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
Resilient to What?

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.
Resilient for Whom?

- 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

- 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- Hazard, Risk, and Vulnerability Assessment out of date – did not previously include climate projections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

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
Continuum of Risk Reduction & Resilience

Immediate
- Emergency Response and Recovery
  - Preparing for impacts of shocks that might happen tomorrow.

Near Term
- Community Resilience and Adaptation
  - Building capacity and addressing challenges and changes coming at us quickly.

Medium Term
- Resilient Buildings and Infrastructure
  - Reducing structural risks in our built environment.

Long Term
- Zoning and Land Use
  - Events, Social Inbox, Smart Content
- Foresight and Scenario Testing

Ongoing Hazard, Risk, and Vulnerability Assessments, Data Collection, Modelling, and Mapping

*Earthquakes, Extreme Weather and Climate Change, Oil Spills, Disease Outbreaks, and Industrial Accidents, etc.*
A Strong Foundation

Innovation and Entrepreneurs
Non-profits
Academic Partners
Green Economy
Artists and Creative Sector
Resilient Vancouver
Local Businesses
Climate Adaptation Strategy
Healthy City Strategy
Earthquake Preparedness Strategy
Reconciliation Framework
Housing Vancouver
Equity Framework
Culture Shift
Greenest City / Climate Emergency

Equity Framework
Greenest City / Climate Emergency

City of Vancouver

Reconciliation Framework
Resilient Vancouver Strategy

**GUIDING PRINCIPLES**

- Reconciliation
- Equity and Intersectionality
- Sustainability
- Recovery
- Reciprocity

**PRIORITY AREAS**

**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 community understands risks and prepares for local hazards
  1.4 Strengthen social and cultural assets and services

**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

**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 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
People

• 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
• 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.
Proactive & Collaborative City

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.
Built Environment

• 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.
Safe & Adaptive Buildings & 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

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