed on district plans, including those registered as Category 2 historic places.

Regulations Review Committee

The Regulations Review Committee has also provided advice to the Local Government and Environment Committee. The issues raised by the Regulations Review Committee are more technical compared to the issues above and are issues that are recurring concerns of the Regulations Review Committee. They largely relate to how the Bill provides for commencement by Order in Council with a two year longstop date, and the amount of detail to be provided for in regulations. Officials propose to include more information about the content of regulations in the Bill (within the scope of existing Cabinet decisions) as part of the Departmental Report.

Matters raised that are not covered by the Bill

Some submitters to the Local Government and Environment Committee also commented on other regulatory matters not covered by the Bill, including requirements under the Health and Safety in Employment Act 1992 and requirements under the Resource Management Act 1991. These issues are being addressed separately from the Bill by relevant agencies. For example, the Health and Safety Reform Bill includes a specific provision to deal with compliance with other enactments.

Many submitters suggested publicly-funded financial incentives for earthquake strengthening, particularly from central government. Although these submitters suggested various forms of incentives (for example, grants, loans, and the development of financial products that would act as bridging finance), most submitters favoured tax incentives and changes to the depreciation rules.⁷

The Institution of Professional Engineers New Zealand submitted that there is an urgent need to identify and strengthen buildings with non-ductile columns. Buildings with some specific vulnerabilities (such as non-ductile columns) do not fall within the definition of an earthquake-prone building as they are not at risk in a moderate earthquake. They are however at risk in major earthquakes, such as a one-in-500 year earthquake event. The Ministry of Business, Innovation and Employment is developing advice for the Government on how best to deal with these issues as part of the wider response to the Royal Commission.

⁷ Note that some limited assistance is currently available from central government for heritage buildings. Some TAs also provide some limited assistance to owners of earthquake-prone buildings.

Appendix 2: Seismic hazard model and timeframes for remediation of earthquake-prone buildings

The model below is from NZS 1170.5:2004 Structural Design Actions – Part 5: Earthquake actions.

NEW ZEALAND SEISMIC HAZARD MODEL NZS1170

Z-factor



Proactively released by the Minister for Building and Housing

Location	Z factor listed in Verification Method B1/VM1 NZS 1170.5:2004	Proposed timeframe based on Z factor
Otira	0.60	15 years
Arthurs Pass	0.60	15 years
Hanmer Springs	0.55	15 years
Milford Sound	0.54	15 years
Harihari	0.46	15 years
Springs Junction	0.45	15 years
Hokitika	0.45	15 years
Fox Glacier	0.44	15 years
Franz Joseph	0.44	15 years
Dannevirke	0.42	15 years
Pahiatua	0.42	15 years
Masterton	0.42	15 years
Upper Hutt	0.42	15 years
Kaikoura	0.42	15 years
Waipawa	0.41	15 years
Waipukurau	0.41	15 years
Woodville	0.41	15 years
Levin	0.40	15 years
Otaki	0.40	15 years
Waikanae	0.40	15 years
Paraparaumu	0.40	15 years
Porirua	0.40	15 years
Wellington	0.40	15 years
Hutt Valley	0.40	15 years
Eastbourne/Point Howard	0.40	15 years
Wainuiomata	0.40	15 years
Seddon	0.40	15 years
Ward	0.40	15 years
Cheviot	0.40	15 years
Hastings	0.39	15 years
Napier	0.38	15 years
Palmerston North	0.38	15 years
Mt Cook	0.38	15 years
Wairoa	0.37	15 years
Feilding	0.37	15 years
Reefton	0.37	15 years
Greymouth	0.37	15 years
Gisborne	0.36	15 years
Foxton	0.36	15 years
St Arnaud	0.36	15 years
Te Anau	0.36	15 years
Murchison	0.34	15 years
Ruatoria	0.33	15 years
Taihape	0.33	15 years
Blenheim	0.33	15 years
Rangiora	0.33	15 years
Queenstown	0.32	15 years
Bulls	0.31	15 years
Whakatane	0.30	15 years
Opotiki	0.30	15 years
Murupara	0.30	15 years

Proactively released by the Minister for Building and Housing

Location	Z factor listed in Verification Method B1/VM1 NZS 1170.5:2004	Proposed timeframe based on Z factor
Marion	0.30	15 years
Picton	0.30	15 years
Westport	0.30	15 years
Darfield	0.30	15 years
Akaroa	0.30 ⁱ	15 years
Christchurch	0.30 ⁱ	15 years
Wanaka	0.30	15 years
Arrowtown	0.30	15 years
Kawerau	0.29	25 years
Waiouru	0.29	25 years
Taupo	0.28	25 years
Turangi	0.27	25 years
Ohakune	0.27	25 years
Nelson	0.27	25 years
Twizel	0.27	25 years
Raetihi	0.26	25 years
Motueka	0.26	25 years
Wanganui	0.25	25 years
Rotorua	0.24	25 years
Fairlie	0.24	25 years
Cromwell	0.24	25 years
Takaka	0.23	25 years
Te Puke	0.22	25 years
Putaruru	0.21	25 years
Tokoroa	0.21	25 years
Mangakino	0.21	25 years
Tauramarunui	0.21	25 years
Alexandra	0.21	25 years
Tauranga	0.20	25 years
Mount Manganui	0.20	25 years
Ashburton	0.20	25 years
Riverton	0.20	25 years
Winton	0.20	25 years
Matamata	0.19	25 years
Geraldine	0.19	25 years
Paeroa	0.18	25 years
Waihi	0.18	25 years
Morrinsville	0.18	25 years
Te Aroha	0.18	25 years
Cambridge	0.18	25 years
Te Kuiti	0.18	25 years
Waitara	0.18	25 years
New Plymouth	0.18	25 years
Inglewood	0.18	25 years
Stratford	0.18	25 years
Opunake	0.18	25 years
Hawera	0.18	25 years
Patea	0.18	25 years
Gore	0.18	25 years
Te Awamutu	0.17	25 years
Otorohanga	0.17	25 years

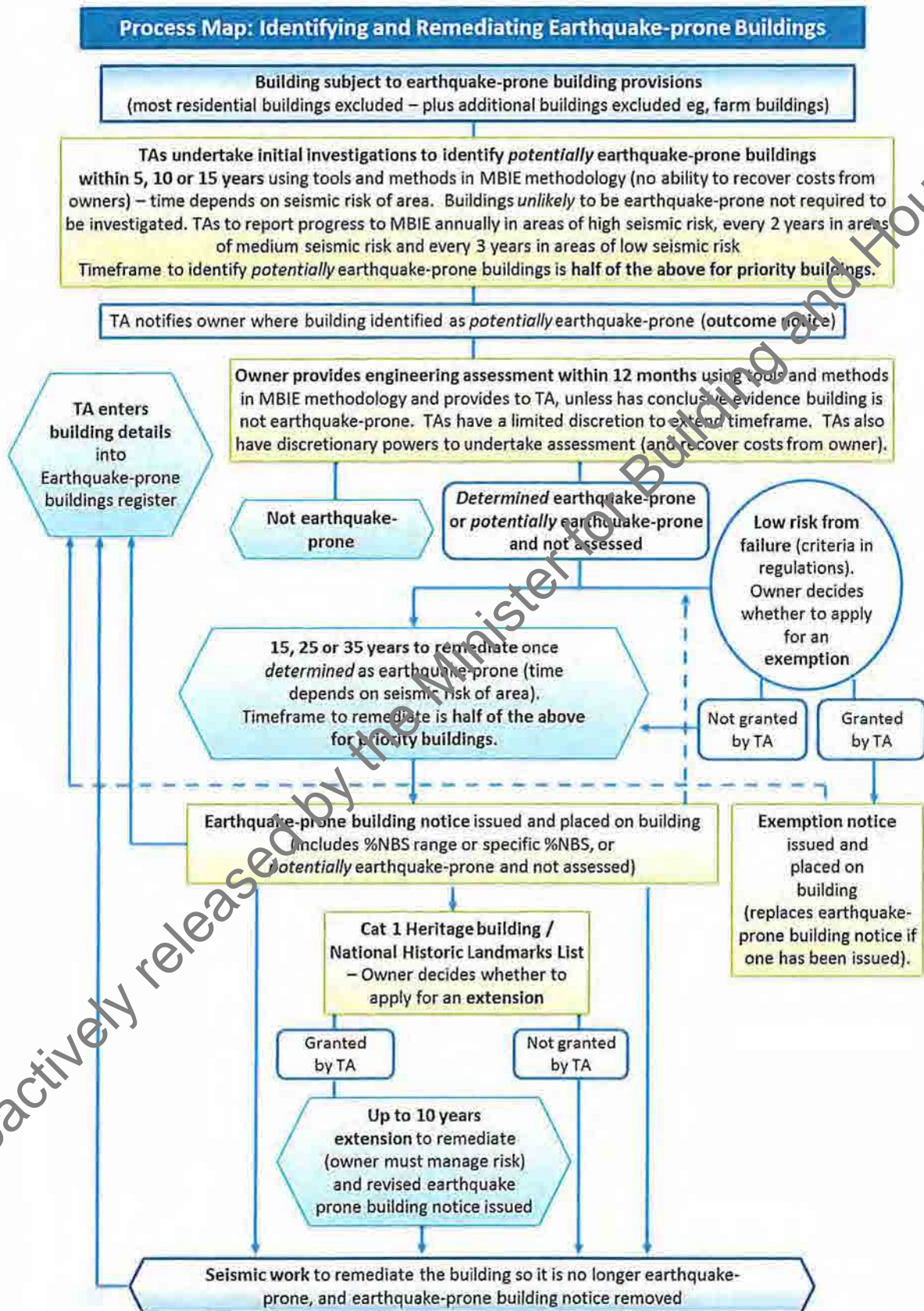
Provisionally released by the Minister for Building and Housing

Location	Z factor listed in Verification Method B1/VM1 NZS 1170.5:2004	Proposed timeframe based on Z factor
Temuka	0.17	25 years
Mataura	0.17	25 years
Invercargill	0.17	25 years
Thames	0.16	25 years
Hamilton	0.16	25 years
Huntly	0.15	25 years
Ngaruawahia	0.15	25 years
Timaru	0.15	25 years
Bluff	0.15	25 years
Waimate	0.14	35 years
Oban	0.14	35 years
Kaitaia	0.13	35 years
Pahia/Russell	0.13	35 years
Kaikohe	0.13	35 years
Whangarei	0.13	35 years
Dargaville	0.13	35 years
Warkworth	0.13	35 years
Auckland	0.13	35 years
Manakau City	0.13	35 years
Waiuku	0.13	35 years
Pukekohe	0.13	35 years
Palmerston	0.13	35 years
Oamaru	0.13	35 years
Dunedin	0.13	35 years
Mosgiel	0.13	35 years
Balclutha	0.13	35 years

Proactively released by the Minister for Building and Housing

ⁱ Z value in NZS 1170.5:2004 modified by B1/VM1 due to the heightened risk of seismic activity in Canterbury over the next few decades above that currently factored into structural design requirements.

Appendix 3: Summary high level process map with main proposals for amendments incorporated into the Bill*



* Additional substantial alterations trigger also applies. Transitional provisions also apply to recognise engineering tests that have already been undertaken, and notices already issued requiring the remediation of earthquake-prone buildings.

Appendix 4: Estimates of numbers of buildings strengthened each year under the current Bill and the proposed revised system*

Strengthening timetables - forecast number of buildings strengthened in each year - for Current Bill and Alternative Policy Option

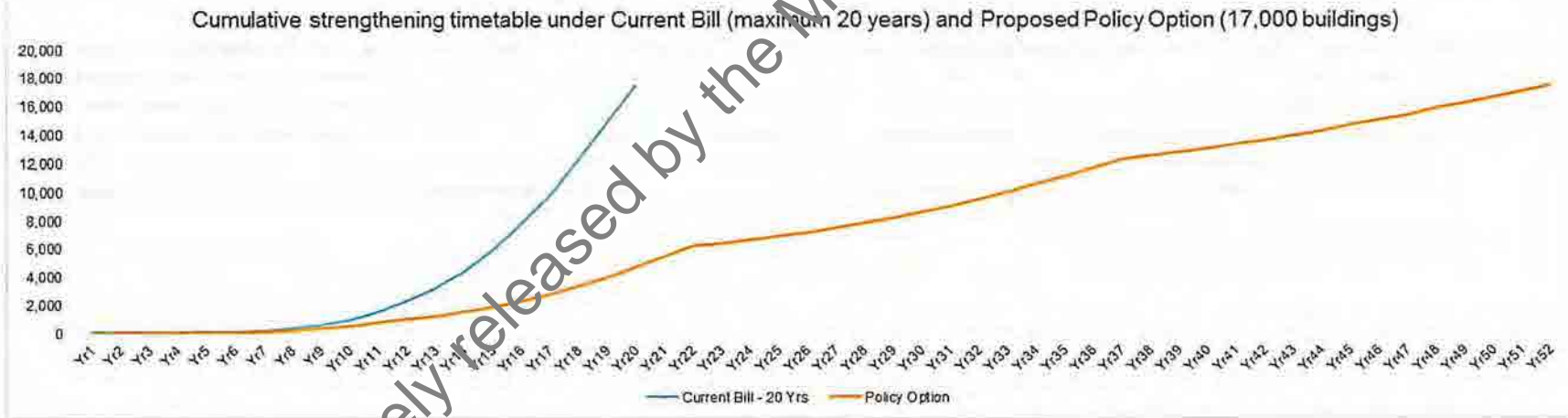
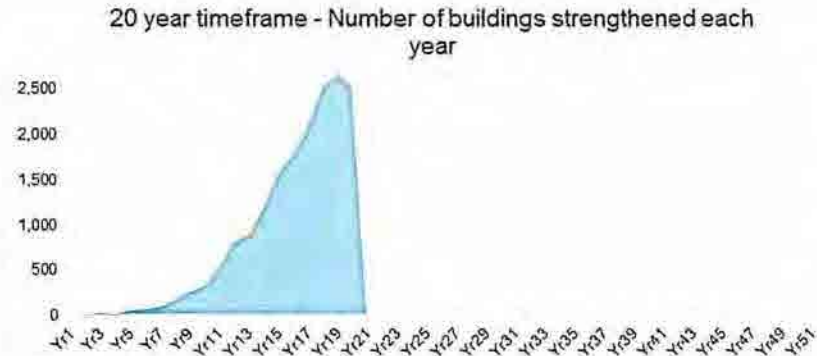
Current Bill - flat 20 year timeframe

Total buildings in both scenarios
- approx 17,000

Policy option:

Priority building timetable imposed only in medium and high seismicity areas

Seismicity area settings based on z-factors for Low, Medium, High of < 15, 15 to 29, and 30 and above



* These figures take into account timeframes for identification, assessment and remediation.

Proactively released by the Minister for Building and Housing