

Lower Mainland must tread harder

Climate change means municipalities face serious challenges in their efforts to avert flooding in the future

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A West Vancouver city worker examines flooding at John Lawson Park. Such flooding could become more common.

Photograph by: Mark van Manen Mark van Manen, PNG

Flooding has always been a seasonal concern for the Lower Mainland. Climate change is already making flood events more frequent, and our governments will need to address this challenge through effective policies.

The municipalities of Delta, Richmond, Surrey, and Vancouver will have to beef up their climate adaptation policies if they want to stay dry. However, planning for the impacts of climate change isn't easy, especially when solutions are costly and it's not clear who should pay.

While municipalities are responsible for flood hazard management and climate planning today, this wasn't always the case. Ten years ago, the B.C. government transferred flood management responsibilities to municipal governments.

But even with jurisdiction to manage flooding, there are still major gaps in local flood management policies that will only increase with climate change.

Lower Mainland governments are already innovating to address climate adaptation (like the City of Vancouver's Adaptation Strategy, the first of its kind in Canada) and flooding (like Richmond's bylaw that limits development in flood-prone areas). Nevertheless, they lack policies to address both flooding and climate adaptation.

These deficiencies are especially concerning in view of climate projections for the Lower Mainland region. Global temperature shifts are already causing local effects to the B.C. coast, such as rising sea levels, increased precipitation, and larger and more frequent coastal storms.

And the impacts are only expected to get worse; here in the Lower Mainland, we could see rainfall increase by 25 per cent in the next 40 years, and local sea levels increase by a full metre in the next 90 years. This is a bad news for the Vancouver area, which is already rated Canada's metro area at greatest risk from flooding due to climate change.

More water is a bad thing on the coast because floods will threaten agriculture, private property, and the public infrastructure that we all pay for. Over 50 per cent of Delta's total land mass is vulnerable to sea level rise, as are portions of Surrey and Richmond, along with the False Creek and Kitsilano areas

of Vancouver.

Flooding damage will affect croplands, homes, businesses, schools, highways, port facilities, railways, transmission lines, and even fresh drinking water supplies. The financial impact from sea level rise alone could be as high as \$7.6 billion by 2050.

My research finds that the lack of effective municipal policies to address climate-related flooding largely reflects financial, institutional, and informational constraints. Creating policies to ensure that we are adequately planning for the risk that climate change poses means that we need to address these constraints.

Municipalities don't have the funds to upgrade dikes and flood protection infrastructure to satisfy climate projections. The cost of upgrading Vancouver's dikes was recently estimated at \$9 billion, almost a quarter of the provinces' entire annual budget.

Planners also lack accurate information about flooding risks in the Lower Mainland, because most of the floodplain maps are outdated and do not reflect growing climate-related flood risks.

Downloading of flood management responsibility may have created more problems than it has solved. The Greater Vancouver area is made up of 24 local authorities, each managing climate change and flooding policies independently.

No one municipality has much incentive to invest in significant flood management if the bordering municipalities do not follow suit.

A lack of regional oversight has caused gross inefficiencies because each municipality is left to manage an issue that is not contained by political boundaries. Water flow simply does not respect municipal boundaries.

While adaptation actions are probably best taken at the local level, these actions will not be feasible without added support from higher levels of government. The provincial government could help municipal governments cover the cost of adaptation projects such as dike upgrades and studies to reap existing flood risk zones.

Municipal governments would also likely benefit from collaborating in a regional flood strategy.

This strategy would coordinate the policy efforts of each municipality to more efficiently allocate resources, and it would also re-evaluate the division of flood management responsibilities and likely return some to provincial entities.

But this strategy will be effective only if the majority of municipalities in the Lower Mainland participate. Unanimous participation may be difficult to achieve as some municipalities have a greater flood risk than others — a factor that strengthens the need for a provincial government role.

Coastal flood waters are a present and growing risk. Multiple levels of government and commitment of public funds will be needed, and a regional strategy may be precisely the lifeboat that the Lower Mainland needs to create local solutions to manage the flood risks of the future.

The author is a graduate of the masters program at Simon Fraser University's School of Public Policy; this column is based on her thesis research.

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