Presenting the Newly Released Canadian Seismic Risk Model and the RiskProfiler Web Interface

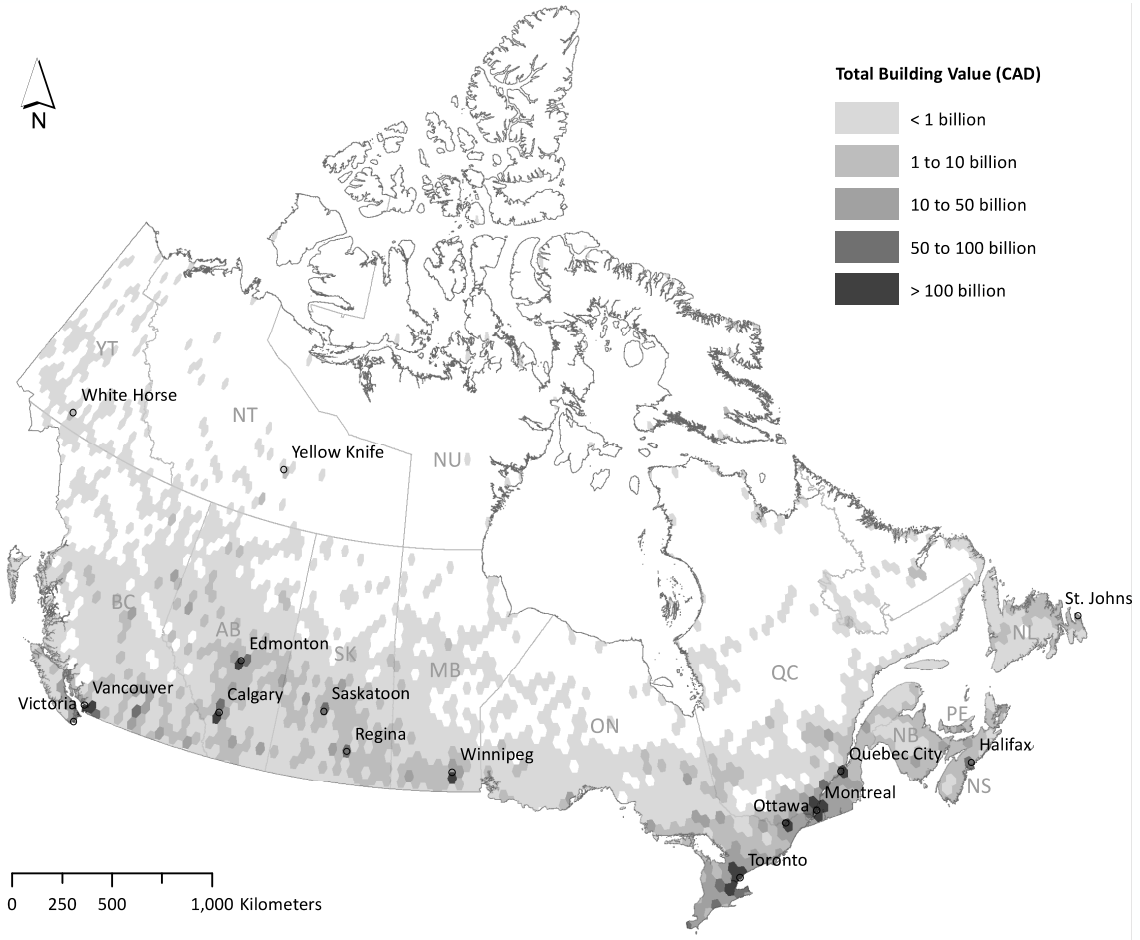
Hobbs, T.E., Journeay, J.M., Rao, A., Kolaj, M., Martins, L., LeSueur, P., Simionato, M., Silva, V., Pagani, M., Johnson, K., Rotheram, D., Chow, W.

USGS Subduction Zone Science Workshop 2023

Canada

National Seismic Risk Model

- 6th Generation National Seismic Hazard Model (Kolaj et al., 2020)
  - Seismic Source Characterization Model
  - Ground Motion Characterization Model
- Site conditions from V_{S30} model (Wald & Allen, 2007)
- Representative exposure model of Journeay et al., 2022a
- Social vulnerability model of Journeay et al., 2022b
- **Just accepted in *Earthquake Spectra***



Fragility and Vulnerability

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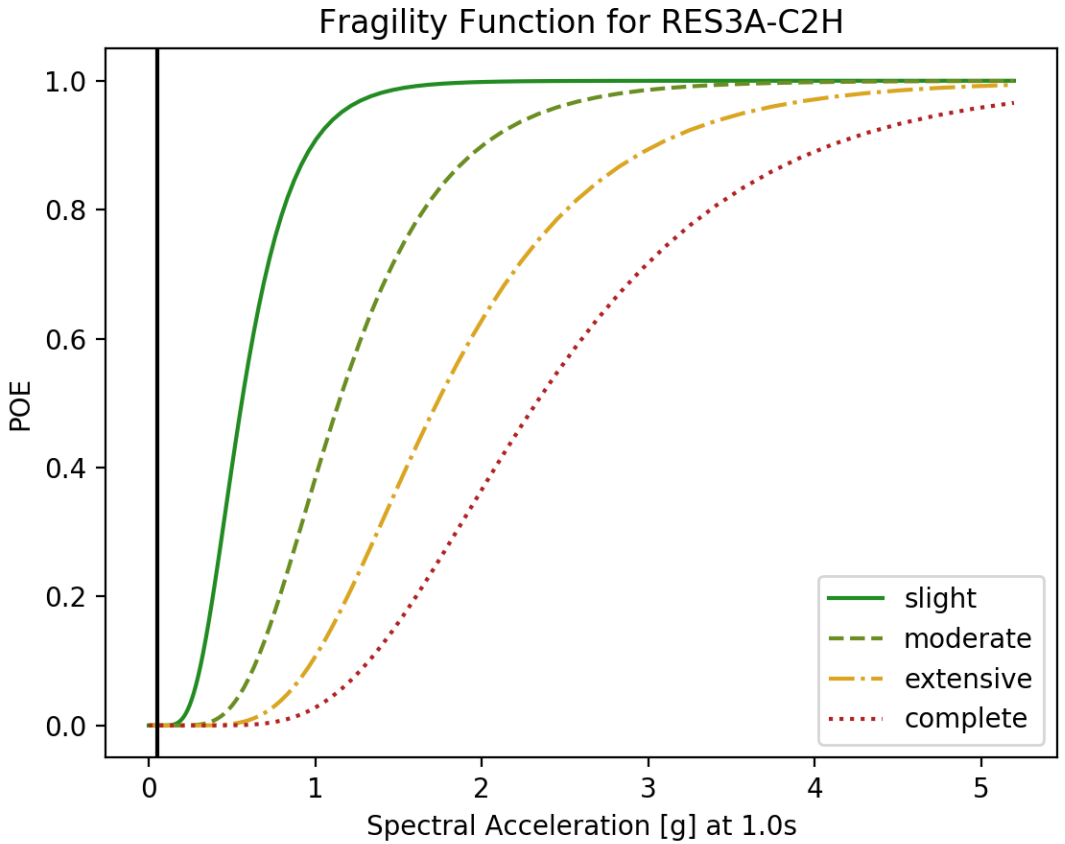
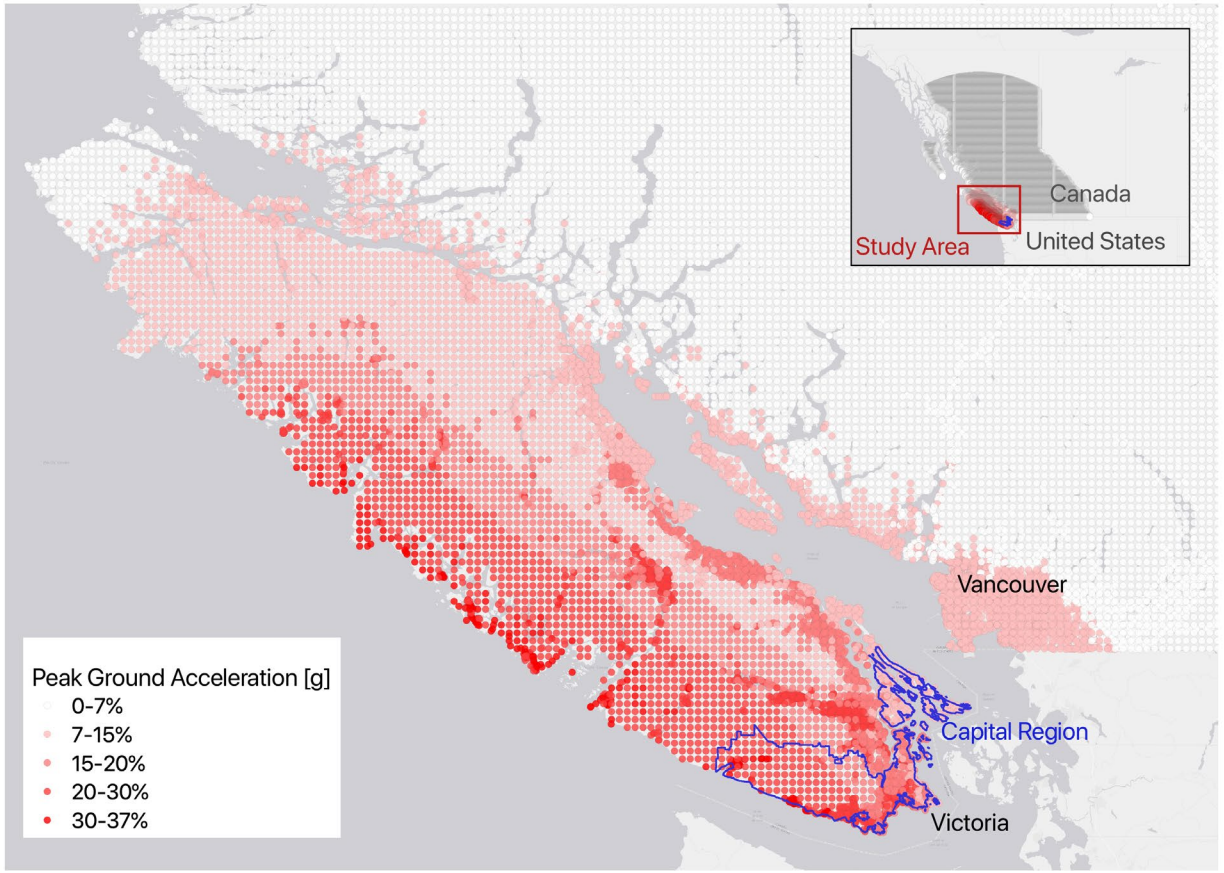
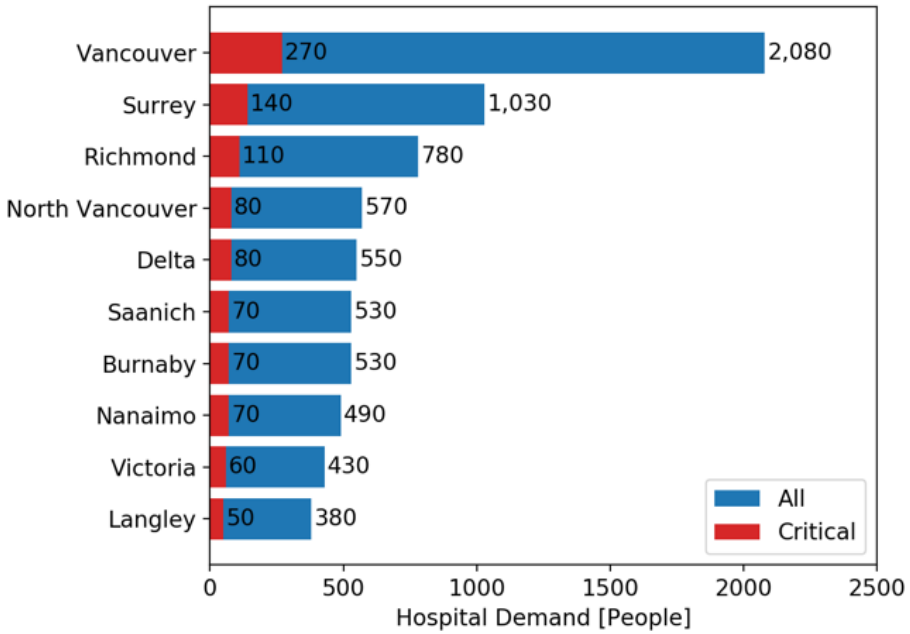


Retrofit:

- Assume all buildings could be brought to around 60-80% of the current code
- Exception for unreinforced masonry (low code)
- Exception for post-disaster buildings (high code)

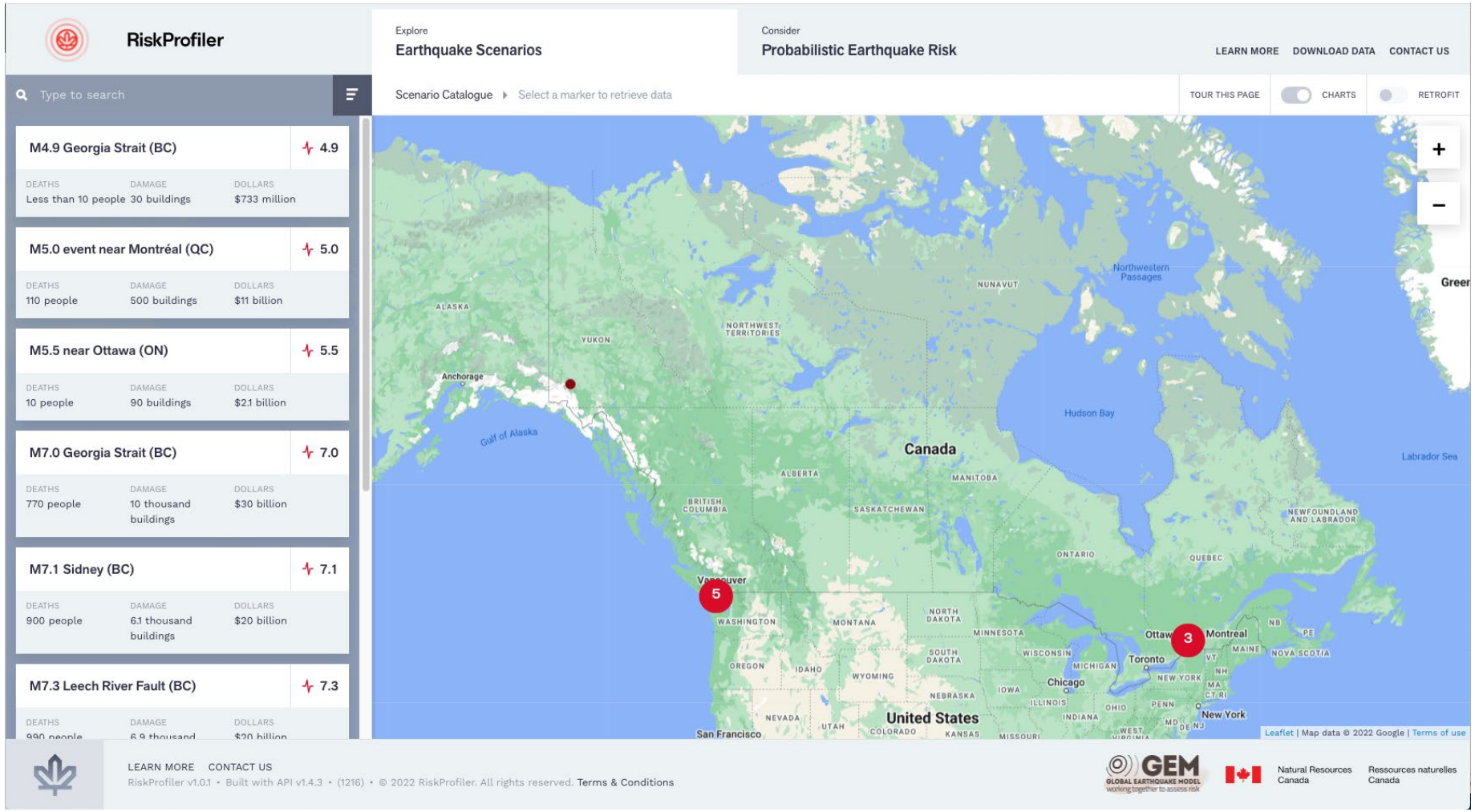
Cascadia M_w 9.0 Scenario



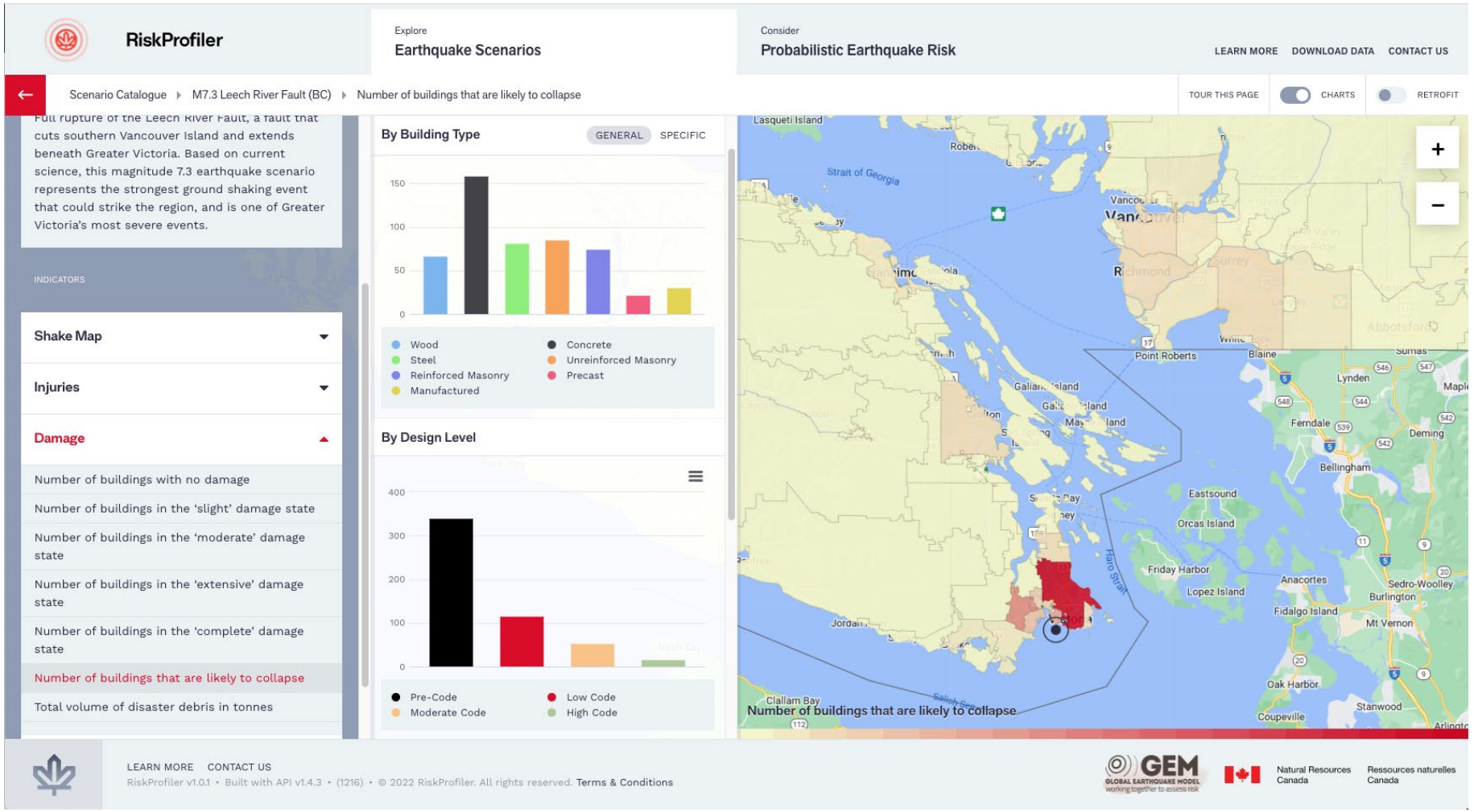


Cost in Canada:
$40 Billion (13% of BC's GDP)

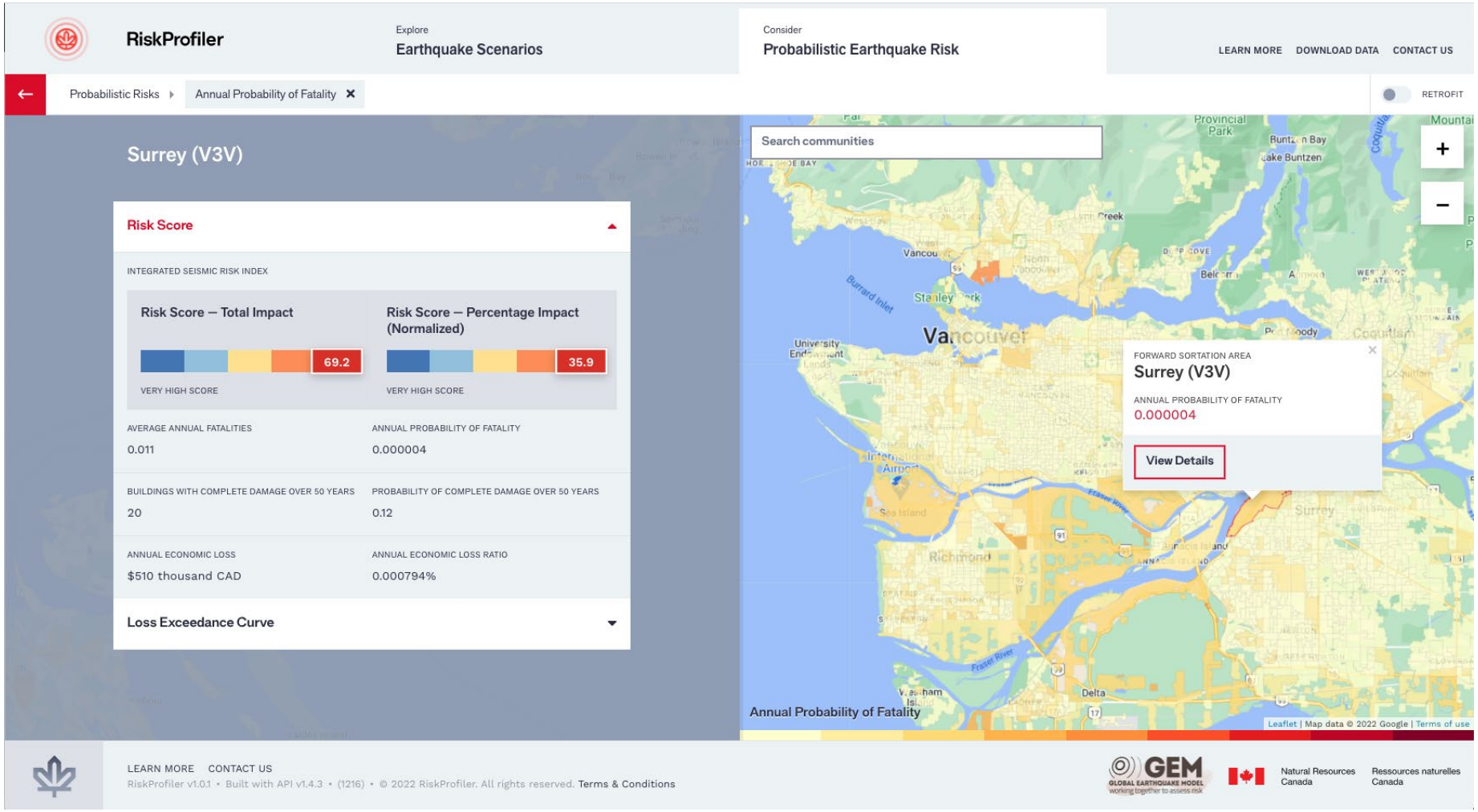
Risk Profiler



Risk Profiler



Risk Profiler



Rapid Disaster Modelling

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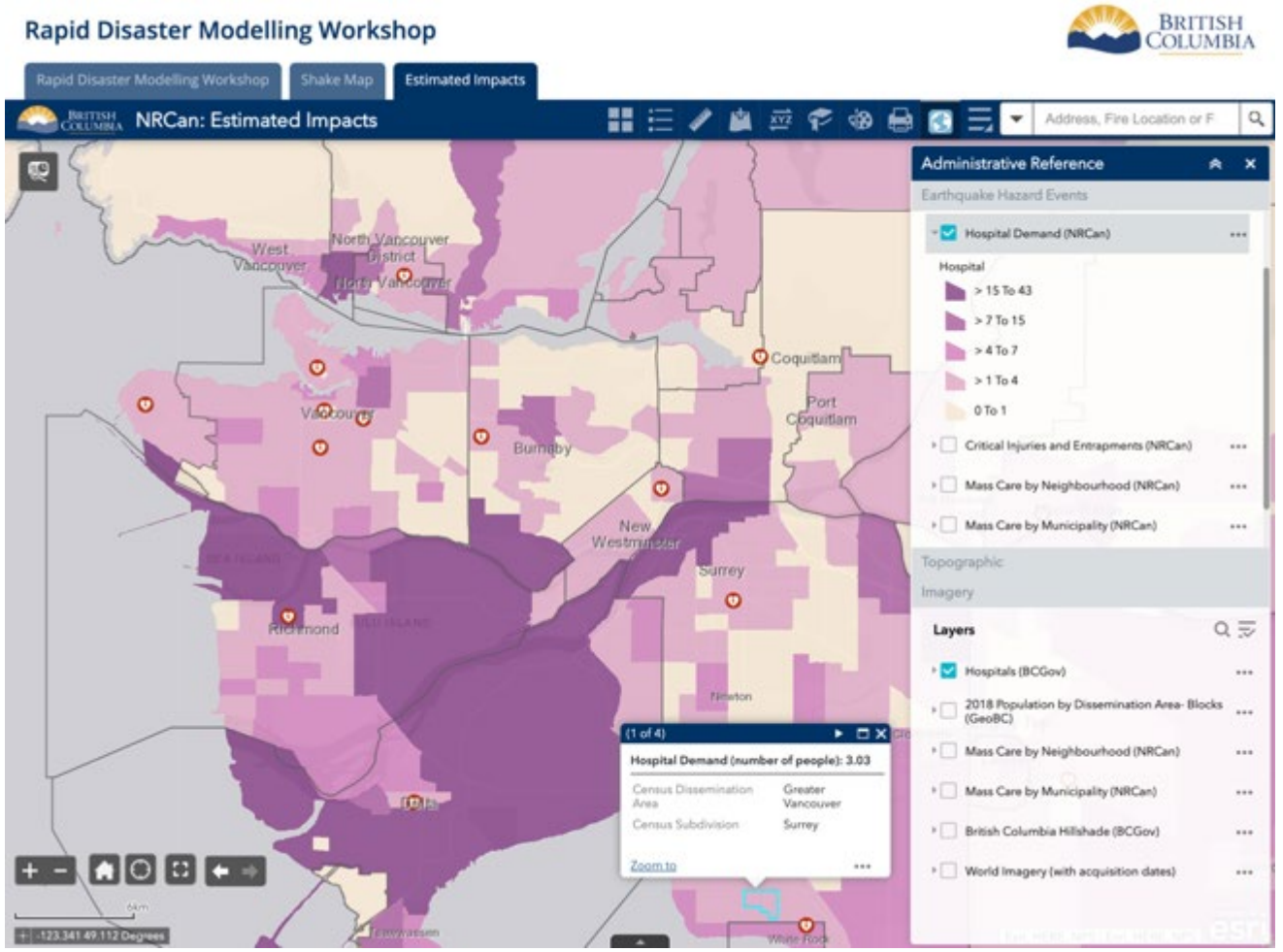

Hobbs et al., 2020, URBC