1.5 SEISMIC POLICY AND RISK REDUCTION FRAMEWORK FOR COUNCIL BUILDINGS

Date Adopted	Next Review	Officer Responsible
6 March 2019	30 June 2020	Financial Controller

Policy Purpose:

This document sets out the policy for the assessment and mitigation of seismic risk for all buildings owned or leased by Rotorua Lakes Council.

Scope:

The policy applies to all owned Rotorua Lakes Council's buildings or those leased by Rotorua Lakes Council that accommodate staff and/or public and could pose a risk to health and safety due to a seismic event. It excludes other assets, for example reservoirs and pump stations.

Review Date:

This policy is effective from the date adopted. This policy will be reviewed at least once every two years by the Seismic Steering Committee.

Policy Requirements:

Rotorua Lakes Council will meet all its legal obligations with respect to seismic risks affecting abovementioned assets, including obligations under the Building Act 2004 and the Health and Safety at Work Act 2015 (HSWA).

Rotorua Lakes Council must have a Seismic Risk Reduction framework:

- to assess and mitigate seismic risks affecting Rotorua Lakes Council assets and
- to take all reasonable steps to provide and maintain a safe working environment for Rotorua Lakes Council staff;
- and to reduce risk to operational continuity during post disaster situations.

This policy applies to all owned and leased buildings.

Refer Appendix A - Seismic Risk Reduction Framework (SRRF) Document for further detail.

Implementation:

A Seismic Steering Committee (SSC) is hereby established to implement this policy. The SSC will comprise of the a nominated Councillor, Chief Financial Officer, Group Manager – Strategy, Chief Operations Officer, General Manager Infrastructure.

This Seismic Risk Reduction Framework can be updated and amended by the Seismic Steering Committee.

Appendix A: Seismic Risk Reduction Framework for Council Buildings

1. Definitions

Assets: Buildings and Structures designed to be accessed by people. Plant and equipment are excluded.

Design earthquake: The earthquake loading derived from AS/NZS1170.5 – Earthquake Actions and imposed on the building in question.

Earthquake prone building: A building is classified as earthquake prone by section 122 of the Building Act 2004, when having regard to its condition and to the ground on which it is built, and because of its construction, the building will have its ultimate capacity exceeded in a 'moderate earthquake'.

A 'moderate earthquake', under Section 7 (specified systems, change the use, and earthquake- prone buildings) of Building Regulations 2005 means, in relation to a building, an earthquake that would generate shaking at the site of the building that is of the same duration as, but that is one- third as strong as, the earthquake shaking (determined by normal measures of acceleration, velocity, and displacement) that would be used to design a new building at that site. A building less than 34% of New Building Standard (*%NBS*) is categorised as an Earthquake Prone Building.

Earthquake risk building: A building less than 67% of New Building Standard (*%NBS*) is categorised as an Earthquake Risk Building. A building is classified as earthquake risk by section 122 of the Building Act.

Initial Seismic Assessment (ISA): A qualitative high-level screening process to indicate the likely seismic rating of a building. The Initial Evaluation Procedure (IEP) is a nationally standardized engineering tool for carrying out an ISA.

Detailed Seismic Assessment (DSA): A quantitative assessment focused on the determination of a more accurate assessment of the seismic rating of a building. The assessment of the structural rating will determine the level of risk represented by a building.

***%NBS* (% New Building Standard):** This is the percentage that describes the structural capacity of the building relative to the New Building Standards for a not less than 50-year design life.

2. Purpose

The purpose of the development of a seismic risk reduction framework for Rotorua Lakes Council is to meet the requirement of Rotorua Lakes Council's Seismic Policy and address the following:

1. Reinforce Rotorua Lakes Council's commitment to excellence in health and safety management and the development of a culture that reflects this, with the safety and well-being of staff being the organisation's highest priority.
2. Provide a framework to identify assets within Rotorua Lakes Council's building portfolio, including leased buildings that could pose a life safety risk in a seismic event.
3. Establish the acceptable seismic performance of Rotorua Lakes Council's existing buildings in terms of risk (in comparison to a new building).
4. Provide indicative timeframes for the implementation of the seismic policy for buildings.

3. Assets

The Rotorua Lakes Council asset portfolio consists of various buildings which are diverse in age and type of construction. A register of these buildings will be kept updated with earthquake assessment status.

4. Framework

4.1 Legal Context

Requirements as a building owner

Under both the legislation current at the time of writing this policy (Building Act 2004) and Building (Earthquake-prone Buildings) Amendment Act 2016 (to be enacted in 2017), there is significant discretion as to the level and timing of works undertaken to strengthen buildings, as long as minimums are met.

Council can choose to strengthen to any level above 33% new building standard (NBS) for the majority of buildings. Those classed as Importance Level 4 are required to be 100% NBS.

The Building (Earthquake-prone Buildings) Amendment Act 2016 classifies Rotorua as being a medium risk area which means for most buildings, assessments must be complete before 2025 and works complete by 2050. Education buildings, emergency service facilities, certain hospital buildings and buildings located on strategic routes, have half these time limits. Note the final details of the Act are still being finalised.

Requirements as an employer

The recently enacted Health and Safety at Work Act (HSAW) requires Council to eliminate risks to health and safety, so far as is reasonably practicable; and if it is not reasonably practicable to eliminate risks to health and safety, to minimise those risks so far as is reasonably practicable.

Under the Building Act 2004 ('the Building Act'), a building that is less than 67% of the New Building Standard is considered to be at earthquake risk. Therefore the policy should consider this risk.

Under the previous Health and Safety Legislation, the Ministry of Business, Innovation, and Employment had issued a publication from Worksafe NZ entitled "Dealing with earthquake-related hazards: Information for employers and owners of workplace buildings - Position Statement". This clearly signalled that action could be taken regarding earthquake performance of buildings if building owners were not complying with the Building Act. It also outlined expectations for employers to proactively identify and manage hazard from building components, chattels and equipment.

4.2 Roles and Responsibilities

The following Rotorua Lakes Council roles and responsibilities have been identified in the governance, management and implementation of this Seismic Policy and framework for buildings.

Role	Responsibility
Council	Overall governance of the policy and monitoring its implementation.
Seismic Steering Committee – (Strategy Manager to action)	Implementation of the policy and framework

4.3 Principles

The framework is based on the following principles:

1. **Identify the risk** - Development of a prioritization framework for assessment of all assets and undertaking of building assessments to establish the seismic risk.

2. **Plan to deal with the risk** - Establish acceptable risk profile and steps to reduce this risk to the target risk profile.

3. **Timeframe** – Stage 1 will be carried out as soon as possible and completed no later than 30 June 2017. Establish a realistic timeframe for implementation that is informed by Steps 1 and 2. Refer to Clause 4.10 for implementation timeframe.

4.4 New Buildings

1. All new buildings that Rotorua Lakes Council intend to occupy, whether ultimately owned or leased by Rotorua Lakes Council, shall be designed to the requirements of the New Zealand Building Act, New Zealand Building Code and relevant legislation and design standards.

2. Rotorua Lakes Council should make all reasonable efforts to inform themselves, via technical advisors, of the anticipated damage to the building following the 'design earthquake' and the potential disruption this could have to their operations.

4.5 Existing Buildings

1. Existing buildings occupied by Rotorua Lakes Council, or those Rotorua Lakes Council are considering to occupy, shall be assessed using the approach in Clause 4.9.

2. Where RLC is a tenant, information from the Landlord regarding the buildings seismic and structural resilience may be used, as long as it has been certified by a Chartered Professional (CPEng) Structural Engineer.

3. IL3 buildings with an assessment of <67*%NBS* in the Initial Seismic Assessment (ISA) phase shall be analysed in more detail in a Detailed Seismic Assessment (DSA) to more definitively establish if they are an earthquake-risk building.

4. Buildings assessed to be <34*%NBS* in the Detailed Seismic Assessment phase will be deemed to be earthquake-prone and Rotorua Lakes Council will either relocate or may seismically strengthen to meet the target strengthening level, refer Clause 4.6, as soon as reasonably practical and within the legislative timeframes.

4.6 Target Strengthening

This framework requires an overlying seismic 'threshold' or minimum level of seismic resilience in a building.

This threshold is set to minimise the risk to life-safety by defining the minimum acceptable level of seismic resilience a building accommodating Rotorua Lakes Council staff is to have.

Whist the legal minimum strengthening threshold is 34% of New Building Standard (*%NBS*), the minimum seismic threshold adopted for Rotorua Lakes Council's seismic building policy is as follows:

- IL2 buildings >33*%NBS*
- IL3 buildings >33*%NBS* with a commitment to investigate the options for strengthening the buildings, for example to; 67*%NBS*, 80*%NBS* or 100*%NBS*. There will be a decision made based on an assessment of the economic importance of the building to the community, the number of people in the building, heritage value, civil defence requirements, the strengthening costs, and other factors.
- IL4 buildings 100*%NBS*

4.7 Building Reassessment Following a Seismic Event (Magnitude 6.0 or greater)

1. All Rotorua Lakes Council buildings occupied by people shall be visually inspected by a Chartered Professional (CPEng) Structural Engineer as soon as reasonably practicable after a significant earthquake.
2. The visual inspection is to ascertain if the buildings condition has deteriorated as a consequence of the earthquake.
3. If the building is deemed to have deteriorated as a consequence of the earthquake then the assessment procedures as per Clause 4.9 shall be undertaken.

4.8 Chattels and Equipment

Procedures for eliminating risk from non-structural chattels and equipment to occupants of Rotorua Lakes Council buildings (owned or tenanted) shall be reviewed and implemented in conjunction with this Seismic Policy for buildings.

4.9 Assessment Methodology

This framework was shaped by the requirement for a quantitative, risk-based approach which measured the relative seismic risk posed by each building, and then derived remediation costs and timeframes based on that risk. It acknowledges that remediation timeframes cannot be determined solely by risk, but must also take into account affordability constraints, human resource availability and wider site capital works synergies.

Utilising a risk-based approach and adding Stages as hold points in the process provides Rotorua Lakes Council with the opportunities to assess the risks to aid decision making and prioritisation before moving onto the next stage.

Benefits of this approach include:

- A framework that considers multiple factors to inform decision making.
- Consistency in evaluation and approach.
- Defined processes / procedures that can be audited and measured.

The proposed stages within these steps are:

Stage 1A: Initial review of building stock to determine which Importance Level (IL) 2 buildings require Initial Seismic Assessments (ISA). All IL3 & IL4 buildings require ISAs.

Stage 1B: Initial Seismic Assessment (ISA) using an Initial Evaluation Procedure (IEP)

Stage 2: Detailed Seismic Assessments (DSA) and concept strengthening scheme, including cost estimates for the strengthening scheme. Following the completion of the ISA, DSA's are

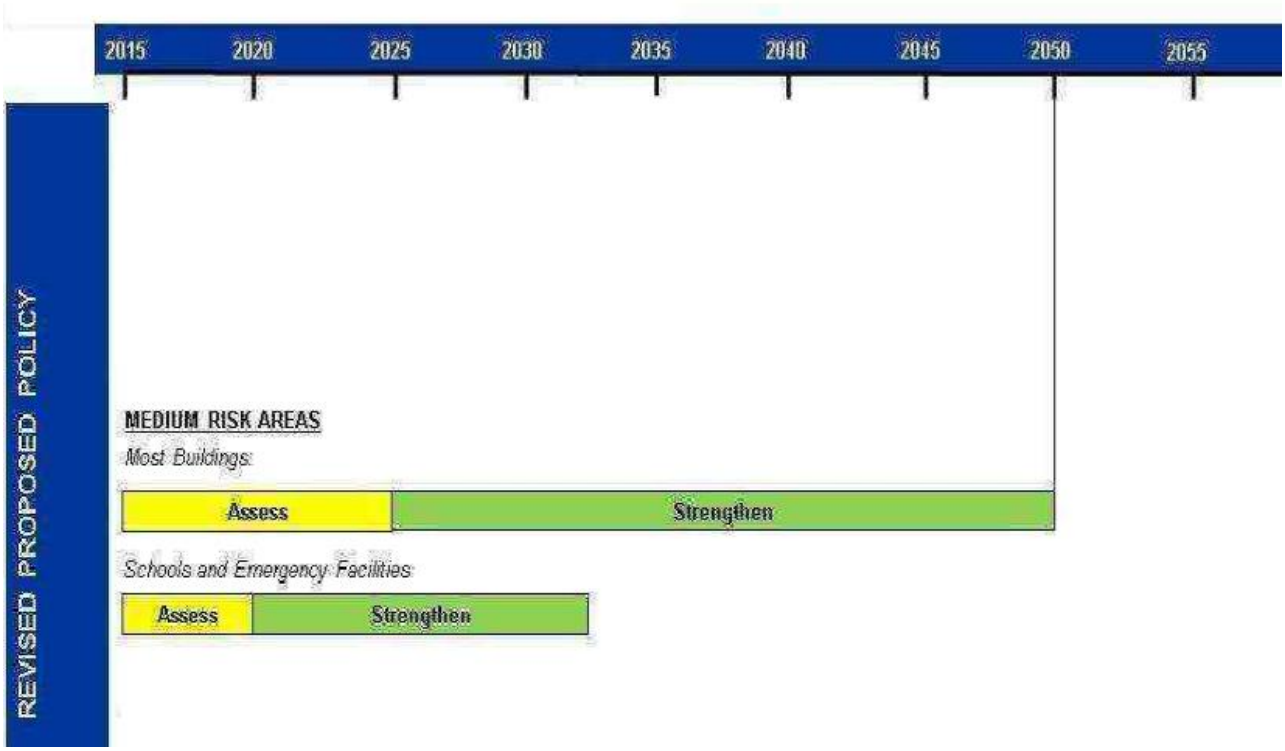
required for all IL2 buildings <34*%NBS*, IL3 buildings <67*%NBS* and IL4 buildings <100*%NBS*.

Stage 3: Detailed Strengthening Design and Implementation.

All stages mentioned above will be carried out as per New Zealand Society of Earthquake Engineering (NZSEE) 'Assessment and Improvement of the Structural Performance of Buildings in Earthquakes' guidelines. All reporting shall also be as these guidelines.

4.10 Implementation Timeframe

The implementation timeframe will be no less than the table below (from the current draft Earthquake Prone Buildings Amendment Bill), noting that Stage 1A and 1B above will be completed by 30 June 2017.



The establishment of implementation timeframes will consider the following:

- The threat posed by the building to the safety of its occupants
- Resources available and their capability both internally and externally
- Capital funding requirements
- Co-ordination with other capital works programmes.