

Lae, a City caught between two plates - 15 years of Deformation Measurements with GPS

Richard Stanaway

Quickclose

PO Box 1364 Carlton VIC 3053 Australia
email: *richard.stanaway@quickclose.com.au*

Laura Wallace

Institute of Geological and Nuclear Sciences

PO Box 30368, Lower Hutt 5040, New Zealand
email: *l.wallace@gns.cri.nz*

Zebedee Sombo, Johnson Peter, Trevor Palusi, Ben Safomea and John Nathan

*Department of Surveying and Land Studies
Papua New Guinea University of Technology*

Locked Bag, Lae, Papua New Guinea
email: *zsombo@survey.unitech.ac.pg*

Abstract

Lae is located in the Ramu-Markham Fault Zone where the New Guinea Highlands and South Bismarck tectonic plates are converging at up to 50 mm/yr. The city is caught in a giant geological vice and the seismic hazard is significant. More than 15 years of GPS measurements collected by staff and students of The Department of Surveying and Land Studies at Unitech, as well as researchers from the USA and Australia, have been analysed. The results show how rapidly Lae city and its survey network is deforming. The paper explains how these measurements tie in with the regional geological setting and also highlights some of the potential seismic hazards that the city faces.