

# City Seismic Issues

**Absolutely Positively**  
**Wellington City Council**

Me Heke Ki Pōneke



# About

**This briefing responds to Council's roles as they relate to Wellington city's seismic issues as regulator, building owner, and advocate for city wellbeing.**

It also provides an update on the progress of the December 2023 deadline to present Council with an update on Wellington's earthquake risks, covering the GNS latest data, the status of earthquake-prone Council and privately owned properties under the Building Act 2004, and how we propose to carry out our role.

# **Agenda**

## **Part 1.**

**Wellington's  
Seismic  
Context**

## **Part 2.**

**Council's  
Regulatory  
Role**

## **Part 3.**

**Council as  
Building  
Owner**

## **Part 4.**

**Council as  
advocate**

# Part 1.

## Wellington's Seismic Context



# Te Motu Kairangi

Wellington has been subject to enormous seismic forces – the land upon which we stand has been reshaped time and time again.



..... Present day shoreline

# Te Motu Kairangi 1840's

Farmland and swamps

Pā sites of Te Motu Kairangi

< Back to story

RESHAPING THE LAND 1840 - 1907

## Pā sites of Te Motu Kairangi

Māori flourished in Te Motu Kairangi, with abundant resources. They established pā sites across the area in strategic positions that offered defensive advantages - or close to fresh water resources such as lake Para. They introduced eels from the Hutt Valley into the lakes. As the area became farmland and then housing, these Māori settlements were pushed out.



↑ Map showing pā sites

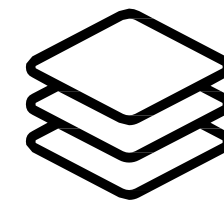
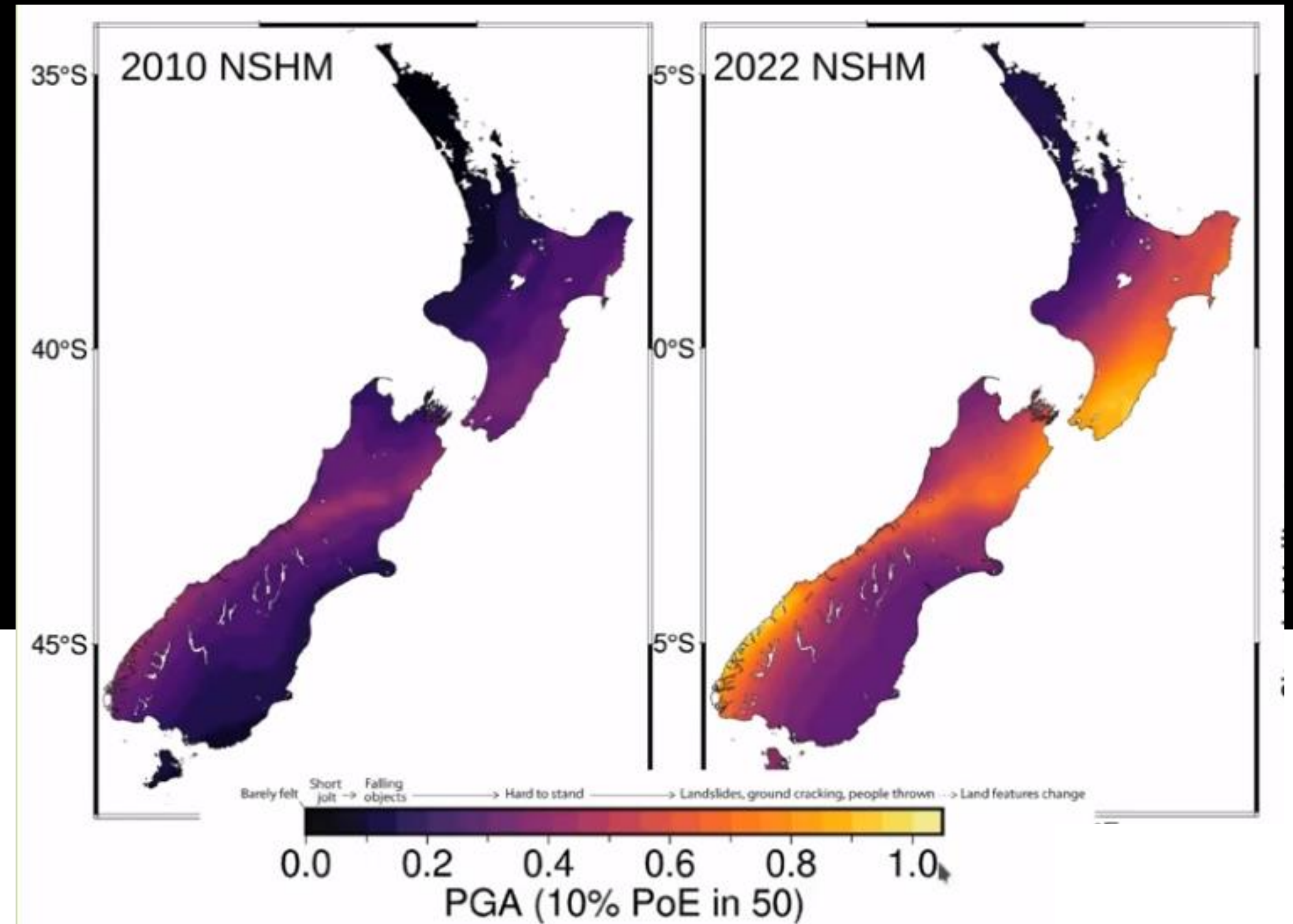


# Te Motu Kairangi Present Day

# National Seismic Hazard Model

The NSHM has been prepared by the Institute of Geological and Nuclear Sciences Limited (GNS Science)

These maps show peak ground acceleration at a 10% probability of exceedance.

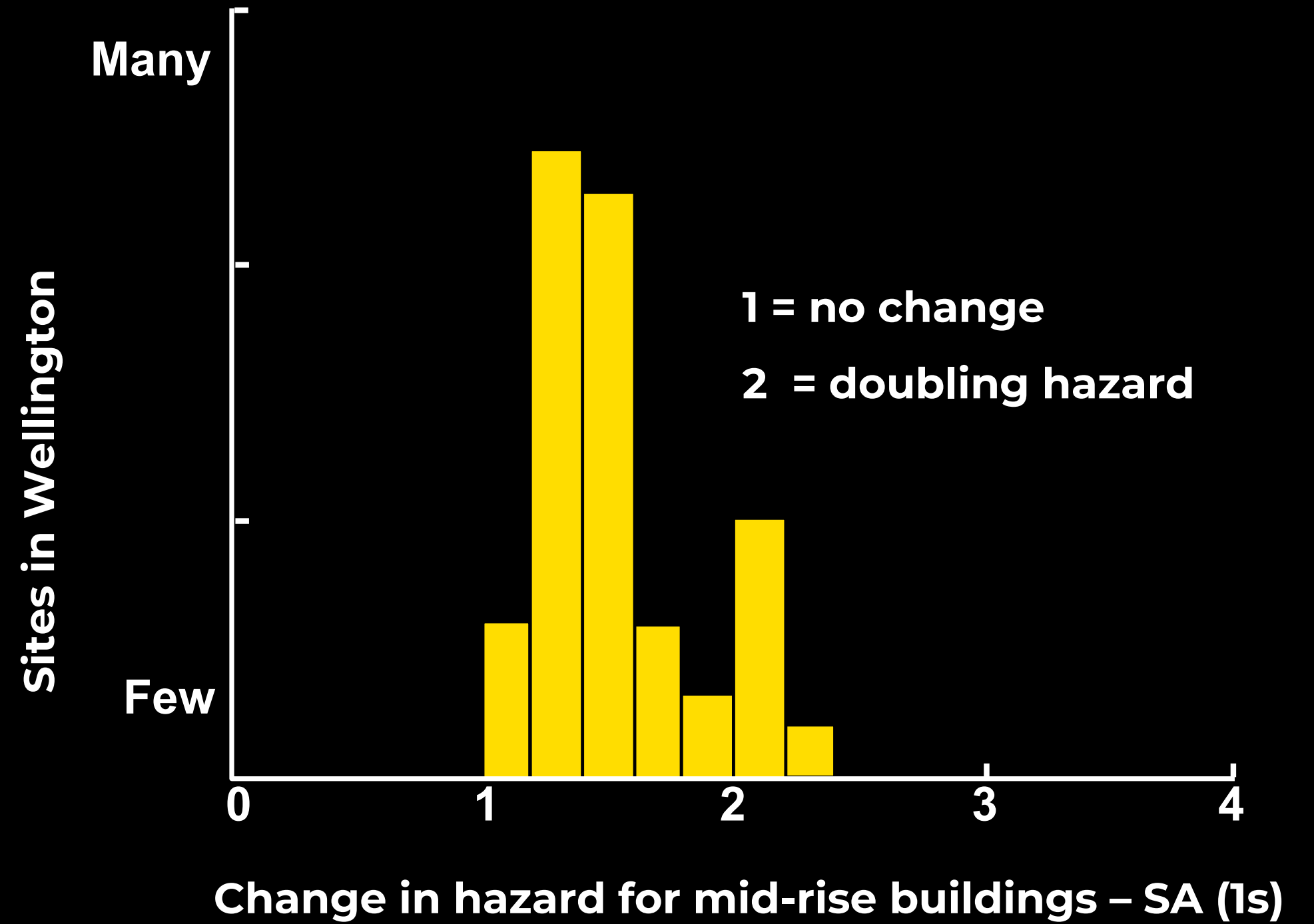


**National Seismic Hazard Model**  
2021

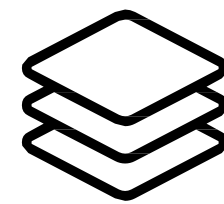


# National Seismic Hazard Model

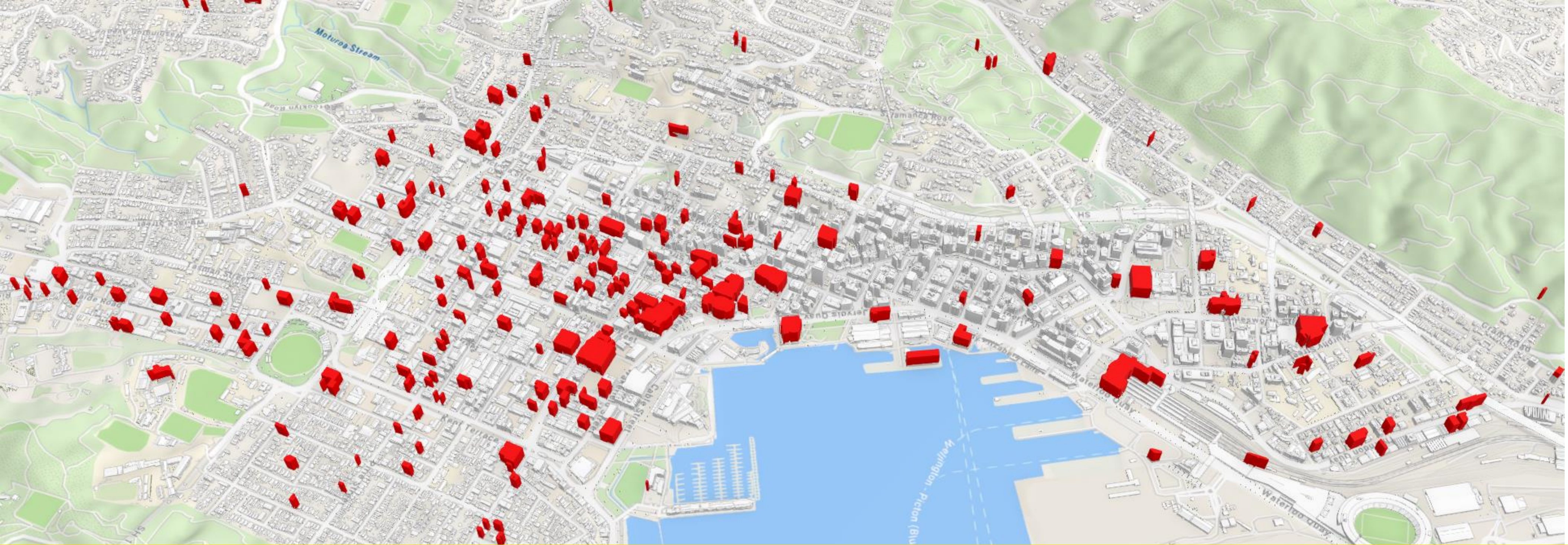
Not all locations will experience the same change



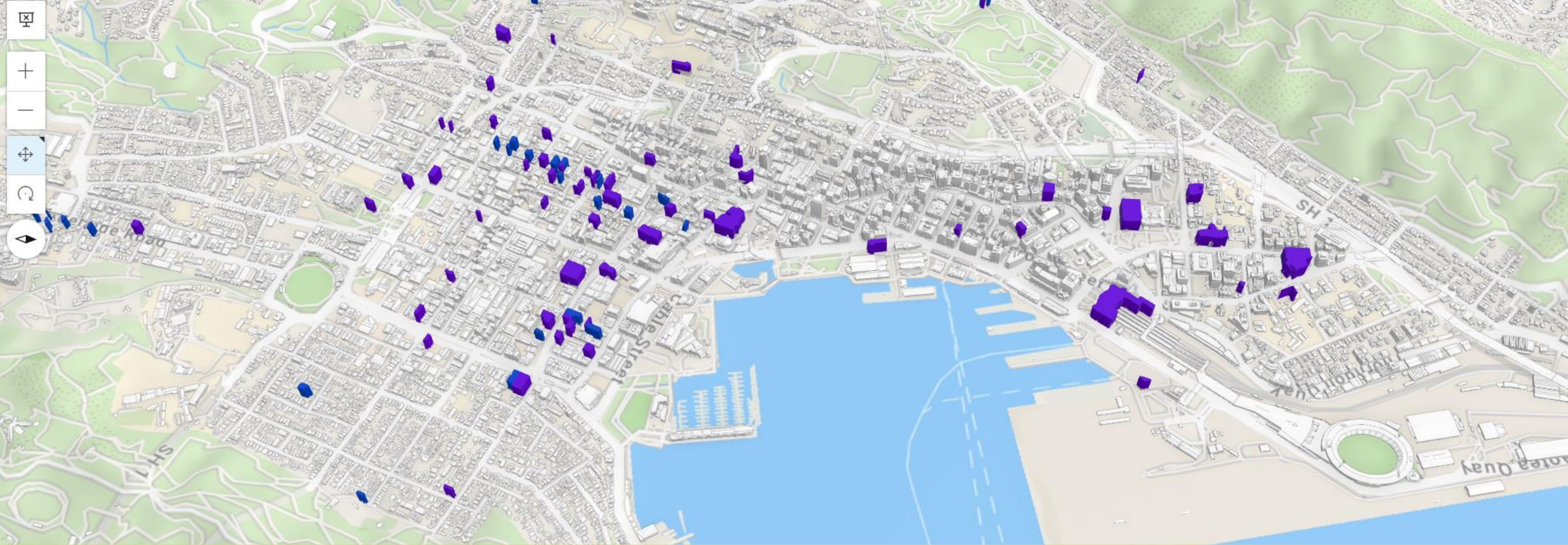
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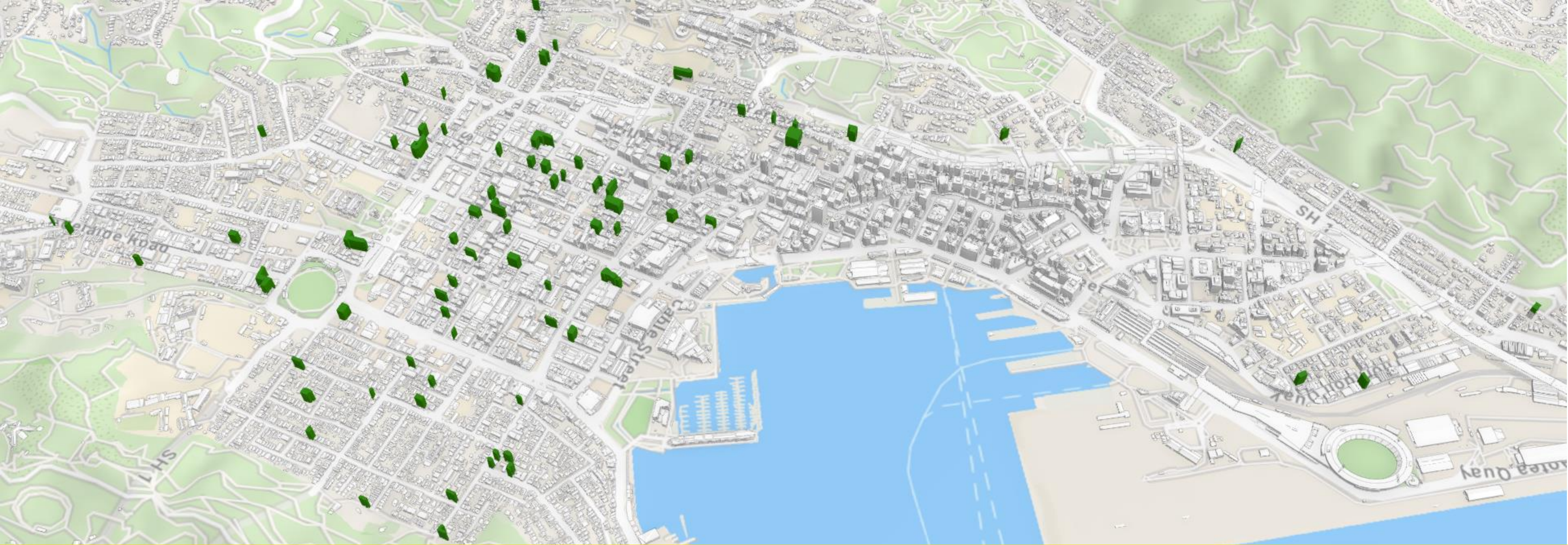
**National Seismic Hazard Model**  
2021



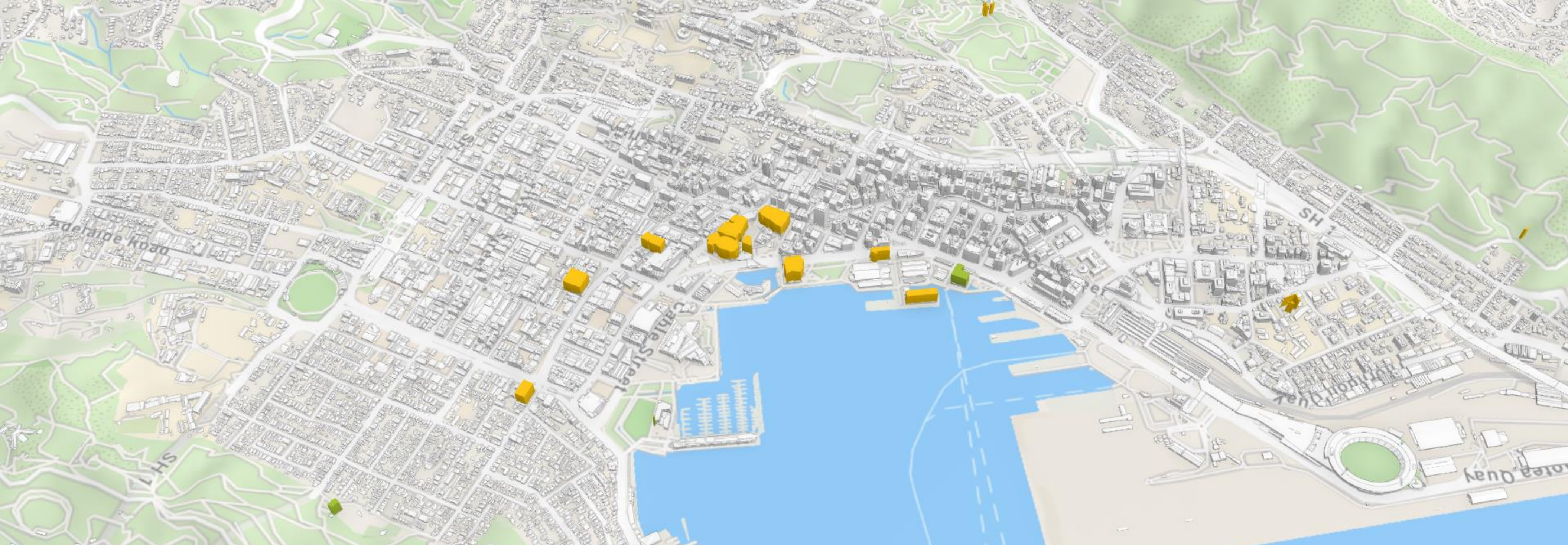
Earthquake-prone  
Buildings



Earthquake-prone  
Heritage Buildings

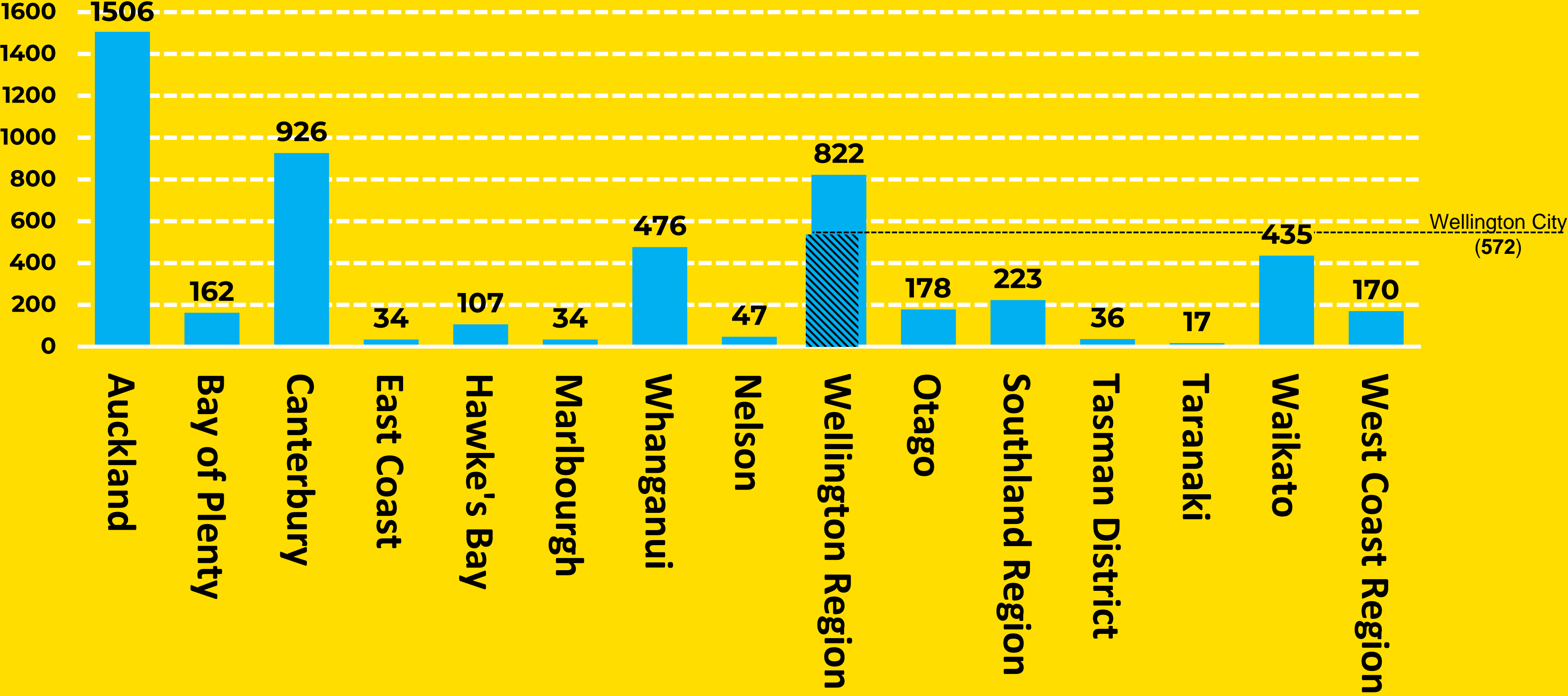


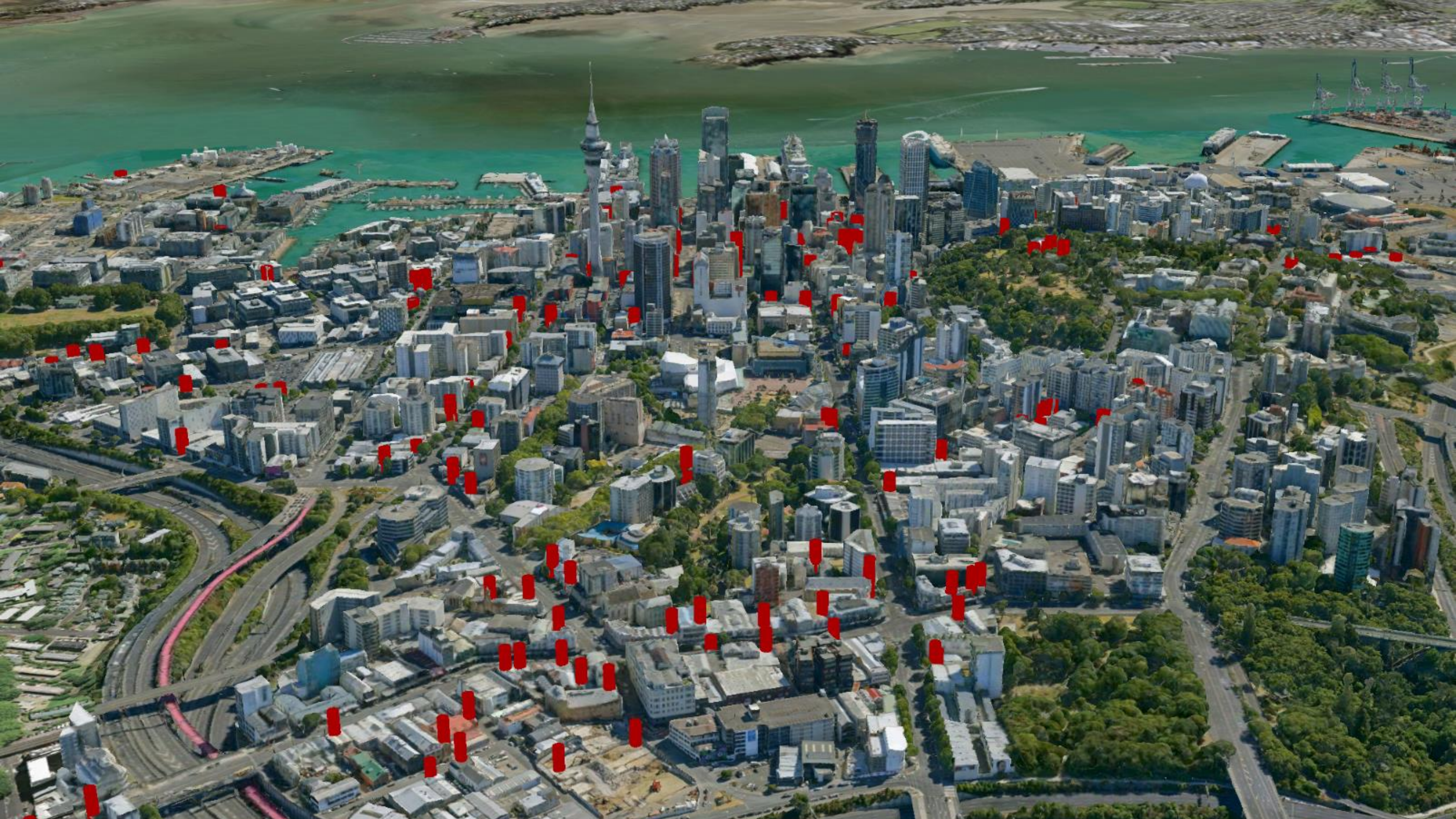
Earthquake-prone  
Residential Buildings



Earthquake-prone  
Council Buildings

# Earthquake Prone Buildings by Region





# Part 2.

## Council's Regulatory Role







# Legislative Environment

The Building (Earthquake-prone Buildings) Amendment Act 2016 introduced major changes to the way earthquake-prone buildings are identified and managed under the Building Act 2004, as a result of the Canterbury earthquake sequence of 2010/11.

The new legislation requires the Council to apply an EPB methodology established by MBIE to identify earthquake-prone buildings in the city. The methodology sets out guidelines for how engineers must carry out their assessments, including a requirement to state a building's rating as a percent of new building standard (NBS). The earthquake score of the lowest scoring element of the building is the earthquake rating for the building. The methodology provides that if a building is less than 34%NBS, it is earthquake-prone.

When a building is identified as earthquake-prone, this triggers obligations under the Act, including the requirement to display an EPB notice and to complete seismic work within a specified timeframe.

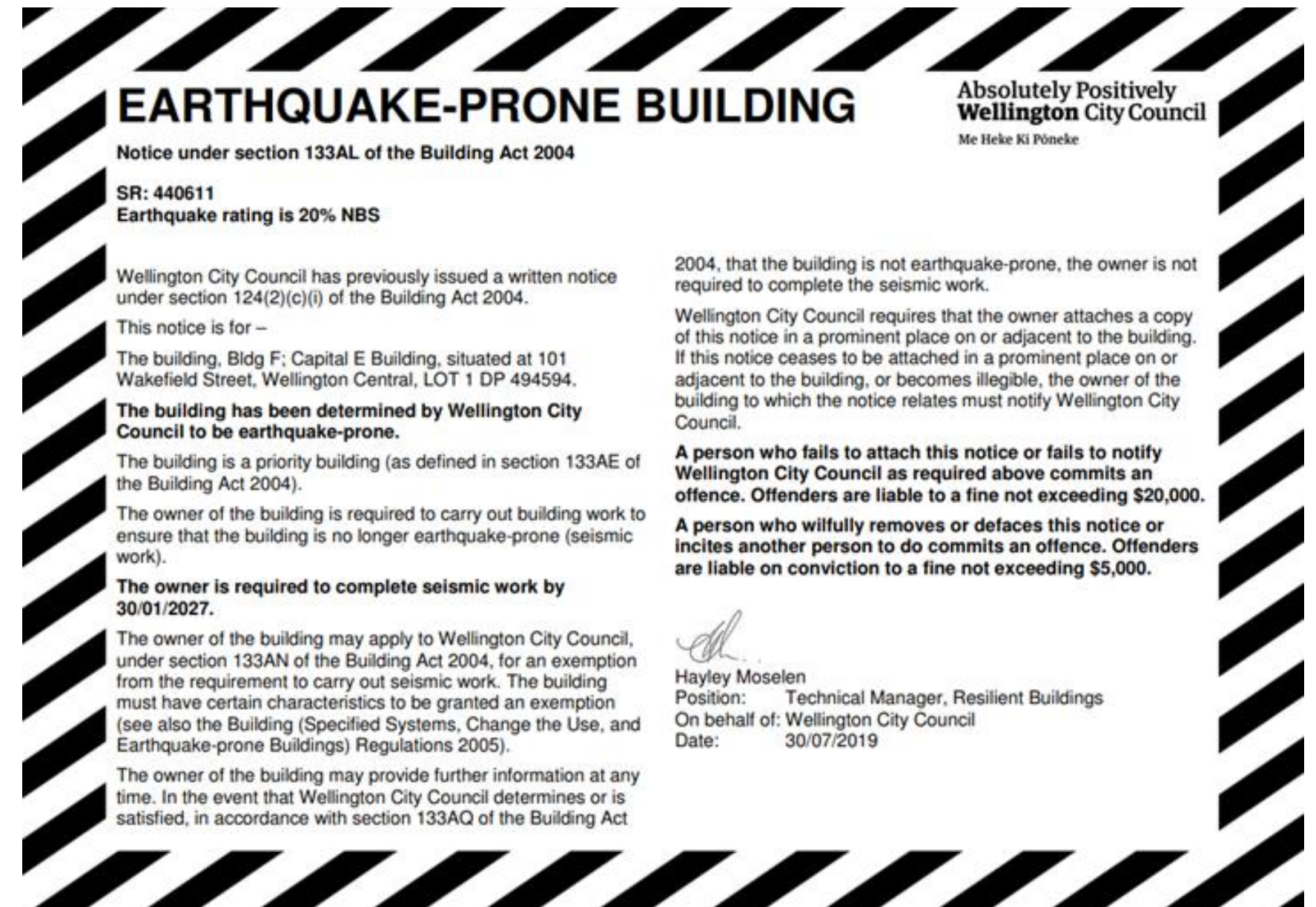
# The Building (Earthquake-prone Buildings) Amendment Act 2016

**The Building (Earthquake-prone Buildings) Amendment Act 2016 requires that owners of earthquake-prone buildings must complete seismic work on the building (or part of the building) before the deadline specified in the EPB notice – unless they have been granted an exemption. Seismic work may include demolition of a building.**

A building owner who fails to complete seismic work by the deadline commits an offence – and is liable, on conviction, to a fine of up to \$300,000 (or \$1.5 million in the case of a body corporate) (s133AU).

The Council may apply to the District Court for an order authorising it to carry out the seismic work and recover those costs from the building owner (s133AS).

The Council also has powers, at any time, to impose safety requirements on an earthquake-prone building (s133AR). (Which may lead to the building being closed)



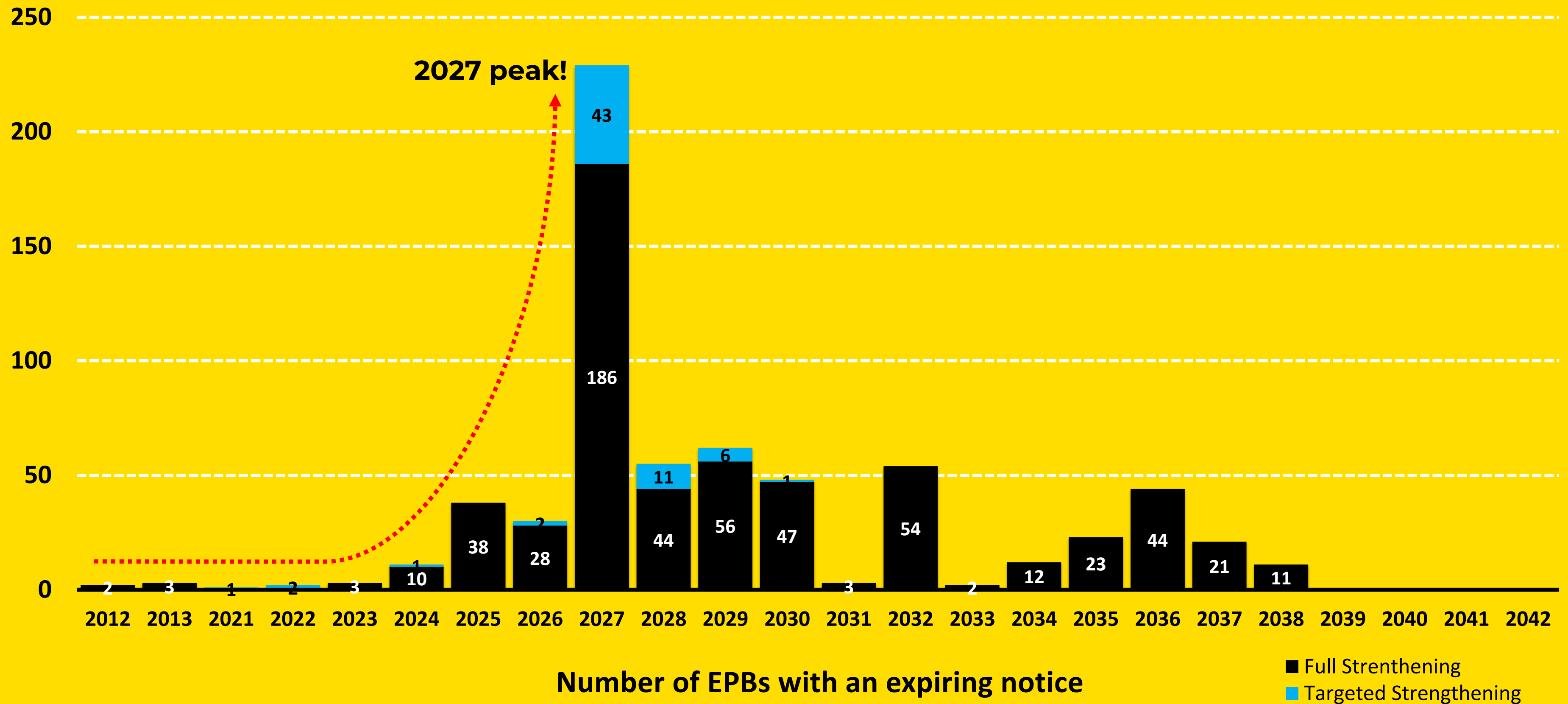
# WCC Case Management Approach

The Council provides a case management approach that is proportionate to current numbers of EPBs



# The Challenge

EPB numbers successfully managed down from 1000 to 572, but a significant peak of 229 are expiring in 2027 and more difficult to resolve.



# The Challenge (the 2027 peak)

The 'easy' buildings have already been resolved, but the 2027 peak (the year in which 229 notices expire) relates to more complex EPB. 186 require the whole building be strengthened, not just a portion (e.g. facade). Apartment buildings are often more complex due to the ownership structure, e.g. Body Corporates.

- **Total EPB:** 572 total
- **Expiring by end 2027:** 300
- **Buildings with expired notices:** 7
  - 25 Hutt Rd – Remaining URM wall
  - 117D Coutts St – Commercial
  - 280 Cuba St – Residential – low scale
  - 20 Egmont St – Apartments w Commercial - Heritage
  - 114 Adelaide Rd – Vacant - Heritage
  - 383 Broadway - Commercial
  - 12 Knigges Ave – Commercial
- **Apartment buildings:** 52 apartments, 980 residential units total
- **Next residential expiry:** 21 Marion St – Oct 2024 (Understood to be empty) followed by 9 College St – Jan 2025
- **Heritage buildings:** 124 total
- **Heritage apartment buildings:** 16 total

**Note:** Most of the EPBs are 1-3 storeys, indicating owners (willing or not) with limited access to finance and technical expertise (compared to willing and able owners who have made up most of the resolutions to date), and in some cases potentially losing both their home and livelihood (e.g. shop with attached home).

# Our toolbox

There are several tools and processes available to Council, to respond to the challenge of earthquake-prone buildings within Wellington City.



**EPB Steering  
Group**



**Compliance  
Guide**



**Resilient  
Buildings Model**



**MBIE Pilot**



**Council  
Approach**

# 1/.

## EPB Steering Group

**Steering Group:** Chief Planning Officer (SRO), General Counsel, Manager City Consenting & Compliance, Manager City Development

**Advisors:** Chief Advisor - CPO, Legal, Finance, Communications

### Aims

- Programme governance - oversight and direction to ensure Council's obligations are met in accordance with Compliance Guide and principles.
- Support SRO to make decisions on matters escalated to the steering group by the Manager Resilient Buildings.
- Advocate for and champion the project to key stakeholders.

# 2/.

## Compliance Guide

**Sets out the approach that the Council will take to exercise its obligations under the Building Act.**

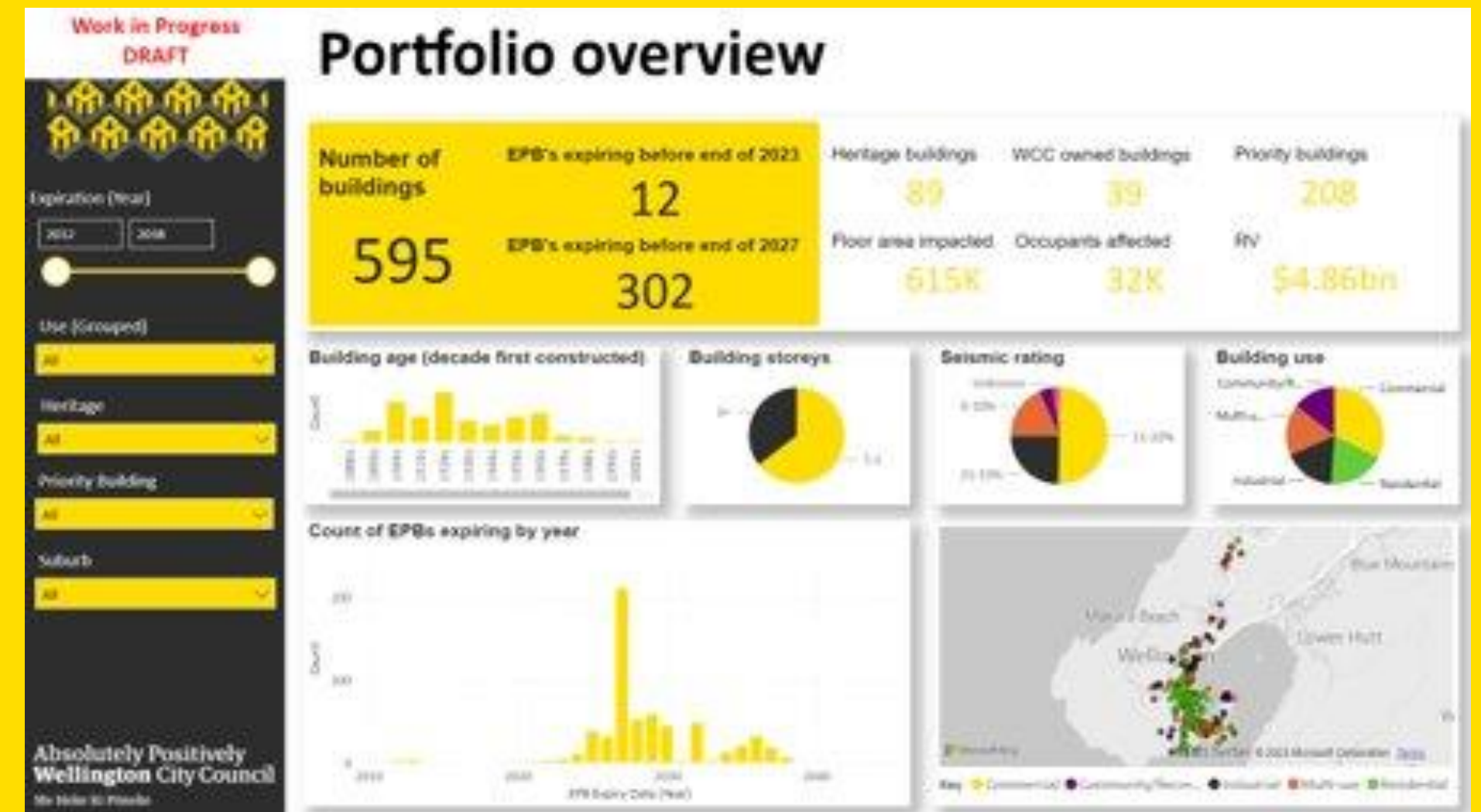
- Principle-led with key aims of proportionality, transparency, equity, and consistency.
- Health and Safety is at the centre of all processes.
- Distinguishes: safety actions and enforcement actions.
- Safety actions protect people in the vicinity of the building.
- Enforcement actions address and resolve non-compliance with an EPB notice.
- Maps a path to ensure a robust, consultative, and consistent decision-making process.

# 3/.

## Resilient Buildings Model

The Resilient Buildings Model is a prioritisation tool that:

- Looks at the macro costs for the city (Council and owners) of resolving earthquake-prone buildings.
- Supports prioritisation of earthquake-prone building stock to identify where greater effort should be directed.
- Provides overview of building level data.
- Includes a scenario builder
- Informs management approach to EPB and engagement with central government
- Is being refined and therefore not yet in production.



The Resilient Buildings Model example (numbers use sample data and are for demonstration purposes only).



# 4/.

## **MBIE Pilot**

### **MBIE-led support package to building owners**

- Intensive case management approach
- Involvement with body-corporates, meetings, consultants, identifying and working to remove barriers
- Professional services , engineering advice, legal, mediation, wellness
- Direction to funding through Kāinga Ora (Residential Earthquake-prone Building Financial Assistance Scheme)

# 5/.

## **Council Approach**

**The Resilient Buildings Team has been preparing for this challenge, with a number of programmes to compare with:**

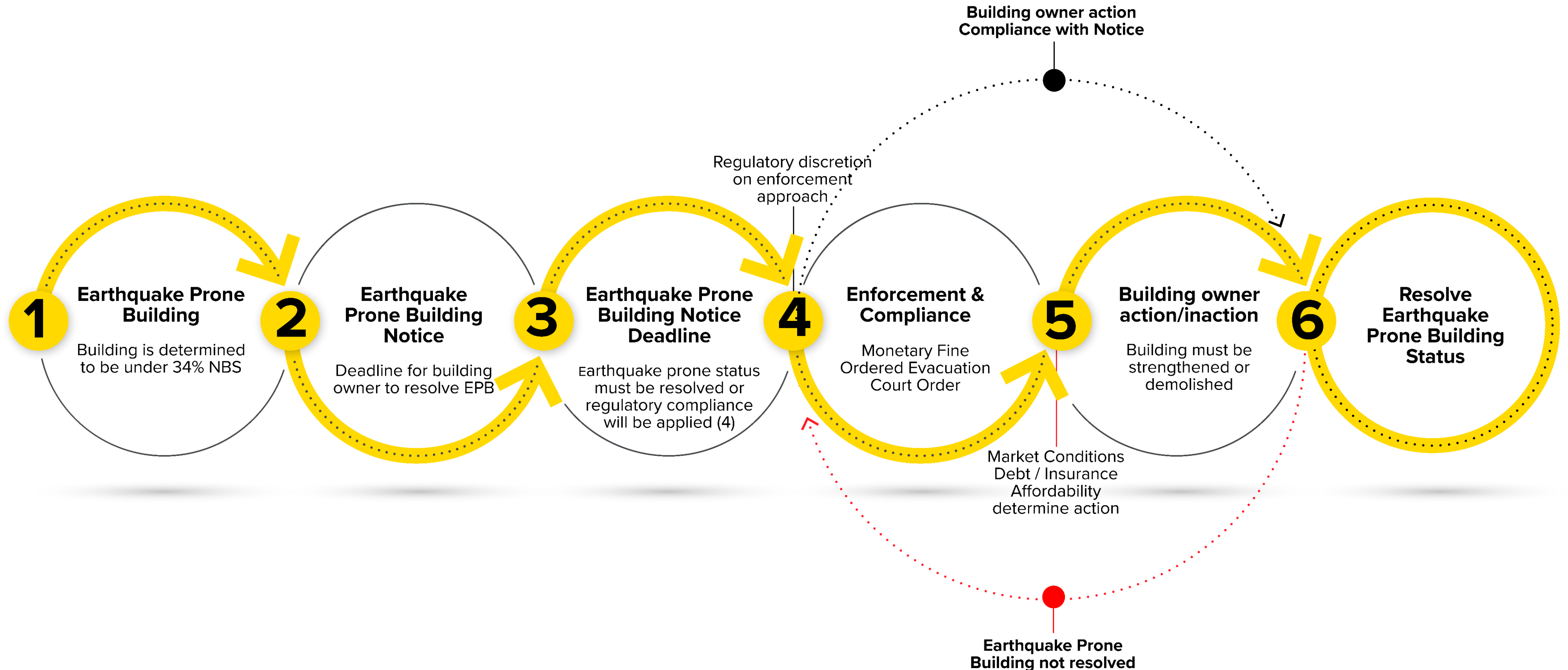
- The Unreinforced Masonry programme
- An MBIE-run pilot to support building owners
- Individual buildings

**Analysis and modeling of different approaches to effort undertaken: the Regulator, the Case Manager**

# Regulatory Process

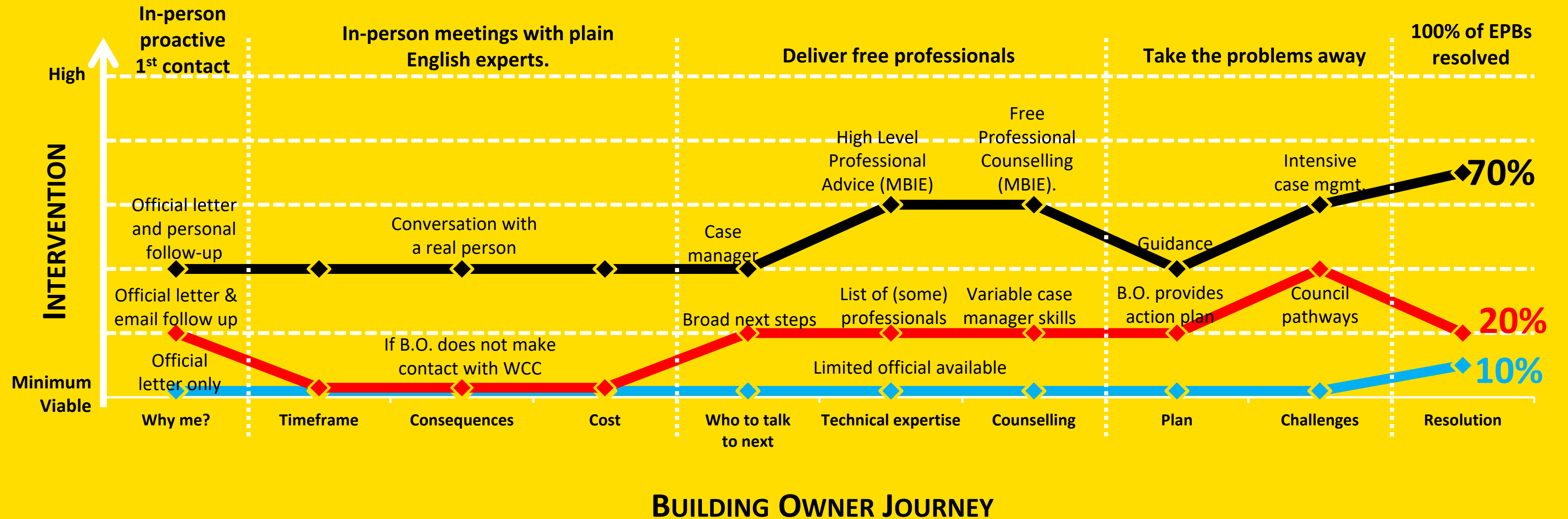
The regulatory process is based on our obligations under the Building Act and the tools currently available through a regulatory and enforcement model.

Council can apply discretion when determining an appropriate enforcement method if a building owner fails to meet EPB deadlines.



# Scenario Modelling.

**The current effort on EPBs will not be enough for the future.**



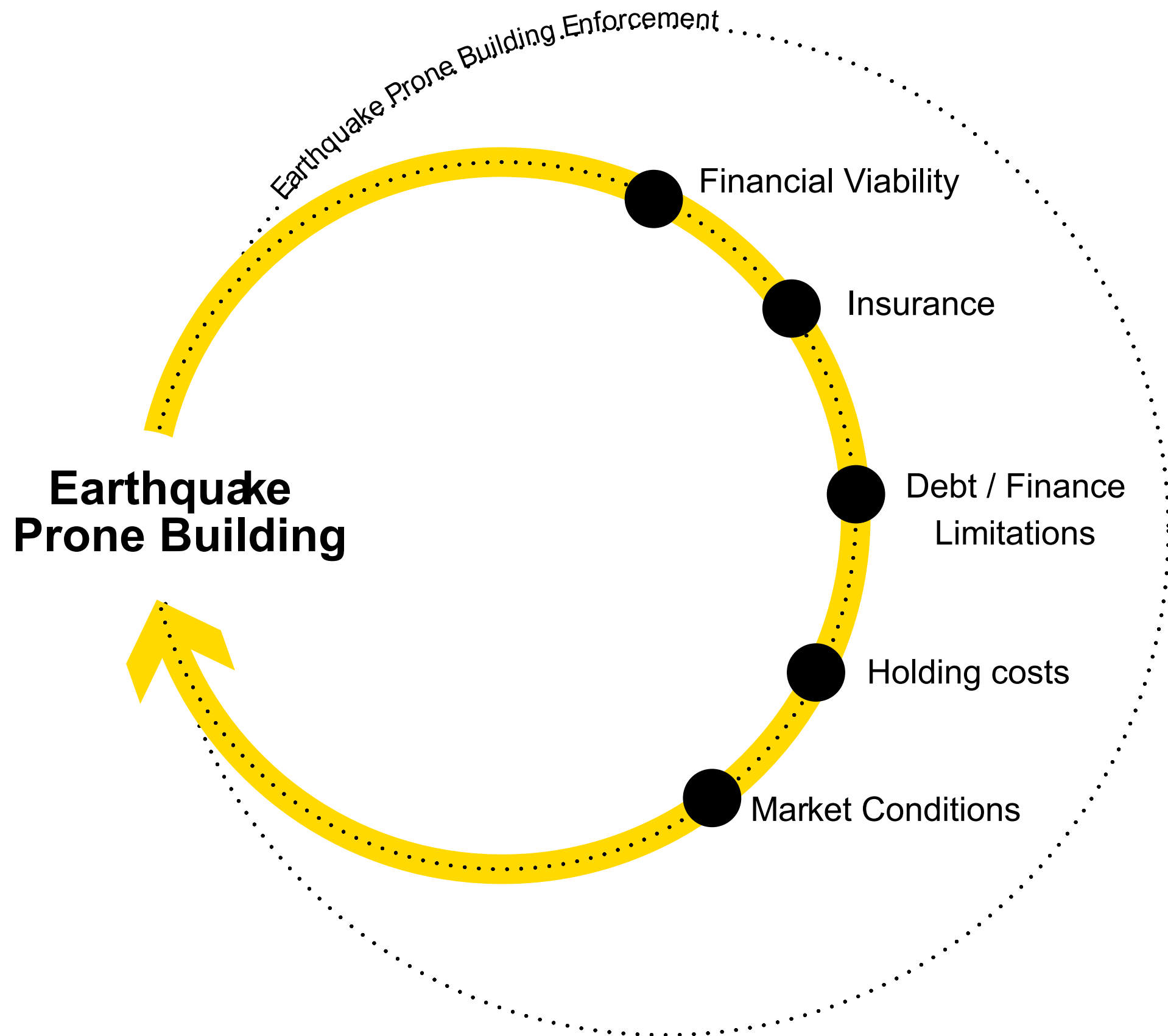
- Scenarios 1: Minimum Viable Effort →
- Scenario 2: Case Management, Current Effort →
- Scenario 3: Case Management, Increased Effort →

# The Regulator Approach

**The regulator approach is an enforcement approach and generally has the lowest compliance for EPB**

- EPB notice issued, with expectation of voluntary compliance (incentivised by enforcement penalties).
- Most resolved cases to date = owners willing and able to access financial/ technical resources.
- But - majority of approx. 300 EPBs expiring before Jan 2028 are 1-3 storey buildings, indicates single owner (Mum & Dad) investors with limited access to financial/ technical resources, or
- Buildings with diverse ownership structures, such as body corporates – apartments.
- Failure rate estimate informed by Unreinforced Masonry (URM) strengthening programme which, despite being the highest risk area for EPBs, showed building owners making very little progress under their own effort.
- Most likely action resulting from this option: 'Wait and see' if the owner sells to someone else who can comply in time.

# Challenges for Building Owners



A number of barriers to resolving EPB status. Ultimately it comes down to affordability:

- The community cannot afford it (owners)
- Councils cannot afford it

**Result:** Closure by order (red sticker)

**Result:** Empty buildings and city blight.

# The complex challenge

**The complexity of balancing safety measures with social and economic impacts is the challenge.**

- Resources are required that extend beyond the scope allowed by existing legislation, the Ministry of Business, Innovation, and Employment (MBIE) methodology, and council capacity to fund.
- Penalty funding as an enforcement incentive to owners, or to balance costs incurred by councils, compounds the financial burden, while not addressing the core issue of safety.
- Closure of EPBs and external hoardings meets council obligations as regulator and increases the immediate safety of the EPB environment, however the associated social and economic costs for the city are significant. It also does not guarantee the building will be strengthened so the safety risk may remain.
- Closure of buildings contributes to social distress, financial loss for property owners, home displacement, and broader implications for the city, including economic repression, disruptions to transport networks, and a reduction in available housing stock.

**This underscores the pressing need for innovative and scalable solutions and collaborative efforts to address the systemic challenges of affordability and resource allocation, recognising the substantial social impact of these decisions.**

# Part 3.

## Council as a Building Owner



# Seismic Assessment

**A seismic assessment is a process whereby an engineer looks to determine how earthquake loads are resisted by an existing structure (effectively a reverse engineering exercise).**

Seismic assessments can take two forms:

**1. Initial Seismic Assessment (referred to as ISA or IEP)**

ISAs provide a very preliminary understanding of the potential seismic vulnerabilities and risks with a building structure.

**2. Detailed Seismic Assessment (DSA)**

DSAs are a thorough and more conclusive analysis of how seismic loads are expected to transfer through the building structure.

**Note:** Seismic assessments rely upon professional judgement, therefore peer reviews can help to identify and test assumptions that could impact the accuracy of the seismic evaluation. MBIE has prescribed engineering assessment guidelines which must be used for all assessments for determining whether a building is earthquake-prone.





# Council as a Building Owner

**This section responds to Council's role as a building owner.**

- Basis for seismic assessments
- Seismic assessment key steps
- Process for seismic assessments
- Civic / Venues Portfolio
- City Housing / Housing Upgrade Programme (HUP2)


# Basis for seismic assessments

## Triggers for Council to commission a seismic assessment

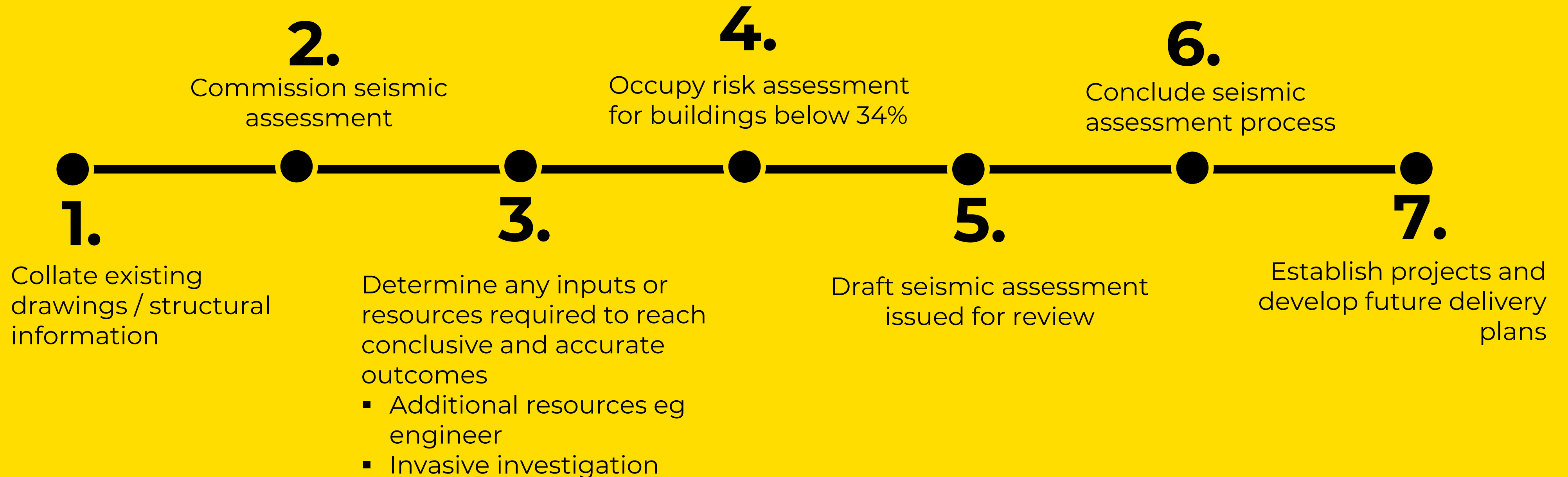
- Regulator notification of buildings that are potentially earthquake-prone, e.g. Michael Fowler Centre.
- Building due diligence / substantial future investment planned, e.g. Opera House.
- Conditions observed that warrant review, e.g. City Gallery.

## Buildings that require an assessment

- Commercial buildings generally.
- Residential buildings that are at least 2-storeys and contain 3 or more household units.

 **Note:** Civil structures that are not integral to the structure of a building (e.g. tunnels, bridges, wharfs) do not require assessment.

# Key Steps for assessment



# Occupancy Risk Assessment.

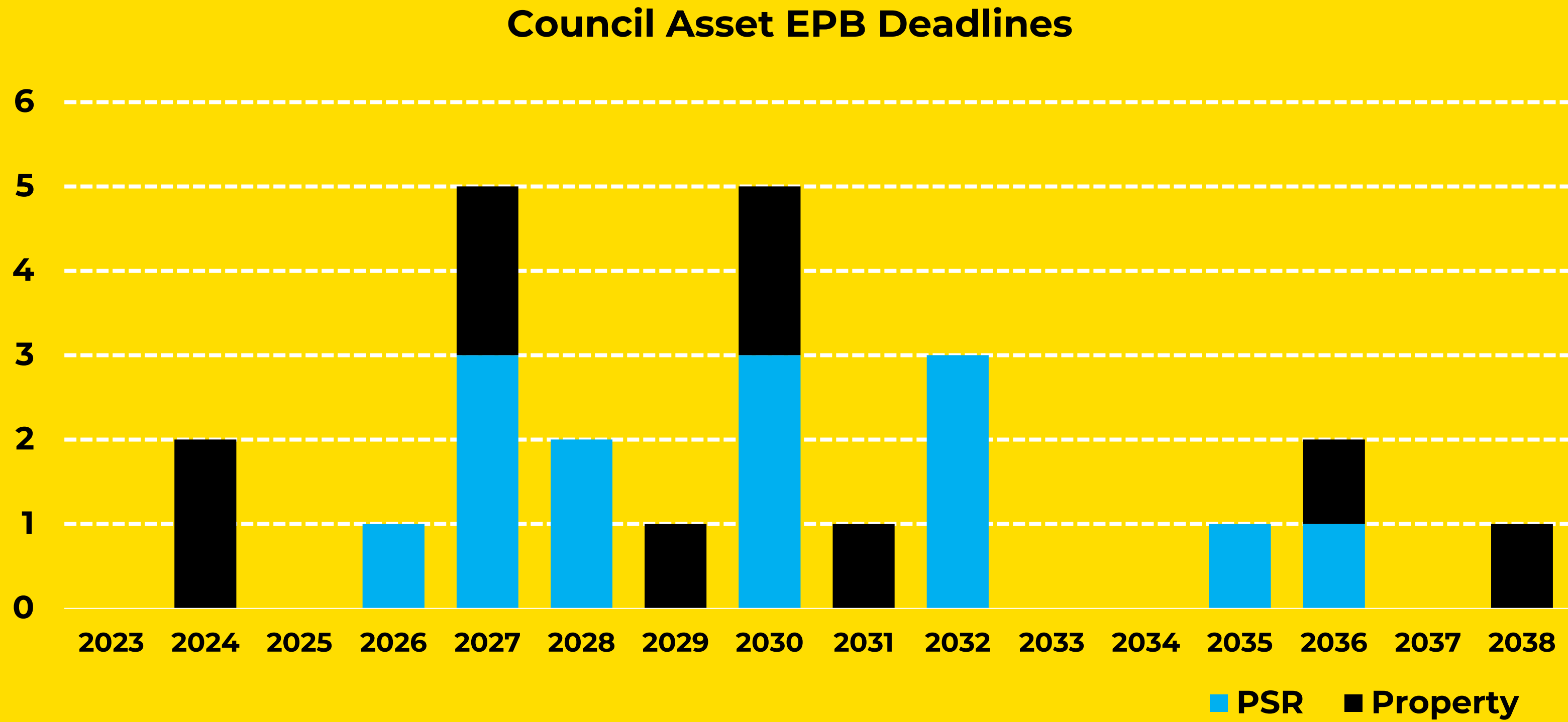
**In 2022, MBIE released seismic risk guidance to assist with occupancy decision-making in the circumstance that buildings are deemed earthquake-prone.**

MBIE's advice builds upon a BRANZ decision framework for council-owned earthquake-prone buildings developed in 2021. These frameworks provide a qualitative risk evaluation that assesses the current seismic risk relative to the impacts of closure of a building, i.e. balances the life safety risk exposure against the consequences of closure.

While a low %NBS rating does indicate a heightened life safety risk in the event that an earthquake occurs, it does not mean that the building is imminently dangerous. In most cases, seismically vulnerable buildings can be occupied while remediation is planned.

**Note:** there is no legal requirement for a landlord to close a building based solely on a low %NBS rating, unless the Council has imposed safety requirements. Compared to most business-as-usual risks, earthquakes are low probability.

# Council Asset Earthquake-prone Deadlines



# Council EQP Buildings



These buildings are recorded by the Regulator, as being either suspected or confirmed deemed earthquake-prone.

Deadline	Building	Status / Comments
2024	Civic Administration Building	Delivery planning underway. Allocation in the 2024/25 budget for demolition.
	Wellington Town Hall	Strengthening underway. Tracking to meet EQP requirements by deadline.
2026	Shed 1	Awaiting Business Case approval to proceed with work.
2027	Waterworks Building	Work still to be scoped.
	Botanic Gardens Old Stables Shed	Work still to be scoped.
	Former Capital E Building	Funding to progress remediation being requested as a part of the LTP.
	Former Johnsonville Flats*	Divestment planning underway.
	Cardall St Sub Station	Remediation planning underway as part of HUP2.
2028	Kilbirnie Recreation Centre	Funding to strengthen in LTP budget.
	Botanic Gardens Tool Shed & Toilet Block (Shed #2)	Remediation approach still to be scoped.
2029	Michael Fowler Centre	Feasibility and option analysis underway (note: will be informed by Te Ngakau Development Plan). Planned to be complete within 12 months and in readiness for the 2027 LTP
2030	Kapi Mana Bridge Club Building	Prone only due to issue with external cladding. Remedial options being assessed.
	Berhampore Nursery - Main Building (Glasshouse #3)	Glass removed and reclad. Requires new assessment to update rating.
	Khandallah Summer Pool - Ticket Office	To be addressed as part of Khandallah Pool LTP Project
	Bond Store	Feasibility and option analysis underway (note: will be informed by Te Ngakau Development Plan). Design / planning for targeted seismic health and safety underway (to be delivered by next financial year).
	Embassy Theatre*	Seismic assessment underway.
2031	Opera House	Feasibility and option analysis underway (note: will be informed by Te Ngakau Development Plan). Design / planning for targeted seismic health and safety underway (to be delivered this financial year). Planned to be complete within 12 months and in readiness for the 2027 LTP
2032	Vogelmorn Bowling Club Building B	Remediation approach still to be scoped.
	Bait House - Island Bay Marine Education Centre	Remediation approach scoped. Delivery to be scheduled around lease renewal.
	Botanic Gardens Mess & Washroom & Potting Shed	Remediation approach still to be scoped
2034+	Frank Kitts Park Carpark	To be addressed as part of Fale Malae.
	Wellington Central Library	Strengthening underway. Tracking to meet EQP requirements by deadline.
	Khandallah Summer Pool	To be addressed as part of Khandallah Pool LTP Project
	Municipal Office Building	Delivery planning underway. Allocation in the 2024/25 budget for demolition.

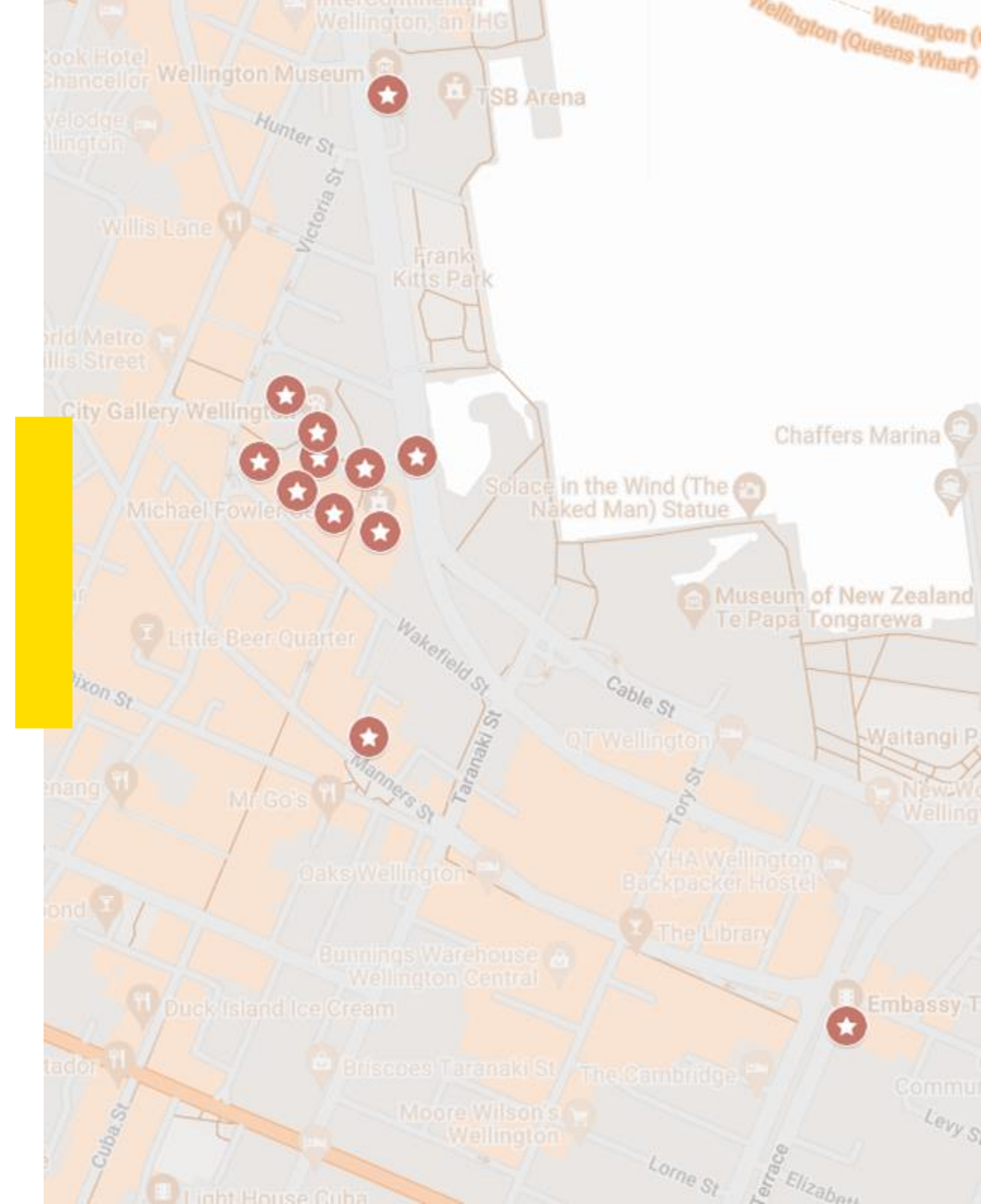
# Te Ngākau / Venues

**Undertaking necessary investigative works, due diligence and will revert with options analysis, preliminary/high level costings and recommendations for earthquake-prone venues within 12 months and in readiness for the 2027 LTP**

## **Seismic assessments underway for:**

- Te Ngākau basement.
- City to Sea bridge.
- City Gallery.

**Note:** All other buildings in Te Ngākau precinct have up-to-date seismic assessments or seismic remedial works planned.

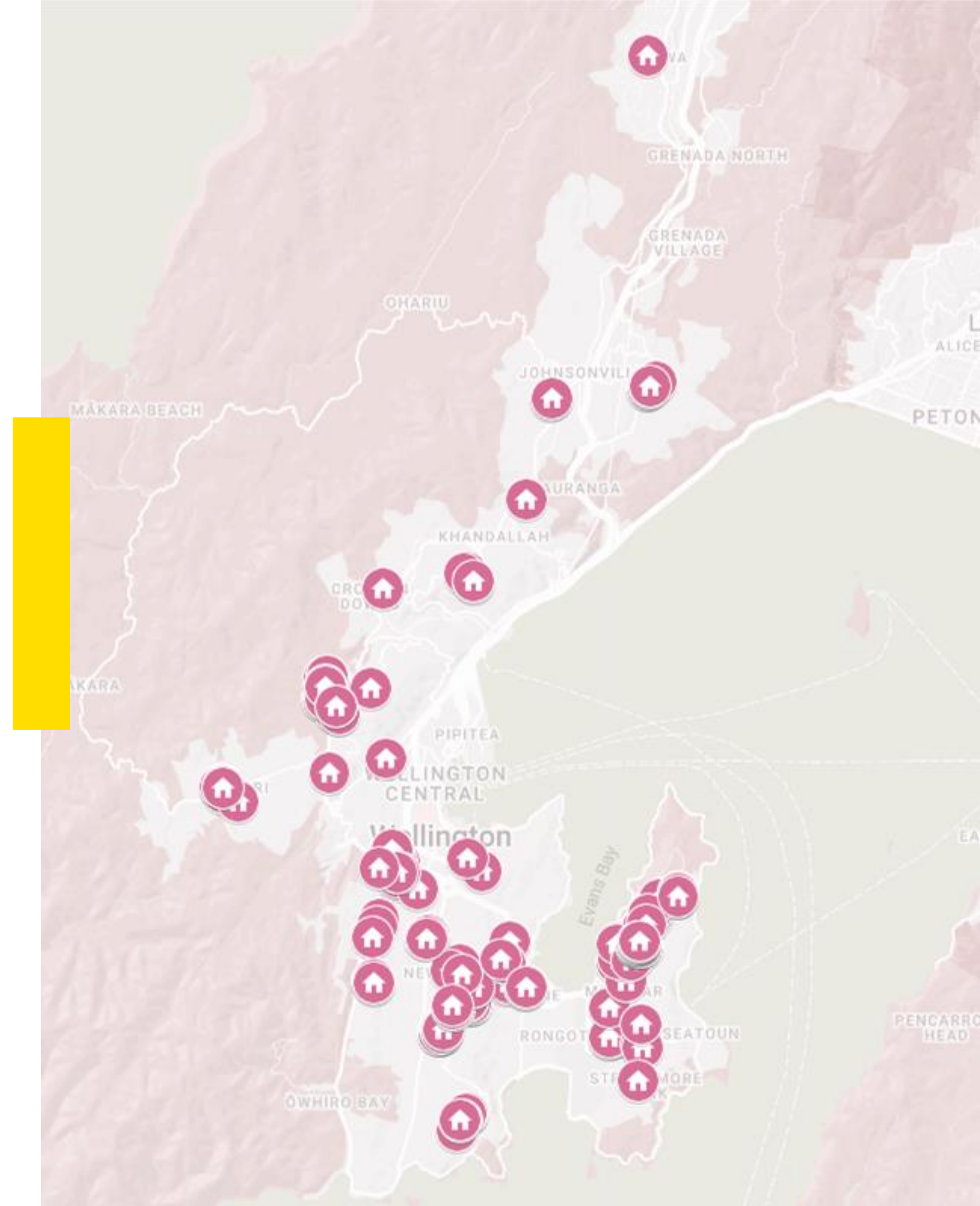


# City Housing Upgrade Programme (HUP2)

**HUP2 planning underway which includes commissioning seismic assessments for all City Housing buildings:**

- ~50% of the portfolio have current assessments\*
- Remaining assessments scheduled for completion by end of this financial year (approx. 60).
- Housing upgrade programme scheduled to conclude 2036.

**Note:** For residential buildings that are at least 2-storeys and contain 3 or more household units.





# Part 4.

## Council as an Advocate



# Advocacy Opportunities.

**Given the total costs and resourcing involved to resolve buildings within their current timeframes, balancing the life safety risk and other impacts on owners & occupants, and resultant value of properties, a series of options for the Council to take an advocacy role have been considered.** This includes:

- **Leveraging our Capital City status and opportunity to include in a City Deal.**  
Wellington's ability to manage its seismic (and other resilience) risks needs to be consistent with our role in developing a vibrant economy that attracts skills in a competitive environment and that can supply the services and employment opportunities that our economy needs. Initial analysis suggests the seismic rules are set high relative to other risks we routinely face in our daily routine.
- **Leveraging the 'national problem' by using LGNZ and/or SOLGM as advocacy partners**

# Advocacy Opportunities.

## Comprehensive System Review

1. An independent review of the Earthquake-prone Buildings system to ensure it is fit for purpose based on real life experience to date.

Focus to include:

- a) Ensure the appropriate balance is struck between the risk an EPB presents to occupants and adjoining buildings/area, and the social and economic impact of enforcement.
- b) Ensure the approach to managing risk related to EPBs is proportionate to the way we manage other risks.
- c) Ensure the cost of strengthening is proportionate to the resulting value of the building/property and social and economic impact.

## Extension Advocacy

Advocate to Government for a three-year extension to EPB notices, facilitating both; an independent system review, and thorough analysis of available options to Council while review is undertaken.

## Kāinga Ora Scheme Adjustments

Explore changes to the Kāinga Ora scheme.

1. increasing the amount available per owner (current max \$250k).
2. Evaluate the removal of the insurance requirement, possibly recognizing EQC Cover as a suitable risk underwriter for apartments qualifying for \$300k.

## Extending MBIE Pilot Scheme

Extension of MBIE pilot scheme to aid councils in providing case management support services.

## Timeframe & Funding Re-evaluation

1. Advise government how best to extend and spread the timeframes for earthquake-prone buildings. (Relative to risk profile, addressing highest risks first)
2. Quantify the level and type of financial support required e.g. grants, loans, insurance, guarantees.