

New results on natural hazards in **PERTH**

A major assessment of natural hazard risk for Perth has been completed in collaboration with federal, state and local agencies.

Cities Project Perth provides authoritative new knowledge on the risks from the sudden onset of natural disasters in Australia's fourth largest city.

Perth's major hazards

The study area covered greater metropolitan Perth (figure 1). Major natural hazards considered in the project included:

- flood hazard in the Swan River and its tributaries
- severe wind hazard in metropolitan Perth
- earthquake risk in metropolitan Perth and the earthquake hazard in the wheatbelt up to 200 kilometres from Perth
- the susceptibility of the southwest coastline, including Perth beach suburbs, to sea level rise from climate change
- potential tsunami impacts on the coastline

The project also investigated socioeconomic factors that might affect the capacity of Perth citizens to recover from natural disasters, and compared WA with other Australian states.

Work included the preparation of more than a dozen major spatial databases and risk assessment models, including the flood hazard model and comprehensive building and building footprint databases, digital elevation models and GIS hazard maps.

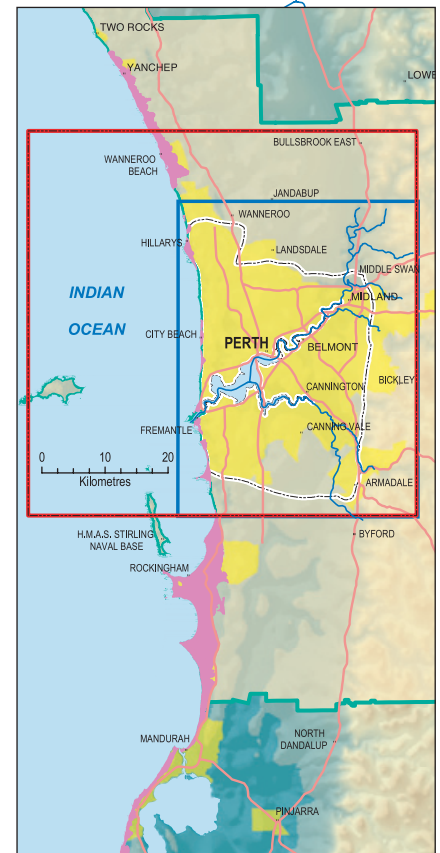
Key findings

- Cool season storms and tropical cyclones that move southwards, often with associated bushfires, have caused southwest WA's highest natural hazard insurance losses in the past. Cities Project Perth found that communities with high exposure to wind, such as coastal communities, face a measurably higher wind hazard than current building codes describe.
- More wheatbelt communities have been included in an enlarged earthquake source zone east of Perth, rating them at higher hazard than described in the current earthquake loadings standard.
- Potential losses from earthquakes are considerably higher than estimates of historical costs of earthquakes in WA.
- Eight flood scenarios have been modelled for the Swan River, with annual exceedance probabilities ranging from 0.05% to 10%. That is, the most probable scenario event modeled had flood levels with a likelihood of one in ten (or 10%) of being exceeded in any one year. The rarest scenario modeled had flood levels with a likelihood of one in 2 000 (or 0.05%) of being exceeded in any one year.
- As the Perth metropolitan area has a high number of households with relatively high economic resources, a large majority of households in the area would be able to draw on their own economic resources to assist recovery after a natural disaster. However, households in some areas could find the recovery process hard because of limited financial capacity.
- WA's strong community network will be a positive source of support in managing recovery from natural disasters.

Participating agencies

Many WA and local government agencies participated in the four-year project. They continue to play a key role as custodians of the project's models and data and by implementing policy and practice based on the results. Our core partners were the WA Fire and Emergency Services Authority, the WA Department for Planning and Infrastructure, the WA Department of Environment, and the Bureau of Meteorology's WA Regional Office.

The Cities Project Perth report will be launched in Perth on 8 June by Parliamentary Secretary Warren Entsch, and a half-day workshop for local and regional emergency managers and other stakeholders will be held to discuss the results and their implications for Perth.



Cities Project Perth Urban Setting

- Towns or Localities
- Flood Hazard Study Area
- Streams
- Main Streams
- Major Roads
- Wind Hazard Study Area
- Coastal Erosion Susceptibility Study Areas (near urban areas)
- Flood Hazard Study Area
- Builtup Area (Greater Perth)
- Building Database Study Area for Earthquake Risk Assessment and Damage Cost Model
- Area of Social Vulnerability Research

▲ **Figure 1.** The study areas for Cities Project Perth.

The report can be ordered from www.ga.gov.au/sales. The full report will be also available for download on the Geoscience Australia website.

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