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For Immediate Release

Sea Level Rise will Mark a Sea Change for Vancouver Coastline

New Toolkit for Understanding Sea Level Rise in the City of Vancouver Now Available

BTAworks, the research and development division of Bing Thom Architects, has published a new community toolkit exploring the effects and costs of sea level rise in the City of Vancouver. Inspired by similar projects in San Francisco, New York City, and the Netherlands, the *Local Effects of Global Climate Change in the City of Vancouver* toolkit provides a sobering local view of the City's coastline.

"We wanted to inform a civic conversation on sea level rise which takes it from a global to a neighborhood level" says Eileen Keenan, a BTAworks researcher. "Instead of a far off example like the Maldives, we wanted to illustrate how the City of Vancouver and beloved local landmarks like Granville Island might be affected by various sea level rise scenarios."

Using data from the City of Vancouver's Open Data Catalogue and through a series of maps, the toolkit illustrates a number of sea level rise scenarios from a 1 metre to a 6 metres which could severely affect 3 to 13 percent of the City's landmass. The toolkit also charts how various types of land uses such agricultural, industrial, and residential might be affected.

"Not all land uses in the City would be equally affected by sea level change." observes Keenan, "As a legacy of our city roots as a port, and location at the mouth of the Fraser River delta, land with industrial and agricultural uses would be the most vulnerable to rising sea levels".

The toolkit also examined some of the financial implications of sea level rise. Using a recently published provincial paper on sea dikes as a technical reference and its estimate of a 1 metre sea level rise for the coast line of British Columbia by 2100, the toolkit was able to generate estimates on some of the financial implications of sea level rise.

"If we expect key infrastructure and public investments like sewage plants and parks to last over 100 years, this provincial paper provides some major scientific and engineering insights into what and where we can build", Keenan mentions. "This report represents the best and most current thought on how the BC coastline might change in the face of sea level rise and a framework through which we developed our toolkit estimates".

While a 1 metre sea level rise seems conservative, its implications are dramatic when various coastal engineering criteria such as high tides and storm surges are accounted for. According to the provincial report, 5.6 metres could become the new flood

construction elevation level in the Vancouver harbour for the year 2100 once these are factored in.

When combined with the 2011 land assessment values, the BTAworks toolkit estimates that over $25 billion worth of Vancouver real estate could be negatively affected by sea level rise. Additionally, the researchers caution that this does not reflect the value of existing physical and utilities infrastructure such as roads, sewers, and electrical facilities on these lands. When this is accounted for, the final costs of sea level rise are much higher.

The toolkit goes into further detail with the costs of defending Vancouver shoreline. Depending on the type of coastal defense, from earth dike to seawall, it could cost $255 to $510 million; however, Keenan notes that this estimate does not include any land acquisition for these dikes which could go into the billions.

“This is a cursory look at the potential costs and effects of sea level rise to City, but we felt that some kind of dollar estimate can illustrate what is at stake for Vancouver and, indeed, when it comes to sea level rise. Much more research and collaboration needs to be done to fine tune it.”

The toolkit concludes with the three recommendations. Firstly it concludes that the tool kit is a first step towards understanding the impact of sea level rise, but that a Metro Vancouver wide study is badly needed as a piecemeal municipality by municipality study is not enough. It points to the need for data for all municipalities to be readily available to facilitate this work. Secondly, it highlights the need for public and policy discussions around developing a Sea Level Rise Planning Area for those portions of the coastline that would be the most heavily affected by rising sea levels. This type of zoning would help us to place major land use and infrastructure changes in the context of a changing coastline. Thirdly, a need for a popular education program to educate citizens about the challenges to both the city and the region caused by sea rise and suggest what they might be able to do about it.

“This toolkit emphasizes the importance and value of long term urban planning and public education. We are very proud to help bring this critical issue forward for public discussion and study.” says Michael Heeney, a partner at Bing Thom Architects. “While these scenarios only offer a peek of the world at the end of this century, we owe it to future generations to begin preparing for this future today”.

For a copy of the *Local Effects of Global Climate Change in the City of Vancouver: A Community Toolkit and Atlas*, visit: www.btaworks.com

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