

COMMUNITY STRATEGY DEVELOPMENT FOR REDUCING EARTHQUAKE RISK IN WESTERN AUSTRALIA

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Stephen Gray^{1,3}, Paul Martin⁵, Mark Edwards^{1,2}, Mike Griffith^{1,4}, Hossein Derakhshan^{1,4}

¹ Bushfire and Natural Hazards CRC

² Geoscience Australia

³ Department of Fire and Emergency Services WA

⁴ The University of Adelaide

⁵ Shire of York

Corresponding author: stephen.gray@dfes.wa.gov.au

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ABSTRACT

While the earthquake hazard in Australia is generally low by world standards, its severity does include higher hazard in some regions. This is the case in the Yilgarn region east of Perth as highlighted by the 1968 Meckering Earthquake and the observed seismic activity of the region in the last seventy years. Where building construction has not considered earthquake hazard the risk to communities can be significant. This is an issue for the township of York which is WA's oldest inland settlement and has a high proportion of heritage buildings that are vulnerable to earthquake. The presence of high risk buildings of this type is a challenge for local government, emergency management and other government agencies with a role in community recovery after disasters.

In the Bushfire and Natural Hazards CRC (BNHCRC) a project called *Cost-effective mitigation strategy development for building related earthquake risk* is developing information on cost effective strategies for retrofitting vulnerable buildings. The project scope has been augmented to examine the effectiveness of a range of strategies for addressing high risk structures. This is a collaborative study involving a partnership approach between state and local government along with academic and government researchers under the BNHCRC. The project will utilise the mitigation approaches developed by the CRC within a range of potential roll-out options to virtually retrofit the town of York. The net benefits of each will be assessed considering avoided damage, impacts on occupants, lost rental income, and disruption to business activity and households.

In this presentation the motivation for this collaborative effort will be discussed in the context of an improved understanding of natural hazard risk in WA, the increasing focus on investing in risk mitigation as opposed to response and recovery, and the shared interest of both State and Local government to promote resilience in vulnerable communities. The outcomes of a broad stakeholder workshop convened in York on the 9th August 2018 will be described in which strategies for providing incentives for risk reduction were identified. The importance of risk information in informing property owners and communities is discussed and the need to address their apprehension in addressing vulnerability with heritage listed structures. Finally, the value of broader measures of avoided community impacts beyond the direct monetary in decision making is highlighted and the linkages being made to another BNHCRC project called *Economics of natural hazards* that will enable intangible (non-market) values to be included in a quantitative manner.