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To: "Direct to Mayor and Council - DL"
CC: "City Manager's Correspondence Group - DL"
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Subject: Questions from Councillors regarding Resilience Strategy

Greetings Mayor and Council

Over the weekend I got some questions from Councillors on this strategy. Please find below answers to these questions.

Best

Sadhu

1. What are some examples of how resiliency can be integrated into the plan in terms of detailed implementation of strategies?

Staff are already working with the City Wide Plan scoping team to support the 1. One of the most important things we can do is to integrate hazard and risk information into land use planning, and to leverage the city plan process to set risk reduction and resilience targets with and for our community. The modelling work that we are doing now will enable us to compare different land use scenarios, for example, to determine the social and economic impacts of different hazards based on growth, and to identify where new strategies or standards could support risk reduction in communities. The City of Norfolk is a great example, where, as a city where much of its critical infrastructure and downtown core was vulnerable to sea level rise, worked with many partners to develop a plan to establish multiple economic hubs in order to reduce the future vulnerability of the economy to climate change.

2. Resilient Vancouver aims to enhance capacities of neighbourhoods, infrastructure and our government (p. 4). What are some specific goals in terms of enhancing capacity of local government?

In the context of building our capacity to respond and withstand from shocks and adapt to future conditions, we have already taken important actions like reducing risk to staff by upgrading the West annex and taking down the East Wing; Two dangerous buildings that may have resulted in loss of life, and would definitely have impeded the city's response capabilities. Staff will also participate in an earthquake exercise in June as part of training.

Emergency response training and preparedness is important, and there is more that we can do including the following embedded in the Resilient Vancouver strategy:

- Establishing post-disaster service-level targets across asset classes and city services, as a starting point for building our more robust emergency and business continuity plans, and designing critical infrastructure.
- Working with Parks and Libraries to train and build capacity of front line staff at civic facilities to respond to disasters and enhance their role during extreme weather and temperatures.
- Connecting emergency management and business continuity functions in our city, and consolidating governance around risk reduction and resilience initiatives related to climate adaptation, emergency management, and mitigation.

3. On page 11 the report notes a conservative prediction of a minimum sea level rise of 1 m by 2100. What are the range of sea level rise predictions you are working with? What would it take for Vancouver to prepare for High, Medium and Low estimates of sea level rise?

The Resilience Strategy doesn't target specific SLR measures, as this is already well underway through climate adaptation work, and our engineering and sustainability departments are working to evaluate different options to address SLR based on different scenarios and risk tolerance.

However, the modelling tools being developed through the Resilient Vancouver partnerships will provide new tools for staff and stakeholders to assess different land use and growth scenarios in conjunction with multiple sea level rise scenarios, so that staff can identify different strategies and trade-offs across multiple risk reduction options. We also need to be looking at the cascading impacts of sea level rise, for example, how will impacts to infrastructure in one area, impact operations, residents, and people in another part of the city?

In a couple weeks, as part of the Resilient City partnership, we will be working with a leading non-profit from Rotterdam, and the Port of Vancouver, to pilot a cascading impact assessment process in an area of high flood risk along Waterfront Road.

Moving forward, in addition to considering how SLR will impact Vancouver directly, we also need to be conscious of our role regionally. Other cities are far more vulnerable to sea level rise, which means Vancouver will continue to be a desirable location for investment, residents and businesses, we need to strengthen our understanding of what it means to be a resilient city in a region where many other communities could be much worse off, and where regional critical infrastructure is exposed to SLR.

4. Page 12 of the report notes concerns re: power outages. To what extent would PVC and solar hot water help mitigate the effects of power outages?

We will be looking into multiple options for resilient buildings and systems. I'm not an engineer but I can tell you though is that there are many co-benefits that we can be looking for across green buildings and resilience. For example, many critical facilities in our region rely on diesel and gas generators, and that's fine for a short term power outage, but it's not very useful in a longer term emergency, or when gas shortages occur.

Vancouver is working on a project led by BC Housing to consider this issue specifically. You can find more information about that here: <https://www.bchousing.org/research-centre/library/residential-design-construction/MBAR&sortType=sortByDate>

5. Food security is noted as a concern on page 16. Is producing more food locally, including in neighbourhood and community gardens, part of the strategy to mitigate this threat?

The Greenest City Action Plan, Food Policy Council, and Food strategy have done a lot to increase local food production. Resilience needs to include a multi-pronged approach to food resilience, and that needs to start by evaluating the resilience of the supply chain, and identifying opportunities to enhance redundancy and resilience. Solutions may include increasing local food production, but also need to include strengthening existing supply chains and local vendors. As part of our strategy, we are recommending the development and implementation of a process to assess the resilience of food within neighbourhoods, so that we can make recommendations appropriate to the risks and unique needs of communities.

For example, one study that we collaborated on with the Food Policy group looked at the resilience of low cost meal providers in the Downtown East Side. It found that the potential loss of functionality as a result of power outages, or building damage would mean the instant loss of food for many people. We need to be thinking not only about how to reduce vulnerability of these services, but also about how to support them to provide surge capacity in the event of emergency.

6. Do the predictions of population increase by 1 million (page 23) include estimates of climate refugees? What is the number of climate refugees we expect, and by when, in Vancouver?

No – they do not. To be clear this is a regional growth forecast. There is significant uncertainty in the movement and predictions of climate refugees. The World Bank estimates that up to 1 Billion people could be climate refugees by 2050, however, many of these people will move within their own countries and regions. The number of foreign immigrants and refugees will be largely determined by federal decisions. However, climate refugees will not only come from other places, we also need to be aware that there were 60 000 people evacuated from their homes in the interior last year from forest fires and floods, and this will continue to happen. We are just as likely, if not more likely, to see people relocating permanently or temporarily to Vancouver from within BC and around our region, as we are from outside the country.

7. If cultivating community connectedness is the key to neighbourhood resilience (p. 25), why have we cut funding for the Greenest City Neighbourhood Grants?

When we launch the Resilient Neighbourhood Tool-kit, we will do so in combination with a grant program. One thing we

heard from community is that funding through grants are helpful, but it can be equally or more helpful to provide space and information, and a consistent and familiar staffing presence. One of the actions for the Resilient Strategy is to scale the Resilient Neighbourhood Program in part by consolidating community engagement initiatives across sustainability, emergency management, and resilience, and in cooperation with Parks and Libraries.

The GC grant wasn't reduced as much as it was turned from a project into a program. The original project was \$1m that was matched by the Vancouver Foundation and the \$2m was distributed over 4 years. When the program ended Vancouver Foundation wasn't interested in this type of partnership again so we did a smaller program with them (\$90k total) and created an ongoing annual program for \$205k per year. There are more details below.

From a community resilience perspective there are millions of dollars in grants to support the community given out each year, not just green - see here: <https://vancouver.ca/people-programs/grants-and-awards.aspx>

History of the Greenest City Fund

To support green ideas generated and implemented by the community, the City of Vancouver partnered with the Vancouver Foundation in 2012 to create the \$2 million Greenest City Fund. The City committed \$1 million to the Fund, which was matched by the Vancouver Foundation. The Greenest City Fund was delivered from 2012 to 2015 in the form of grants to the community for projects in support of the Greenest City Action Plan. From 2012-2015, 573 projects were funded and approximately \$2,000,000 was distributed. Projects were implemented in support of all ten Greenest City goal areas.

For 2019, \$260,000 has been set aside as a line item in the Operating Budget for this program, the Greenest City Fund. \$215,000 is available for the Greenest City Grants and the remaining \$45,000 will be used to support the Greenest City-Neighbourhood Small Grant which the Vancouver Foundation will administer from 2017-2020 on behalf of the City of Vancouver.

For the Greenest City Grants, applicants may apply for, per project, up to 50% of the project's budget to a maximum of \$100,000. Project timelines may be one to three years in length. The typical grant is \$35,000 to \$45,000 in size but opportunities of up to \$100,000 will be considered.

8. Are resilient buildings (p. 29) both seismically and climate resilient? Are we integrating energy retrofits into plans?

Yes, this is critical. As part of this work we are proposing the establishment of a Resilient Buildings governance model to integrate work across climate and seismic resilience, as well as to ensure we are considering priorities like affordability and accessibility. We are also working in partnership with the Province as they advance an Existing Building strategy to enhance energy efficiency in conjunction with seismic resilience.

9. Have we estimated the budget and timelines needed to ensure civic buildings seismic and energy retrofits are completed?

Through our work we know that our current financial tools are limited – and the process of applying for federal funding, that we may or may not receive, is not a reliable way to plan to invest in upgrades and retrofits. One of the key actions in the strategy is to explore and advocate for new financing tools and partnerships to accelerate these upgrades, including by looking at tools used in other cities, like resilience bonds. Currently these don't exist in the Canadian context, but more and more they are emerging globally in response to disasters.

Please see response below from REFM:

The energy program is focused on meeting our renewable energy targets and timelines, as per Renewable Energy Strategy for city owned buildings. The budget for that program is being funded through capital plan, in multiple categories.

The seismic program for our city facilities has a number of priority buildings being recommended for renewal and number of buildings being recommended for seismic upgrade. Both of these categories require significant funding and it is hard to estimate the timelines without having the certainty on the funding timelines. One of the recommended strategies is to prioritize these buildings in the capital planning process, so that we can address the seismic risk sooner.

10. Council Authority/Previous Decisions – I'm looking for reference to previous resilience strategies and/or emergency

preparedness/all hazard strategies. I don't see any referenced; however, I'm venturing the City has had emergency preparedness strategies prior to this time.

Besides the 2 decisions listed, there were no other specific decisions related to the Resilience portfolio. However, the city does have emergency plans and strategies in place. Daniel Stevens, Director of Emergency Management will be presenting on the Earthquake Exercise after the Resilient Vancouver Presentation, and will go into more detail on response plans.

In terms of Emergency Preparedness, the Earthquake Preparedness Strategy was presented to council in 2013, with no accompanying report. There was no decision made on this presentation, the strategy has been implemented by staff as part of the emergency management program.

The Climate Adaptation Strategy update approved by council in December 2018 is also closely related to this work.

In the early 2000s, council heard a staff report that included a recommendation to develop seismic policy for existing buildings. No action was taken on this report. It is unclear why.

11. Budget

- a. Please remind me....was the Chief Resilience Officer salary included in the approved 2019 budget (e.g. post-grant page 32 for reference)?

The Chief Resilience Officer position and salary was extended to cover the post-grant period in 2019 as part of the 2019 budget. (about 8 months)

- b. What is the timeframe for this strategy and what is the total proposed budget for this strategy?

Timeframe

- The intent of the strategy is to set out high level objectives as a framework for the way we plan and advance resilience over the long-term, in part through integration with the City Wide Plan and by embedding resilience into city planning and operations.
- The enabling actions identified in the strategy can be scoped and initiated in the next 2 years. Given the breadth of the strategy, staff will develop project plans for different elements, many of which will have different timeframes. Staff propose to report back independently on different components of the strategy, and in conjunction with the City Wide Plan.

Budget

- We have not scoped a total budget for all actions in the strategy, and will do so pending Council's approval of the framework. We do know that there will be modest staffing requirements in the initial phases, to facilitate research, policy development and to sustain partnerships and leverage resources, particularly related to the Resilient Neighbourhood Work and the Seismic Program.
- 25 of the actions are underway, resourced through partnerships, or represent changes in process that can be resourced through operational budgets.
- Like the climate adaptation strategy, the majority of actions in the strategy represent changes in the way we plan, and have been identified in collaboration with city departments to ensure they are prepared to accommodate within departmental budgets and build into future work plans.
- We do anticipate that in the longer term, this strategy will result in recommendations for capital investments – these will be brought forward through the capital planning and budget process and have not been assessed.
- We see many elements of this strategy as being integrated with and through the City Wide Plan process. With council's approval, staff will finalize implementation plans and an associated financial strategy for other items.

The most significant, near term resourcing requirements that need to be evaluated and will be included in the 2020 budget process include:

- Seismic Policy development and stakeholder and community engagement

- Development of a dynamic city-wide building database
- Scaling of the Resilient Neighbourhood Program and staff support for the DTES emergency response and recovery plan.

12. Page 33 – additional staffing proposed for seismic work and neighbourhood program – have you considered short term secondments from other jurisdictions or redeploying existing policy staff to this work (particularly the resilient neighbourhood work...instead of additional permanent FTE).

For the resilient neighbourhood program, we are evaluating options to align and consolidate programming across climate adaptation, emergency management and resilience portfolios, and collaborating with Parks and VPL to support delivery of community facing programming and place-based initiatives in community. The program can be scaled according to available resources. We are also exploring funding and delivery models with other partners.

For the seismic work, we intend to align with ongoing policy work related to green buildings and will leverage existing staff to the extent possible. We have not looked into secondments from other jurisdictions, but this is a good idea and is something we can explore. In hiring for the Seismic Policy Planner position, we found that we did not have the requisite subject matter expertise internally, and needed to post externally.

In both cases, we rely heavily on the contributions of partners to advance this work, and we need to ensure we are staffed appropriately to leverage these opportunities.

13. How were the climate/geo-physical, technological, health, social and economic stresses and trends determined? (I see reference to stakeholder consultation in 2017 on page 10; however, there are other relevant shocks, stresses, and trends that aren't mentioned – I'm curious why)

The list provided in the report to council is a high-level snap-shot in time of the most commonly referenced shocks and stresses. These are definitely not the only shocks and stresses we may experience or that need to be considered in planning for resilience, and this is not intended to be a static list. The [Preliminary Resilience Assessment](#) and [Phase 1 Stakeholder Consultation](#) report detail many more issues that were raised by community. Staff did not have capacity to address each individually, but have shared all input with relevant departments. Part of planning for resilience will be continuing to re-evaluate future trends, shocks and stresses and integrating into decision making through scenario planning and foresight.

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The City of Vancouver acknowledges that it is situated on the unceded traditional territories of the Musqueam, Squamish, and Tsleil-Waututh peoples.