

Buildings Seismic Risk Reduction

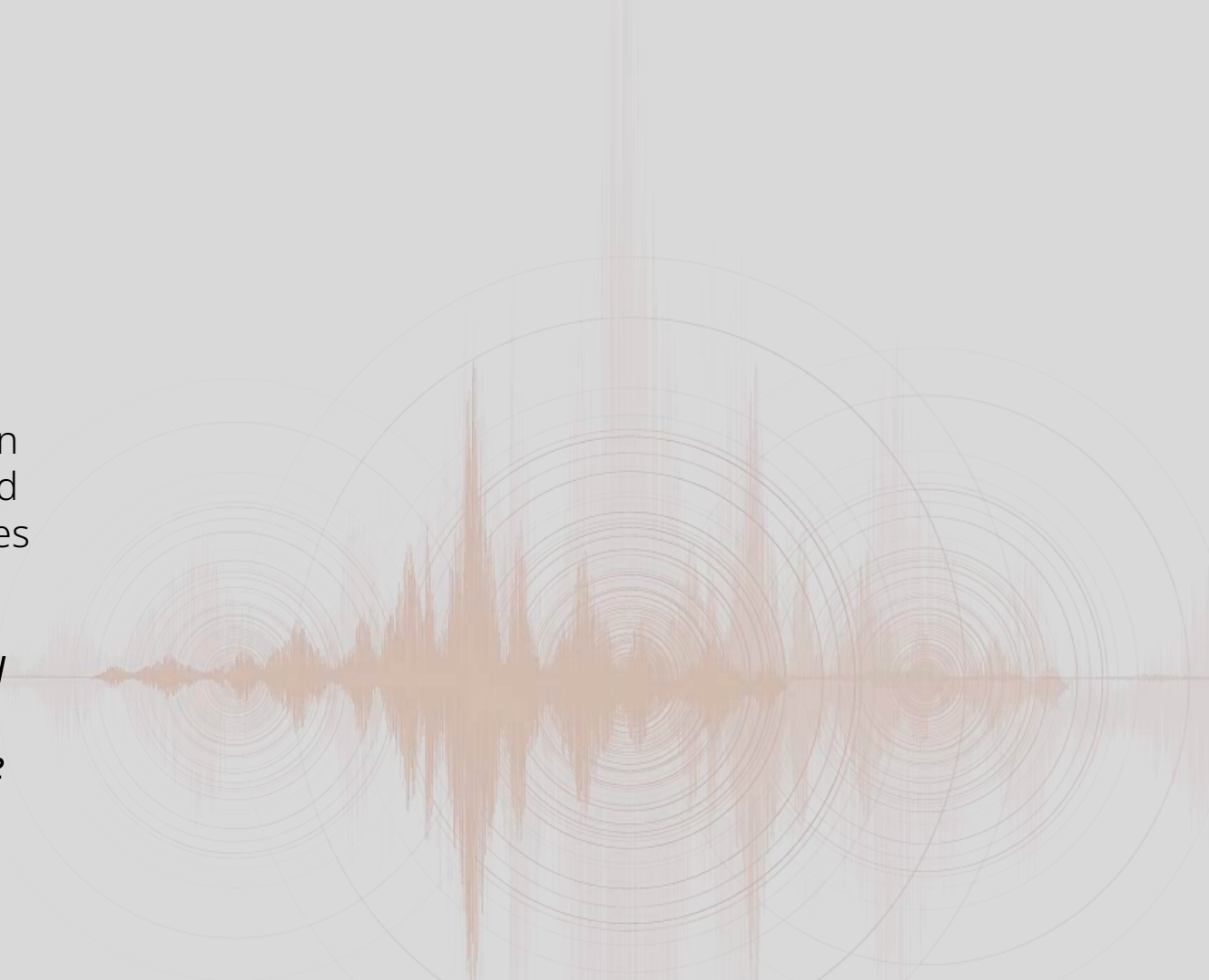
ACTION PLAN

June 2, 2026

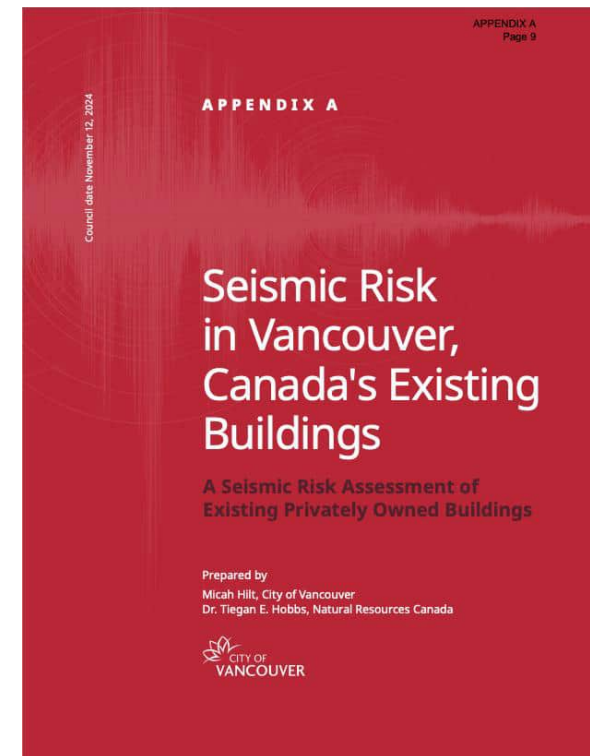
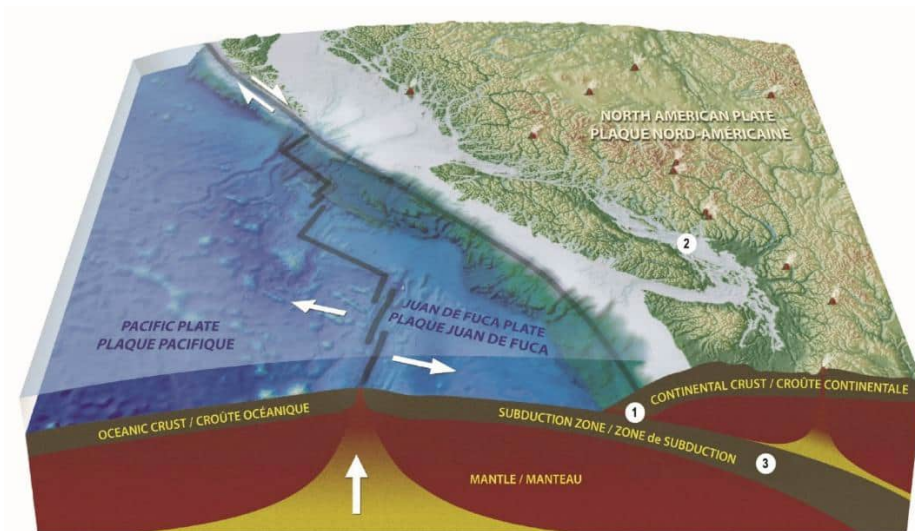
We acknowledge with respect and gratitude that this report was produced on the traditional, unceded territories of the xʷməθkʷəy̓ əm (Musqueam), Sḵwx̱wú7mesh (Squamish) and səliłwətał (Tsleil-Waututh) Nations.

The land known as the City of Vancouver today has been stewarded by these Peoples since time immemorial, and their unique relations, Title, and rights in these territories remain intact.

We additionally acknowledge that these Nations have oral and written traditions describing our region's seismic hazard dating back hundreds of years prior to the inclusion of seismic forces in our building codes and planning.



Models estimate a 1 in 5 chance of a very strong earthquake in the next 50 years.



Modelling of a M7.2 Georgia Strait Planning Scenario Earthquake

VANCOUVER'S SEISMIC RISK



6,080

heavily damaged buildings, leading to:

230,520

residents disrupted & displaced over 3 months

As many as

1,370

severe injuries & fatalities

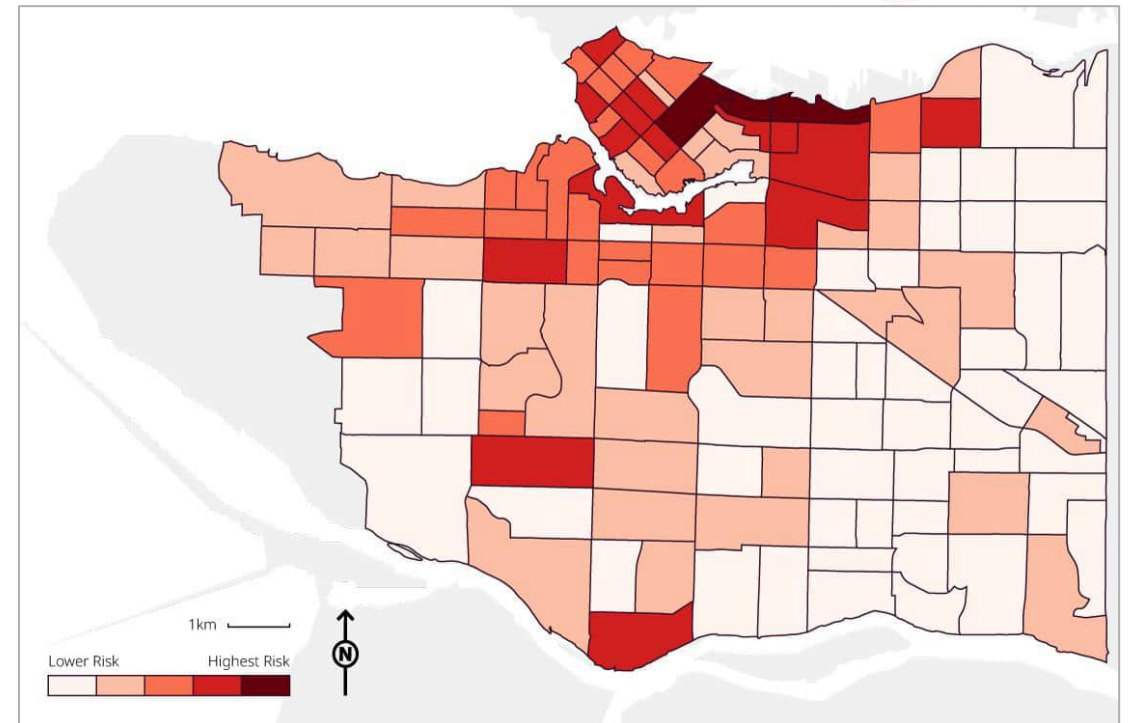
365,340

daytime occupants disrupted & displaced over 3 months

Up to

\$17B

in direct financial losses

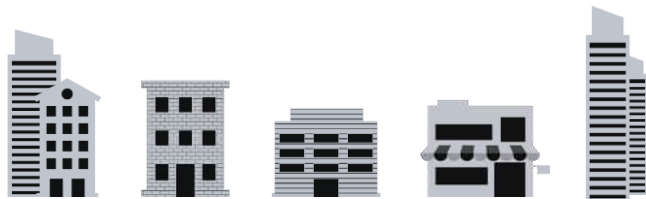


Relative Seismic Risk Map, City of Vancouver Seismic Risk Assessment (2024). For details on modelling and mapping, see Appendix A.

Modelling of a M7.2 Georgia Strait Planning Scenario Earthquake

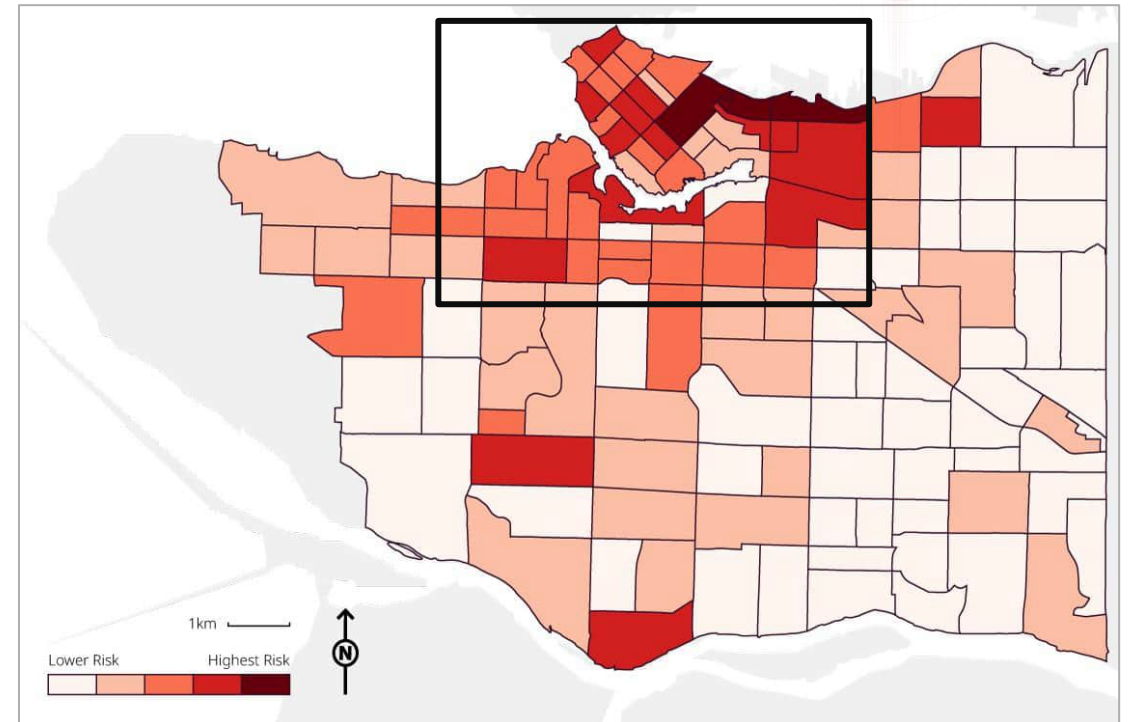
VANCOUVER'S SEISMIC RISK

80% of citywide risk is driven by 10% of buildings



65% of citywide risk is concentrated in 6 neighbourhoods

Highest-risk areas contain nearly 70% renters, of which nearly 20% are low-income, over 10% seniors, 30% identify as visible minorities, and 4% are Indigenous Peoples



Relative Seismic Risk Map, City of Vancouver Seismic Risk Assessment (2024). For details on modelling and mapping, see Appendix A.

Earthquake Consequences



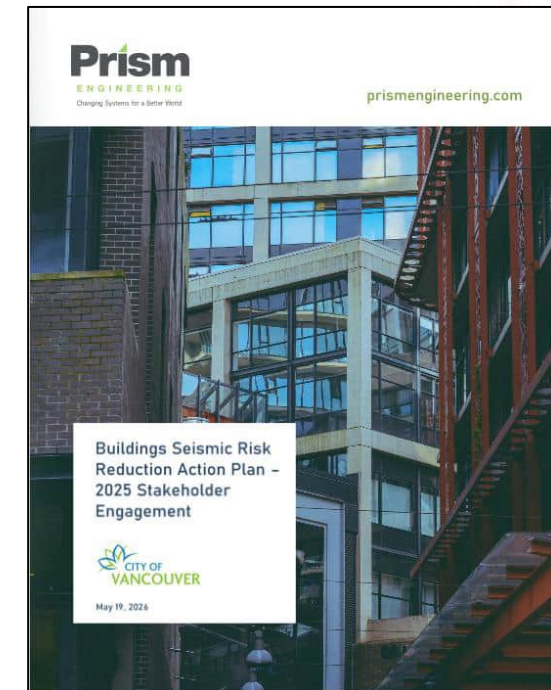
Christchurch, New Zealand, 2011. Cordoned off downtown area.



Michael Kissinger, 2019. VanSlam earthquake exercise.

Engagement – What We Heard

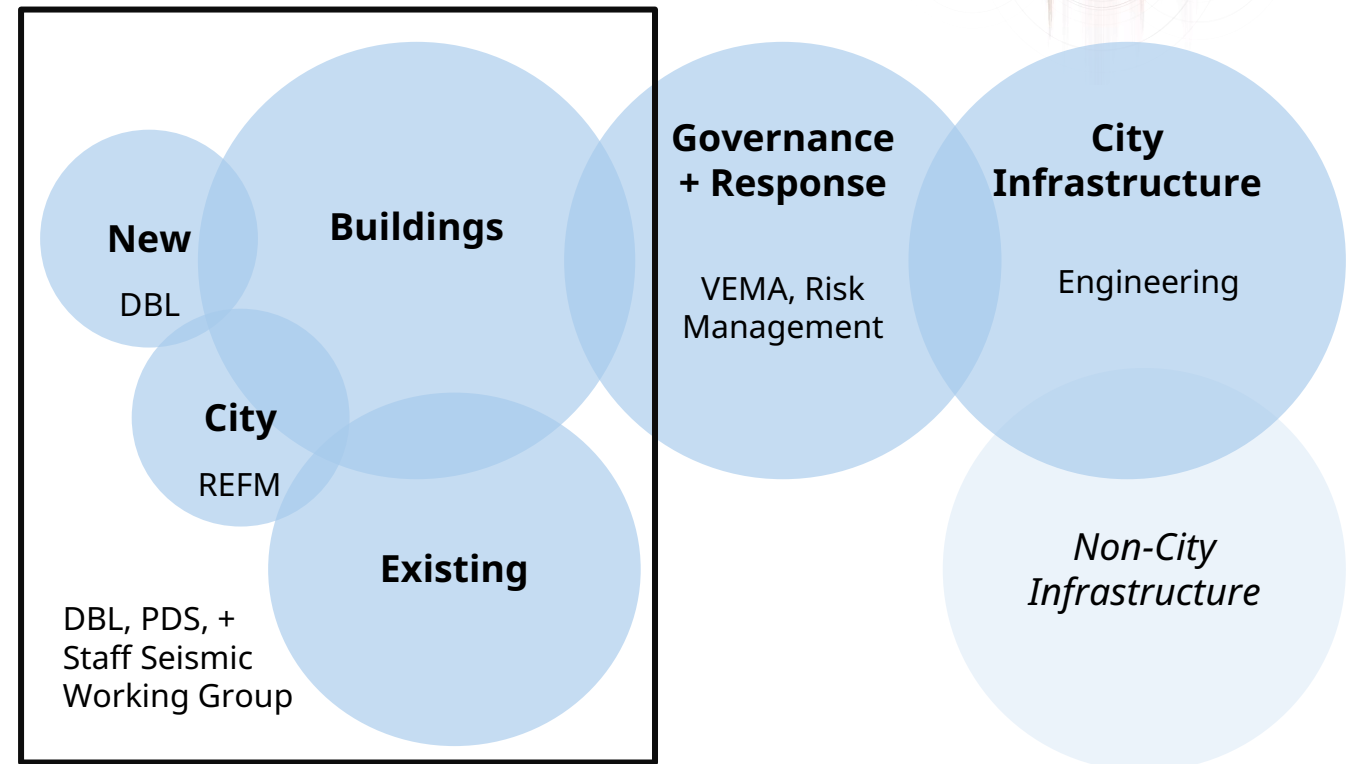
- ***Broad support amongst interest holders*** for seismic risk reduction + City action on risk reduction
- ***Proactive engagement and long-term involvement*** in the development of policies and programs is critical
- Cost, financing approaches, tenant protections, and the challenges in triggered upgrades are ***concerns***
- ***Standards that clarify*** phased, step-wise upgrades, aligned to building capital planning, are needed to enable action



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Complimentary City Work

- The City is working across all areas of **seismic risk management**
- The **Staff Seismic Working Group** consists of members across many departments
- **The plan is focused on existing buildings** and supports work on new and City buildings as well as response planning.
- **Progress is being made**, but the work is complex, costly, and there are many priorities competing for funding



**Buildings Seismic Risk Reduction
Action Plan**

Why We Developed This Action Plan

- Risk reduction is challenging, generational work. **Significant progress is possible.**
- Focused approach on **the City's role in this work**, leveraging existing tools to accelerate action
- Progress and early results **catalyze voluntary upgrades and senior government action**
- **Risk awareness and partnership** are critical to reducing risk and sustaining action over time
- A **balanced approach** considers affordability, cost, and tenant displacement alongside risk reduction



Overview: A Five-Year Action Plan

- To guide the development of policies and programs, staff will convene a **technical working group**
- Work continues with the development of an at-risk building **inventory** and a **voluntary upgrade program**
- In parallel, staff will explore **redevelopment**, improvements to **current regulation**, and the **impacts of risk reduction** on tenants and small businesses
- While risk reduction work continues, staff will support **response and recovery planning** that supports a quick recovery



Upgrade elements from the seismic retrofit of 515 W. Tenth Street

ACTION 1

Establish a *Seismic Risk Reduction Technical Working Group*

- Engineering experts, interest holder representatives, and community members
- Support staff to develop actions into policies and programs
- Similar groups in other cities were instrumental in durable + achievable policies and plans
- Builds trust for long-term risk reduction and creates flexibility to make changes in policies

BUILDINGS SEISMIC RISK REDUCTION ACTION PLAN



City of San Francisco. Working group supporting the San Francisco's Earthquake Safety Implementation Program, 2013.

ACTION 2

Develop an ***inventory of at-risk buildings*** through seismic screening

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ACTION PLAN

- The inventory uses external visual assessment and building records reviews to rate each building
- Improves collective risk awareness
- Promotes voluntary upgrades, clarifies priorities, and promotes senior government action
- Enhances post-earthquake response and recovery
- Methods, timeline, and release approach to be developed with CSRRC



Washington Trust for Historic Preservation, 2024. Volunteers gathered for a sample building survey, as part of the inventory process in Everett, WA.

ACTION 3

Develop a ***voluntary seismic retrofit program*** that supports incremental retrofits and promotes action

- Complements inventory findings with costed, incremental upgrade standards
- Seismic upgrades can be integrated with planned building improvements, minimizing costs and incrementally achieving risk reduction
- Shifts from all-or-nothing thinking to advancing gradual safety improvements
- ***Incentives*** improve uptake of upgrades. City-building ***upgrade pilots*** demonstrate retrofit feasibility and sharpen the case for senior government support while improving City response

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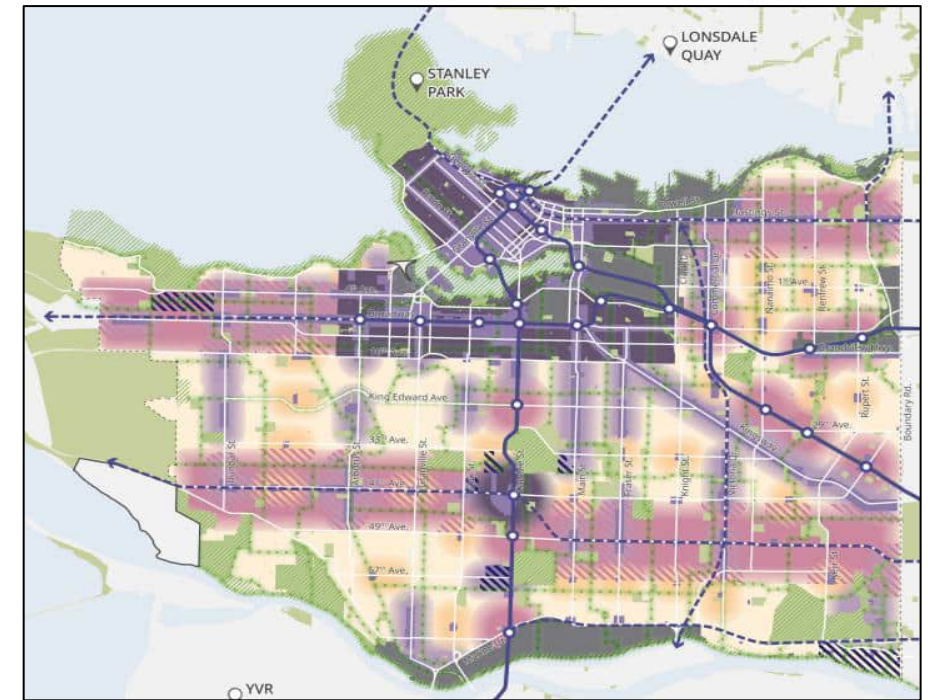
Ausenco. Supporting Analysis for Seismic Risk Reduction Policy Development, 2026. Upgrade details for a wood MURB.

ACTION 4

Explore ***redevelopment*** as a risk reduction approach

- Each building replaced with a new building through redevelopment improves public safety reduces post-earthquake displacement
- While risk is reduced with each replacement, redevelopment can cause tenant displacement
- Integrating risk assessment and inventory findings into the City's land use planning tools can carefully promote redevelopment on some sites
- Redevelopment-based risk reduction requires prioritising affordability and protections for tenants in seismically at-risk buildings.

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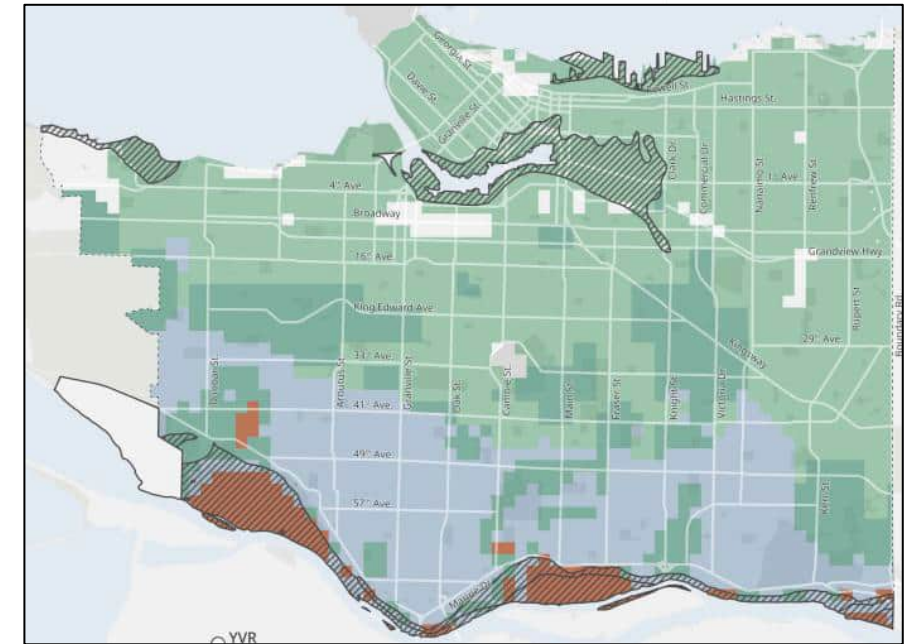
Official Development Plan, Urban Structure Strategy.

ACTION 5

Identify ***building regulatory refinements*** that advance risk reduction and improve new building performance

- Renovation-triggered upgrades were identified as a concern amongst interest holders
- Streamlined regulation reduces risk by promoting upgrades
- Improved tracking of building risk and upgrades increase collaboration between the City and owners
- New buildings are designed for life safety, not repairability.
- Staff will work with industry to identify opportunities that advance recoverability in new building design.

BUILDINGS SEISMIC RISK REDUCTION ACTION PLAN

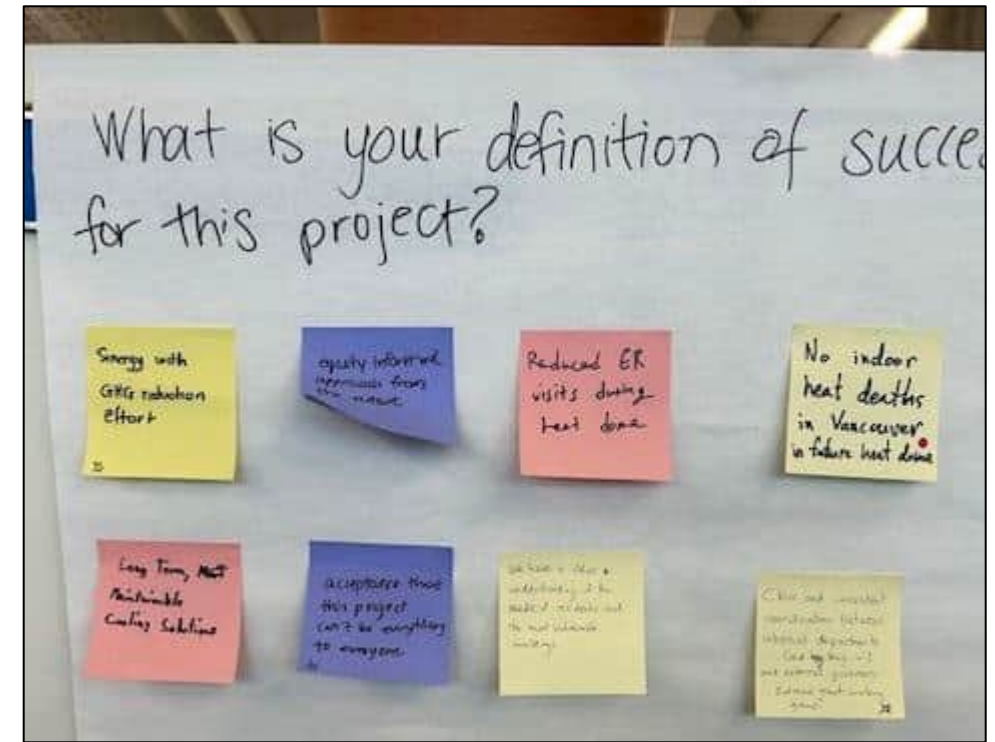


Official Development Plan, Seismic Hazard Map.

ACTION 6

Identify and reduce the impacts of seismic risk and building upgrades on ***disproportionately impacted populations***

- Many renters and small businesses face disproportionate risk and significant, additional burdens to recovery and from building upgrades
- Staff will identify opportunities to reduce the impacts of seismic upgrades on renters and small businesses
- SRO buildings are amongst the city's oldest and highest-risk buildings
- Inventory data will support ongoing partnerships with senior government to upgrade and replace SROs



City of Vancouver, 2026. Overheating in MURB project.

ACTION 7

Develop approaches that accelerate post-earthquake ***building re-occupancy and citywide recovery***

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- Reducing risk is critical and achievable, but it takes time.
- A comprehensive approach to risk reduction includes supporting response and recovery planning
- City facilities are essential to neighbourhood and citywide response and recovery
- Staff will support ongoing planning work with inventory and risk assessment data



Michael Kissinger, 2019. VanSlam earthquake exercise.

Conclusions

- Seismic risk reduction is **complex, generational, and costly work**
- **Significant progress can be made**, through risk awareness and careful, incremental steps forward
- **Success** requires partnership across all sectors and all levels of government
- This plan **sets a strong foundation** for this work, now and into the future



Upgrade elements from the seismic retrofit of 515 W. Tenth Street

Thank You

