

RISK MODELLING AS A TOOL TO SUPPORT NATURAL HAZARD RISK MANAGEMENT IN NEW ZEALAND LOCAL GOVERNMENT



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THE BENEFITS OF RISK MODELLING:

Demand for natural hazard risk modelling has significantly increased over the last few decades as we seek to use risk modelling to assess the consequences for hazard scenarios we have little historical information about.

By giving an estimate of loss, risk models provide policy makers and decision makers with a starting point for the risk communication process and decisions for natural hazard management.

NZ LOCAL GOVERNMENT RISK MODELLING NEEDS:

Focus groups were run across New Zealand to identify where local government needed risk data and information. Figure 2 sets out the most common needs identified:

- Response related information needs (red)
- Pre-event communication (blue)
- Lifelines information (orange)
- Land use planning (green)
- Socio-cultural information (grey)
- Multi-hazards and economic losses cross cut the identified needs (purple and khaki)

CHALLENGES FOR RISK MODELLING IN NZ LOCAL GOVERNMENT:

While local government saw the value in risk modelling, some fundamental challenges were identified which limits its use:

- Uncertainty over council natural hazards management – where natural hazard management is spread across multiple council functions and there is no mandated lead role.
- Limited use of 'knowledge brokers' and 'knowledge connectors' – where councils don't have specific roles to move knowledge across functions so that it has greater impact.
- Immaturity of risk modelling and its data – where risk models are simple, 'klunky', cannot compute multi-hazard events or cascading consequences, and cannot be used to their fullest extent due to unavailability of data and expense of developing it.

RECOMMENDATIONS TO ENABLE RISK MODELLING:

We make the following recommendations to enable risk modelling as a communication tool to better develop policy and procedure for natural hazard management:

- Legislate greater mandate for how natural hazard risk management is achieved in New Zealand local government.
- Adopt effective and meaningful participatory approaches for developing natural hazard risk management policy.
- Support and enable the movement of knowledge for natural hazard risk management through the development of 'knowledge broker' and 'knowledge connector' roles.
- Enable greater capacity and capability building for collecting, managing and using natural hazard risk data so that it is well known, available, usable, and valuable.

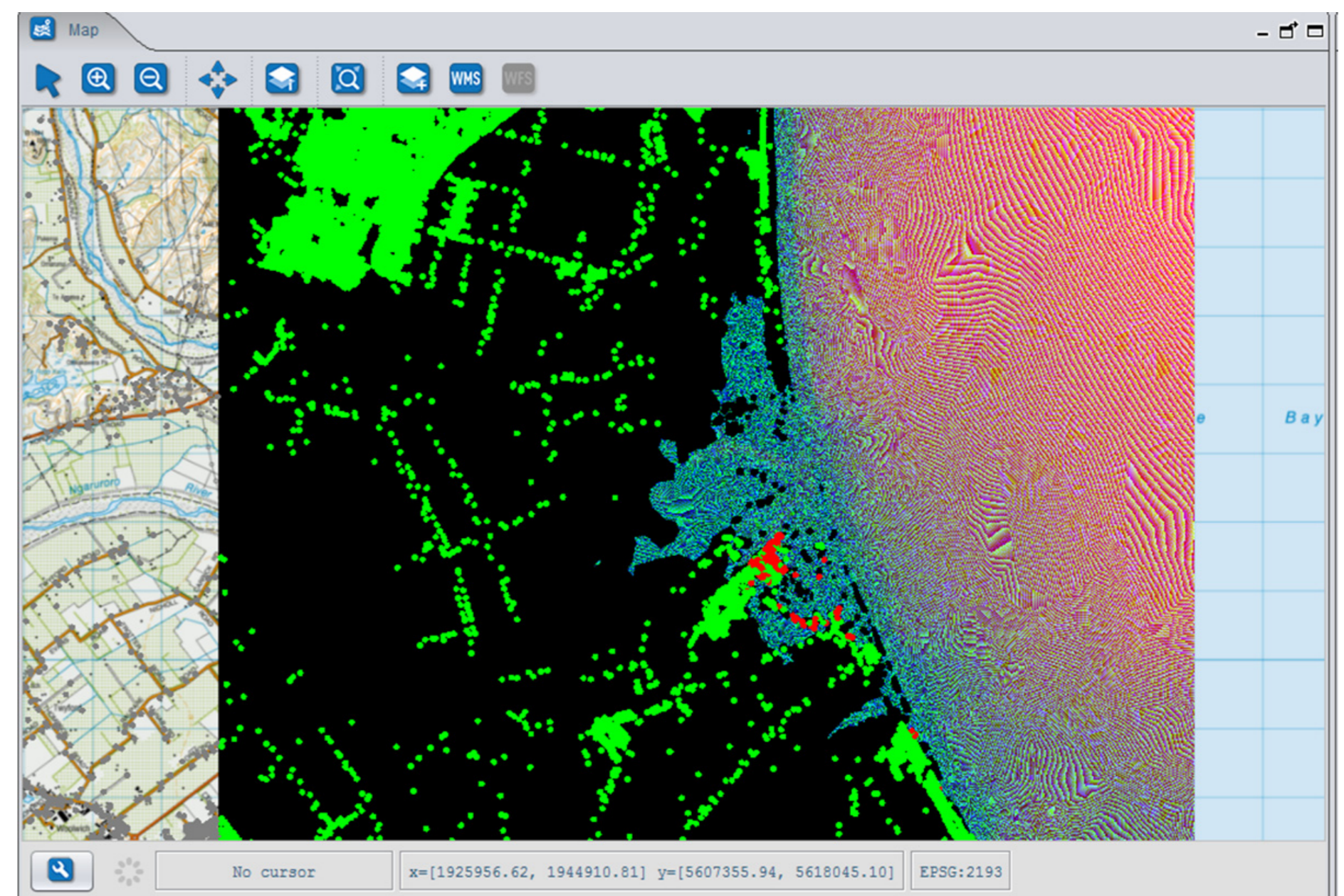


Figure 1: View of asset vulnerability using RiskScape – a risk modelling tool developed for New Zealand natural hazard conditions

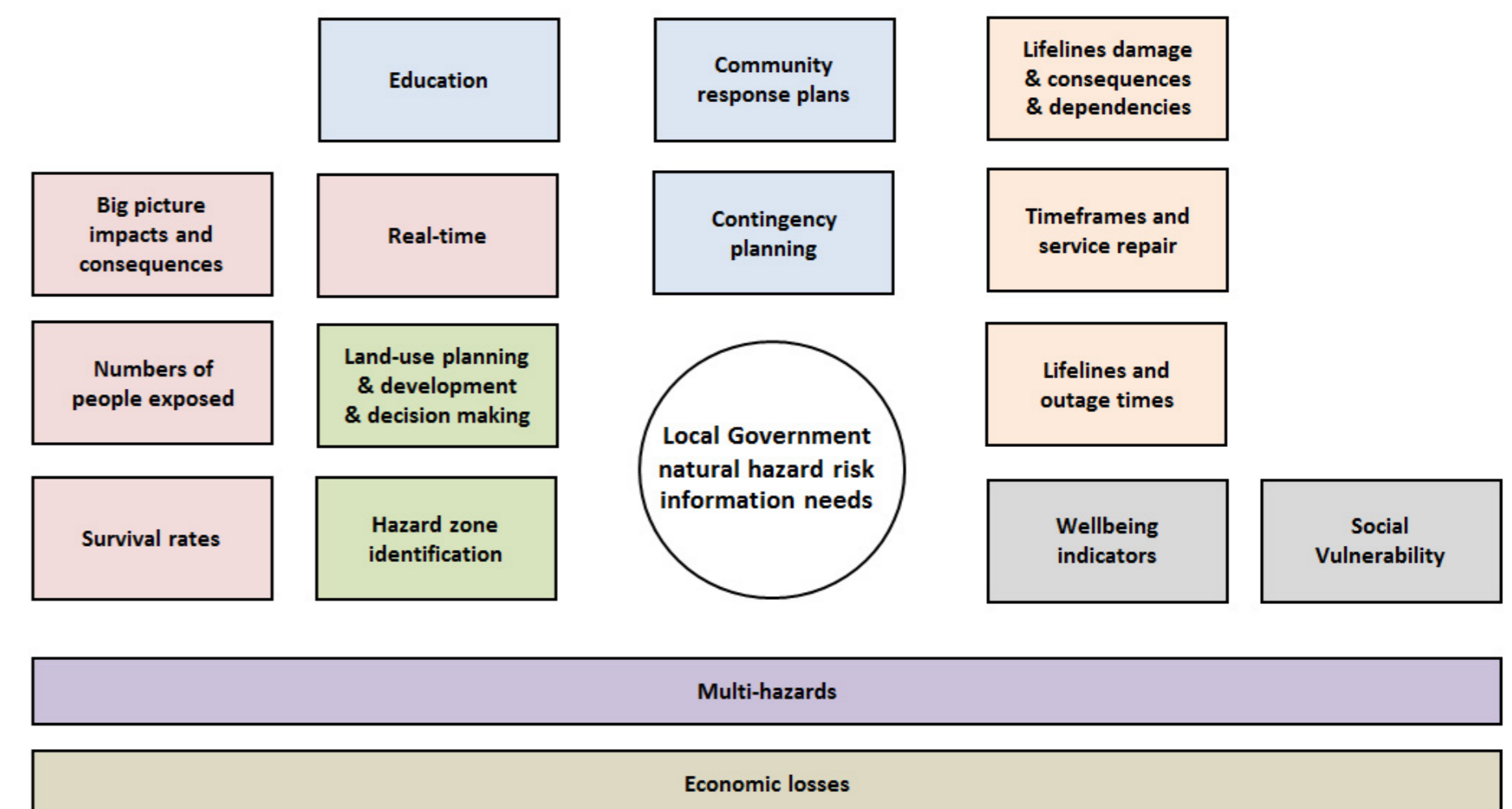


Figure 2: Local government risk information and data needs



Figure 3: RiskScape – risk model in use to inform local government decision making
Source: Dave Allen - NIWA



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