

PUBLIC SAFETY COMMITTEE

TO: *MAYOR AND COUNCILLORS*

SUBJECT: EARTHQUAKE STRATEGIES AND ACTIONS FRAMEWORK

RECOMMENDATION:

THAT staff be authorized to develop a framework of strategies and actions for earthquake resilience as outlined in the report “Earthquake Strategies and Actions Framework” dated October 23, 2024, of the Public Safety Committee meeting.

REPORT

The Public Safety Committee, at its meeting held on October 23, 2024, received and adopted the attached report providing a framework of earthquake strategies and actions and introducing the Burnaby Strategies and Actions for Earthquake Resilience (B-SAFER) project.

On behalf of the Public Safety
Committee,

Councillor J. Wang
Chair

Councillor M. Santiago
Vice Chair

TO: PUBLIC SAFETY COMMITTEE (PSC)
FROM: GENERAL MANAGER COMMUNITY SAFETY
SUBJECT: **EARTHQUAKE STRATEGIES AND ACTIONS FRAMEWORK**
PURPOSE: To develop a framework of earthquake strategies and actions and bring forward a report titled “Burnaby Strategies and Actions for Earthquake Resilience (B-SAFER)”.

RECOMMENDATION

THAT staff be authorized to develop a framework of strategies and actions for earthquake resilience as outlined in the report “Earthquake Strategies and Actions Framework” dated October 23, 2024.

1.0 POLICY SECTION

The Community Safety Plan initiative “Earthquake Strategy”, hereafter referred to as the Burnaby Strategies and Actions for Earthquake Resilience (B-SAFER) project, as described in this report, harmonize with policy objectives contained in the City's Moving Forward initiative (2022), Burnaby Community Safety Plan (2020), Environmental Sustainability Strategy (2016), Social Sustainability Strategy (2011), Official Community Plan 1998 (revised 2023) and Burnaby Emergency Program Bylaw, Bylaw No. 10676 Consolidated (1998).

The work of this project and outputs of the report are pursuant to the Province of BC's Disaster and Emergency Management Act [SBC 2023] Chapter 37, and all applicable regulations in force.

The B-SAFER Report can be used to inform future Financial Plans and strategic investment in disaster risk reduction initiatives, and it can be a resource to influence and strengthen initiatives and actions within the Economic Development Sustainability Strategy (2020) with the goal of supporting disaster resilience of Burnaby-based businesses.

The B-SAFER project will be informed by and align to regional strategies, including the Metro Vancouver Regional Growth Strategy, (2023) and Regional Food System Strategy (2011).

Work in the space of emergency management and the B-SAFER project is informed by the United Nations Sendai Framework for Disaster Risk Reduction 2015-2030.

2.0 BACKGROUND

BC’s southwest coast is a region known for its seismic activity. A large earthquake, accompanied by aftershocks, can be highly destructive, leading to widespread structural damage, injuries, and loss of life. The devastation can be further compounded by secondary hazards, such as, but not limited to liquefaction, landslide, and fire.

At its highest level, disaster risk reduction is the policy objective of disaster risk management, and its goals and objectives are defined in disaster risk reduction strategies and plans.

The City of Burnaby has made emergency management and its four phases – prevention and mitigation, preparedness, response, and recovery - a priority pillar of the Community Safety Plan. Burnaby identified earthquakes as the most destructive hazard facing the City in the Hazard, Risk, Impact, and Vulnerability Assessment (2019). Earthquakes pose a considerable threat with potential for broadly affecting people, animals, the natural environment, critical infrastructure, and the built environment. Developing an earthquake strategy, a priority initiative in the City’s Community Safety Plan, will spark meaningful conversations and inspire insight, integrate technological innovation, and be founded on a combination of scientific research and traditional First Nations knowledge and histories.

3.0 GENERAL INFORMATION

The Burnaby Strategies and Actions for Earthquake Resilience (B-SAFER) will be a citywide framework that takes a comprehensive approach to addressing shocks, such as earthquake, and stressors, including vulnerabilities, like aging infrastructure, and capacity challenges such as systems, response and recovery capabilities, and risk reduction investment to build a roadmap toward holistic organizational and community disaster risk reduction to seismic events. It will build the City’s knowledge based on scientific and technical evidence; enable sustainable, disaster and climate resilient investments; create policy for broad disaster risk reduction objectives and create actions that empower proactive and collaborative government; propose systems changes in the city that reduces vulnerability of people, places and things; generates opportunities for adaptive buildings and infrastructure; and fosters thriving and prepared neighbourhoods.

3.1 B-SAFER Project

The B-SAFER project will incorporate a multi-phased, interdisciplinary approach performed over several years. It will address Burnaby’s unique geography, geology, demographic profile, Official Community Plan, urban design and growth, and infrastructure planning. The hazard focus of the project will be on earthquakes and aftershocks hazard and correlate follow-on hazards such as liquefaction, landslide and fire.

The project work will involve extensive research and studies tailored to Burnaby-specific scenarios that facilitate the development of effective and interlinked strategies and an action plan roadmap. These enable disaster risk reduction panarchy (the rationalization of the interplay between change and persistence, between the predictable and unpredictable), generate improved understanding of earthquake risks

and vulnerabilities, encourage the development of practical and effective disaster risk reduction (DRR) initiatives, inform realistic and elastic actions for implementation, and ultimately enhance holistic community safety.

The work on the B-SAFER project will call for the active engagement of and work from staff from across City departments and divisions as well as engage input and feedback from technical experts, the science community, post-secondary researchers, community partners and members of the public.

The project will occur through five (5) phases and involve the core activities described below.

Phase 1 Project Launch (2024)	<ul style="list-style-type: none">• Define internal and external stakeholders.• Collect data through qualitative research and meetings and interviews with stakeholders, including, consultation with Host First Nation Traditional Knowledge Keepers, city departments and divisions, regional and provincial governing bodies, and external technical and scientific advisors.
Phase 2 Hazard Risk Assessment (HRA) for Earthquakes (2024-2025)	<ul style="list-style-type: none">• Conduct an earthquake risk assessment inclusive of vulnerability of and impact data related to critical infrastructure, societal including vulnerable and equity-denied populations, economic including the city and the community, the natural environment including areas of heritage and cultural significance, and the built environment including transportation systems.• Identify secondary or follow-on hazards resulting from earthquakes.
Phase 3 Scenario Development (2025)	<ul style="list-style-type: none">• Develop no less than four (4) feasible earthquake scenarios, complete with data and modelling, that are specific to the area of the city of Burnaby.
Phase 4 DRR Strategies for Earthquakes (2025)	<ul style="list-style-type: none">• Develop strategic and policy recommendations to enable earthquake disaster risk reduction (DRR) that are based on the prior phases. The DRR strategies are to harmonize with the city’s existing strategies and plans.
Phase 5 DRR Action Plan for Earthquakes (2025-2026)	<ul style="list-style-type: none">• Develop an action plan and implementation roadmap that includes short-, medium- and long-term initiatives that will enact the DRR strategies, harness proactive disaster mitigation, and encourage sustainable investments in disaster and climate resilience.

3.2 The B-SAFER Report

The B-SAFER Report will amalgamate the project elements and present Council with a strategic framework, recommendations for earthquake resilience, and an action plan roadmap to empower and strengthen the City’s disaster risk reduction efforts. The report is to be completed by or before April 30, 2026 and will presented through the Committee to Council.

4.0 COMMUNICATION AND COMMUNITY ENGAGEMENT

Host First Nation consultation combined with stakeholder and community engagement is essential to the B-SAFER project and informing the final report.

Engagement enables broadening of our understanding of vulnerability of people, animals, places and things to the seismic hazard and its impact (both known and perceived) on the community. A variety of methods will be utilized to hear and obtain feedback and include, as practicable or appropriate, burnaby.ca/yourvoice, surveys, meetings, workshops, seminars or webinars, summits or open houses, and one-on-one conversational interviews.

5.0 FINANCIAL CONSIDERATIONS

The B-SAFER project and report will be funded through the combination of operating budget allocation and available and awarded grant funding as the sources of revenue.

Respectfully submitted,
Charmaine Pflugrath, Emergency Management Coordinator
For
Dave Critchley, General Manager Community Safety

ATTACHMENTS

No attachments

REPORT CONTRIBUTORS

This report was prepared by Yoriko Davidson, Emergency Management Assistant Coordinator and Charmaine Pflugrath, Emergency Management Coordinator, and reviewed by and Scott Houston, Senior Management Risk, Insurance and Claims.