



Resilience, Risk, and Decision-Making in the Municipal Context

Resilient Cities Network: Cities on the Front Line Series

Katia Tynan, Manager of Resilience and Disaster Risk Reduction





Acute Shocks

- Sudden-onset events
- Public health crises, earthquakes, oil spills, industrial accidents, fires, floods, droughts, heatwaves, etc.



Chronic Stresses

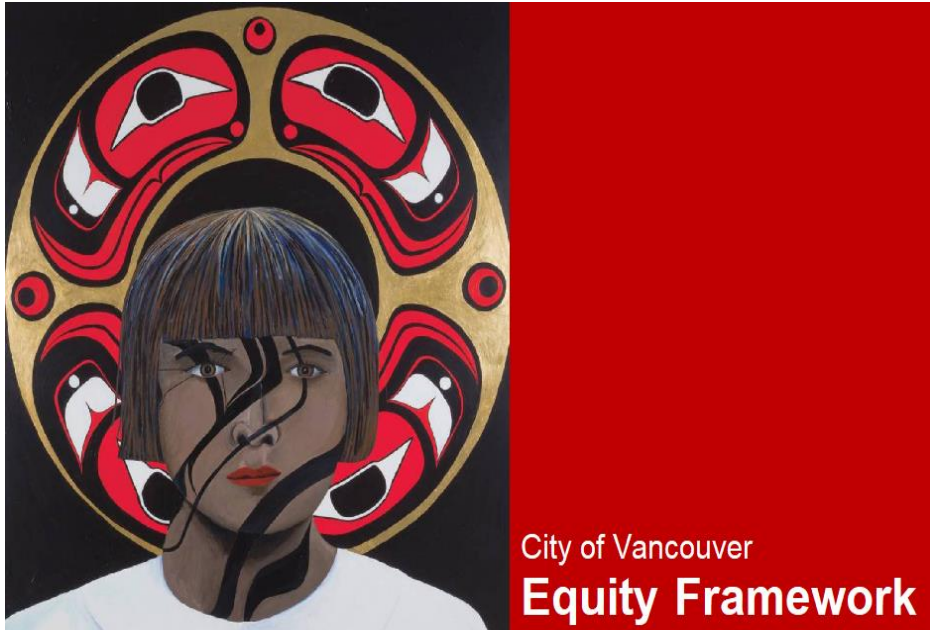
- Ongoing, creeping, or cyclical challenges
- Aging infrastructure, housing affordability, chronic poverty, social isolation, Sea Level Rise, etc.



Trends

- Emerging changes that are not inherently negative
- Aging population, technology, changing nature of work, growing population, and urbanisation, etc.





Portrait of a Residential School Girl by Lawrence Paul Yuxweluptun

No Equity, No Resilience: Minneapolis is All of Us

Cities who are not equitable will always be in recovery mode

Meeting of the Minds article by Ron Harris and Stewart Sarkozy-Banoczy

- Marginalized communities experience disproportionate impacts of both shocks and stresses. Disasters lay bare our deepest inequities.
- Examine historical drivers of socio-economic vulnerability → exposure and vulnerability.
 - Proximity of homelessness to industrial areas.
 - Urban Heat Island and mal-adapted, low-income buildings.
- Resilience solutions must centre the needs and experiences of marginalized communities and work to improve equity – day-to-day.

Key Data, Risk, and Decision-Making Challenge

Our Future is Challenging

We live in challenging times and they will become more challenging

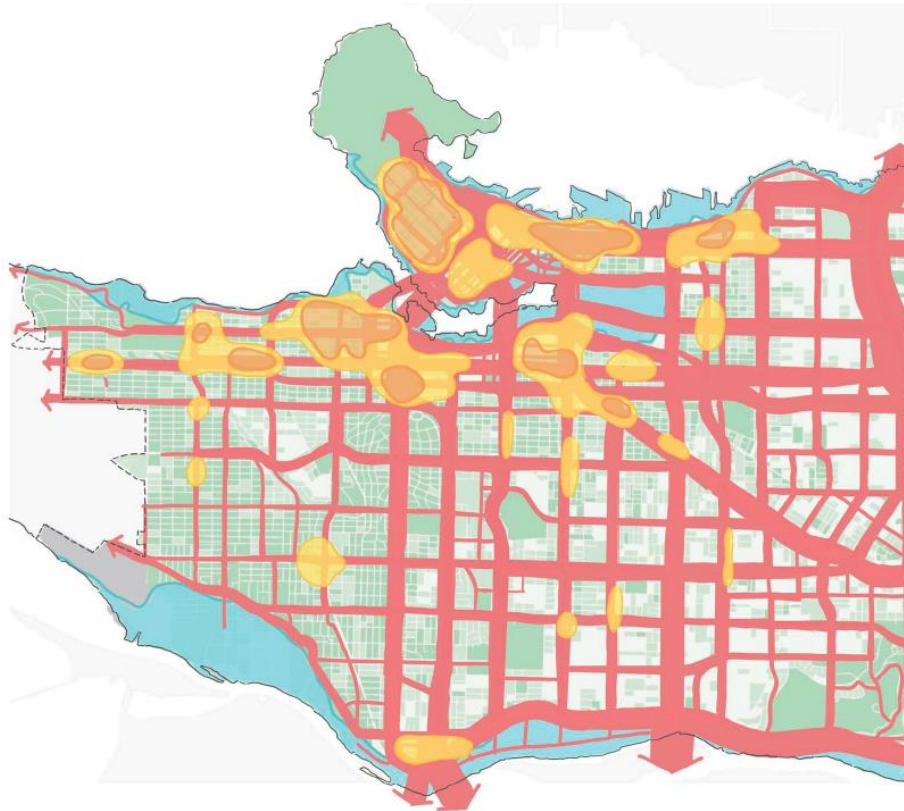
Sea level rise

Urban heat island

Flooding

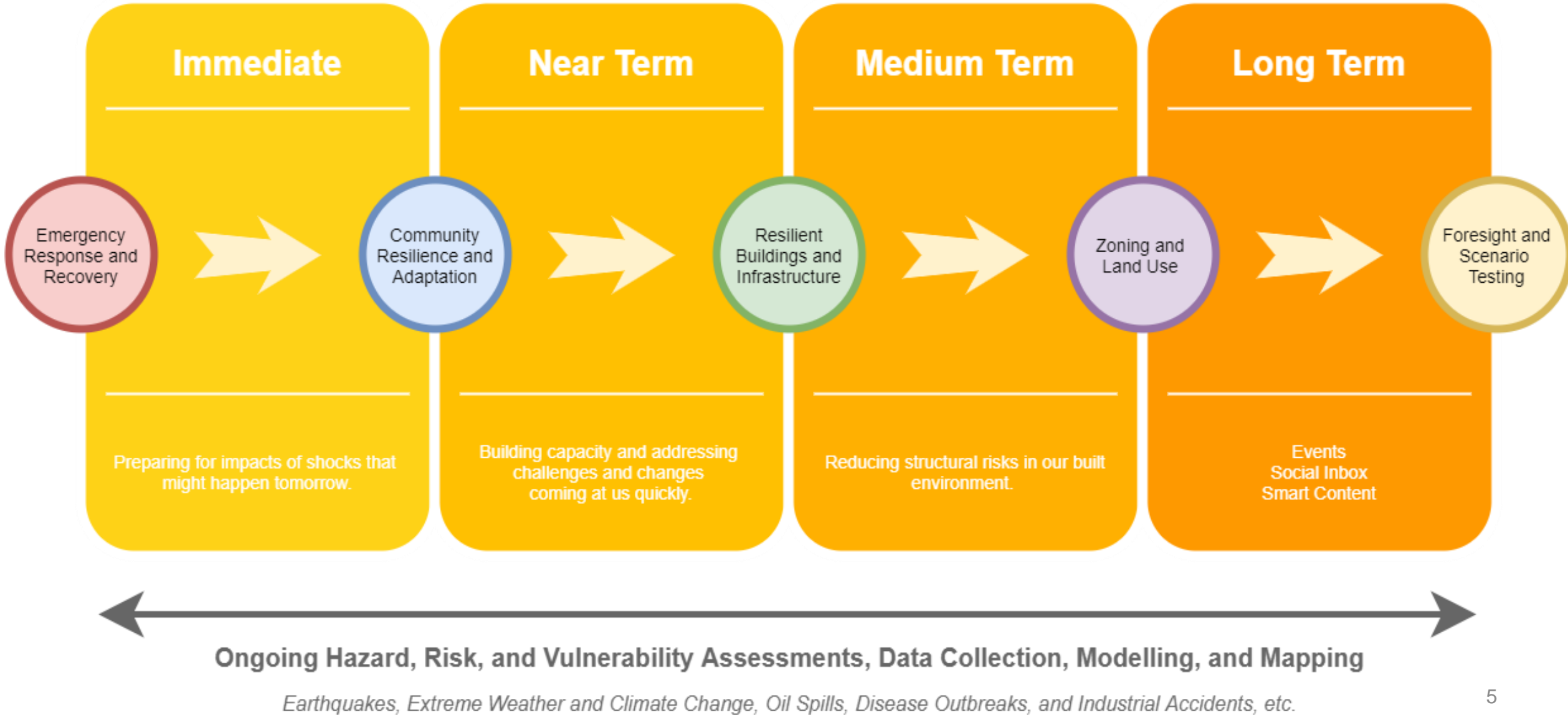
Air quality

Earthquakes



- Data, modelling, and mapping has been done ad-hoc based on departmental priorities
- Robust assessments have been done for certain hazards, but no comparative process to date
- Hazard, Risk, and Vulnerability Assessment out of date – did not previously include climate projections
- Shortlist of Hazards of Greatest Concern → developing narratives to accompany data and mapping and rating risk to inform prioritization

Continuum of Risk Reduction & Resilience



A Strong Foundation







**PRIORITY 1:
THRIVING AND PREPARED
NEIGHBOURHOODS**

Objectives:

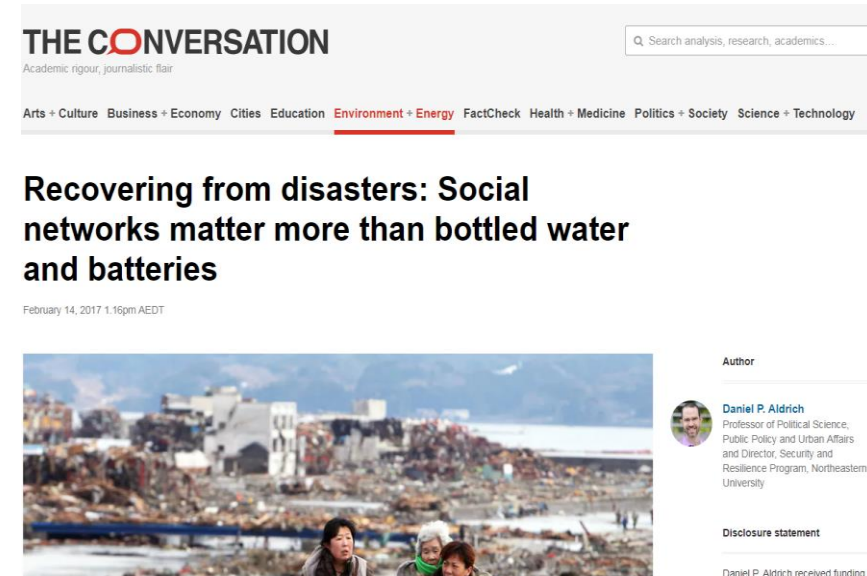
- 1.1 Cultivate community connections, stewardship and pride
- 1.2 Empower communities to support each other during crises and recover from disasters
- 1.3 Transform the way communities understand risks and prepare for local hazards
- 1.4 Strengthen social and cultural assets and services

- Neighbourhoods are ground zero for where impacts of shocks and stresses are experienced. Communities are first to adapt and come up with innovative, grassroots solutions to pressing challenges.
- Our social infrastructure, programs, and services are critical to community day-to-day, and during a crisis.
- The conditions that foster resilience are the same conditions that make communities socially, physically, ecologically, and economically healthy.

Thriving & Prepared Neighbourhoods

Actions Include:

- Launch a Resilient Neighbourhoods Program that connects emergency preparedness, climate action, and social connection
- Develop an interactive digital commons portal (Hazard and Risk Storymap) that connects to preparedness guides
- Engage artists to explore and interpret disaster information and develop creative solutions



THE CONVERSATION
Academic rigour, journalistic flair

Arts + Culture Business + Economy Cities Education **Environment + Energy** FactCheck Health + Medicine Politics + Society Science + Technology

Recovering from disasters: Social networks matter more than bottled water and batteries

February 14, 2017 1:16pm AEDT

Author

Daniel P. Aldrich
Professor of Political Science, Public Policy and Urban Affairs and Director, Security and Resilience Program, Northeastern University

Disclosure statement

Daniel P. Aldrich received funding





**PRIORITY 2:
PROACTIVE AND
COLLABORATIVE CITY**

Objectives:

2.1 Elevate the voices of underrepresented groups to improve resilience outcomes

2.2 Shape an inclusive city that can adapt to changes and turn challenges into opportunities

2.3 Strengthen organizational capacity to manage risk and recover from shocks and stresses

2.4 Advance holistic, collaborative disaster risk reduction and recovery planning

- Prioritize equity in planning, programs, and decision-making to improve resilience for everyone in our changing and growing community.
- Strengthen hazard and risk governance across departments, and embed resilience in all of our plans and programs.
- Improve agility of leadership and apply strategic foresight to anticipate future risks and leverage emerging opportunities.

Actions Include:

- Implement hazard modelling tools to reduce risk through land use, zoning, and urban design – including a Resilient Neighbourhoods Design Tool
- Explore Disaster Risk Reduction and Resilience Governance models based on the Sendai Framework
- Evaluate and embed resilience into financial planning



1 OUTCOME

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

1 GOAL

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

4 PRIORITIES

Understanding disaster risk

Strengthening disaster risk governance to manage disaster risk

Investing in disaster risk reduction for resilience

Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction



**PRIORITY 3:
SAFE AND ADAPTIVE BUILDINGS
AND INFRASTRUCTURE**

Objectives:

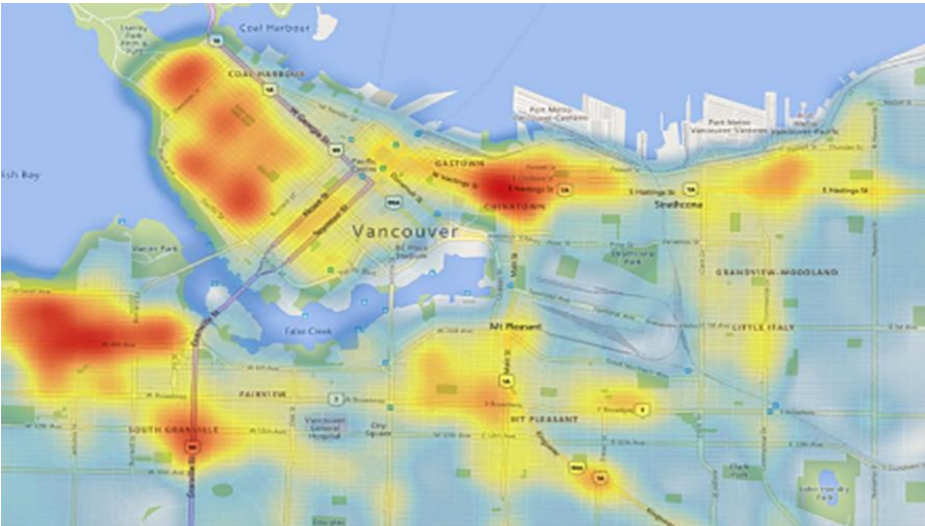
3.1 Improve building performance to protect lives, decrease displacement and accelerate recovery following earthquakes

3.2 Plan, design and upgrade civic facilities to serve the current and future needs of our diverse communities and ever-changing environmental conditions

3.3 Anticipate threats and mitigate and minimize disruption to civic infrastructure and critical services

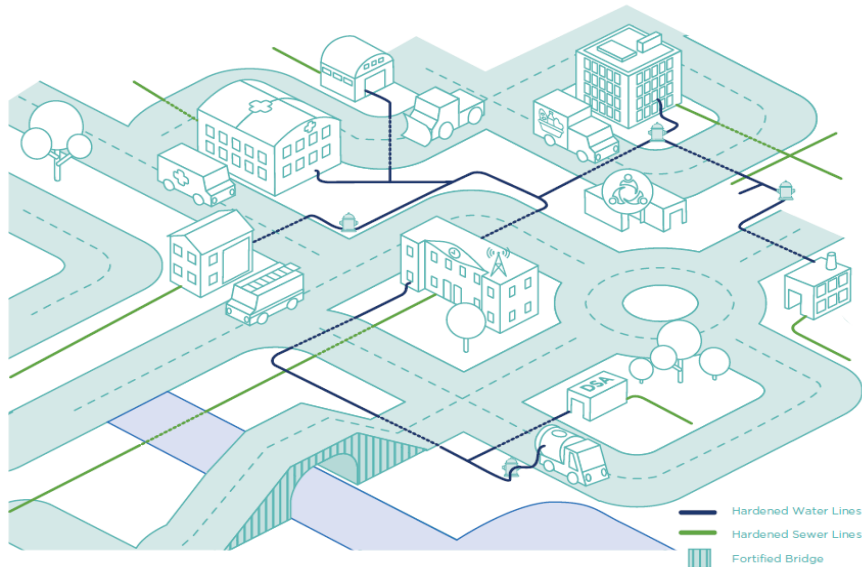
3.4 Promote regional collaboration to assess, finance and fortify lifeline infrastructure and supply chains

- Build cities that are able to withstand and adapt to multiple challenges and changes.
- Strategically upgrade civic facilities to ensure that current and future community needs are met.
- Develop a shared understanding of risks, vulnerabilities, and risk reduction options for buildings and infrastructure.



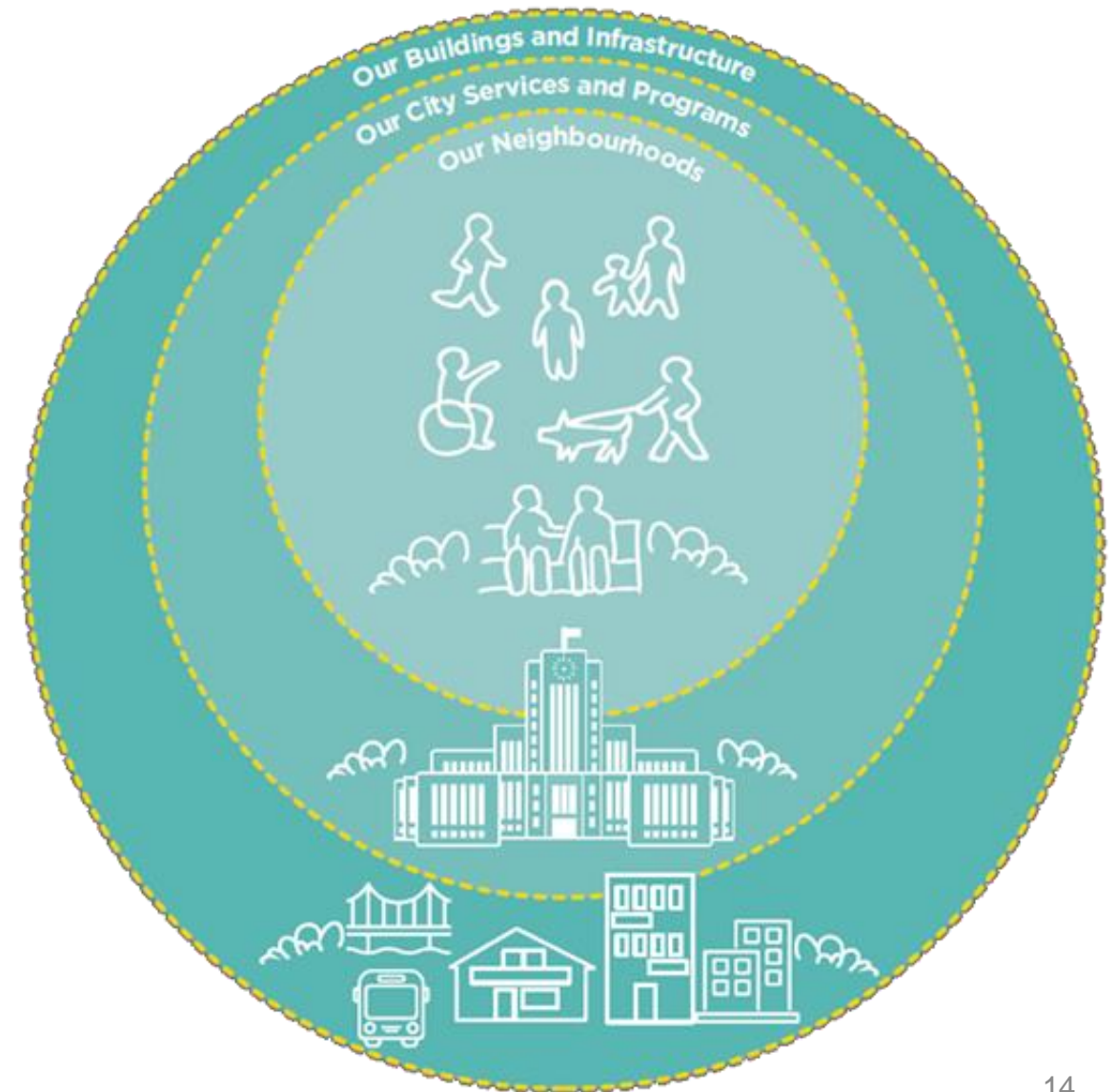
Actions Include:

- Complete seismic risk assessment and identify risk reduction and policy options for buildings
- Form cross-departmental Resilient Buildings Governance Model to integrate seismic, climate, and affordability policy
- Develop framework for critical infrastructure management and decision-making, including risk assessment guidelines and recovery targets



Resilient Vancouver Strategy Next Steps

- Complete Hazard, Risk, and Vulnerability Assessment and identify ongoing assessment process and data management
- Explore citywide DRR and Resilience Governance framework – including departmental alignment and decision-making process
- Align city funding and priorities to address greatest risks and invest in proactive resilience



Thank you!

Katia Tynan

Manager of Resilience & Disaster Risk Reduction

City of Vancouver

Katia.Tynan@vancouver.ca



SHOULD I BE WORRIED?

Credit: Justin Langlois – Artist in Residence at City of Vancouver