



New Zealand
Lifelines



ADB Transport Forum 2016

Transport Planning for Strengthening Disaster Resilient Infrastructure
- importance of strengthening disaster risk management of transport infrastructure for resilient communities and economy

Manila, 13 September 2016

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New Zealand Lifelines (Utilities) Council

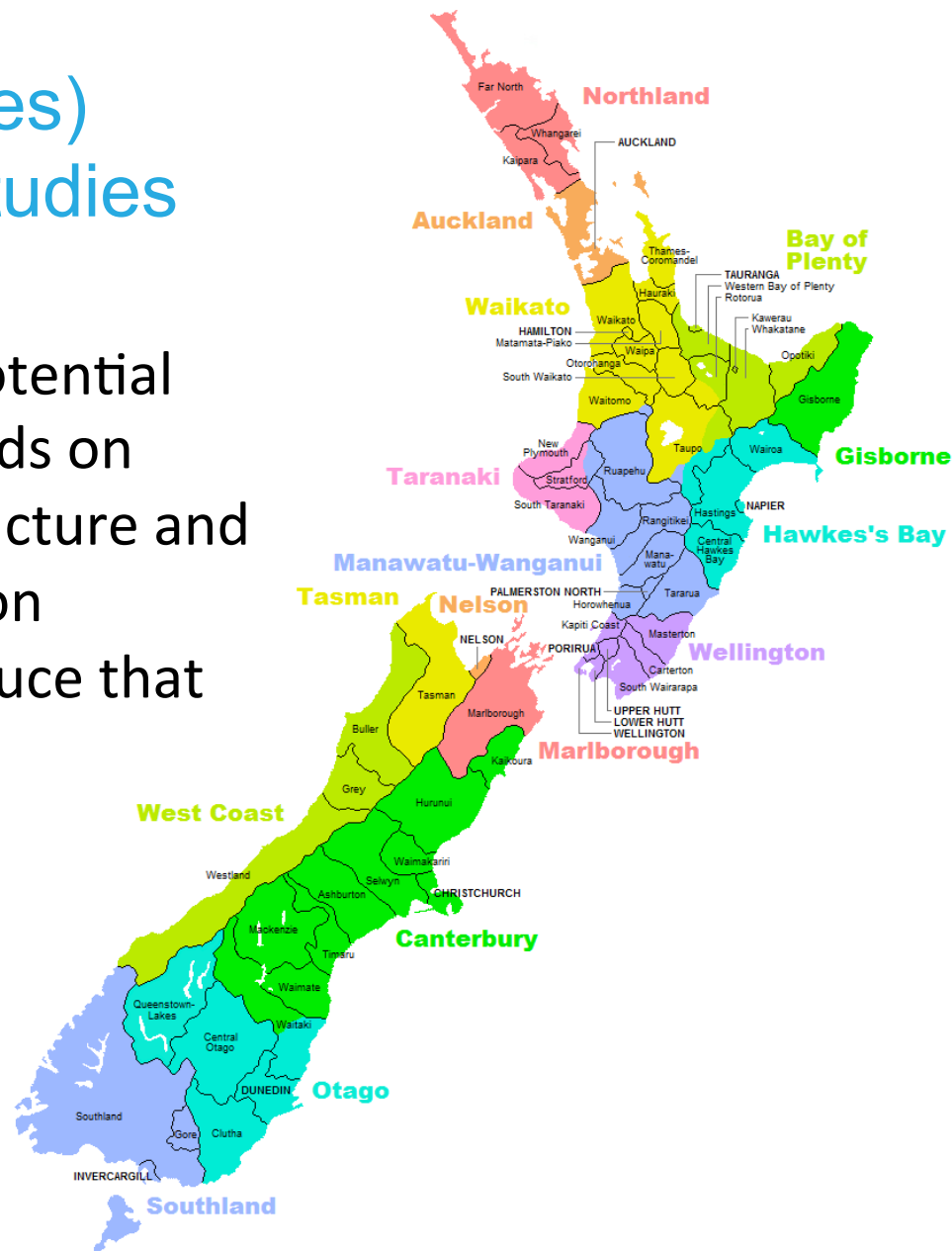


- Energy, Transport, Telecommunications, & Water
- Supporting resilient communities
- Supporting regional Lifelines Groups
 - Focusing on improving the consistency of output from regional vulnerability assessments
- Providing information to national lifeline utilities to assist them in their resilience work
- Liaising with relevant Government agencies on infrastructure resilience



Lifelines (Utilities) Vulnerability Studies

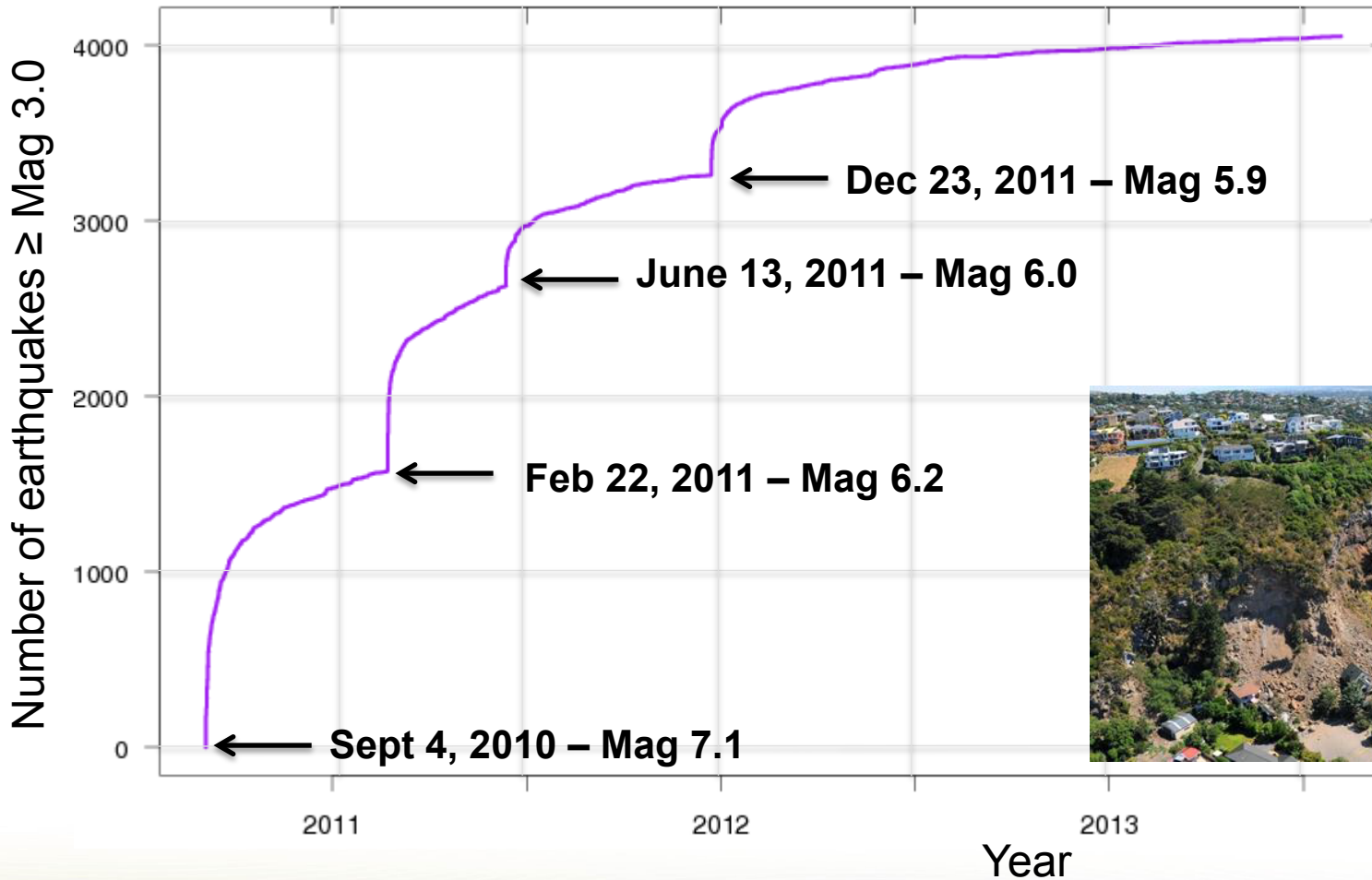
‘To assess the potential impacts of hazards on lifelines infrastructure and identify mitigation strategies to reduce that risk.’



Canterbury Earthquakes 2010 - ?



Canterbury Earthquake Decay Curve



Residential

- 100,000 homes damaged
- 7,860 homes in red zone



Central City

- 70% commercial buildings
- 3000 businesses displaced
- Cordon – 387ha



Infrastructure

- 52% road network (1000km)
- 31% sewer network (528km)



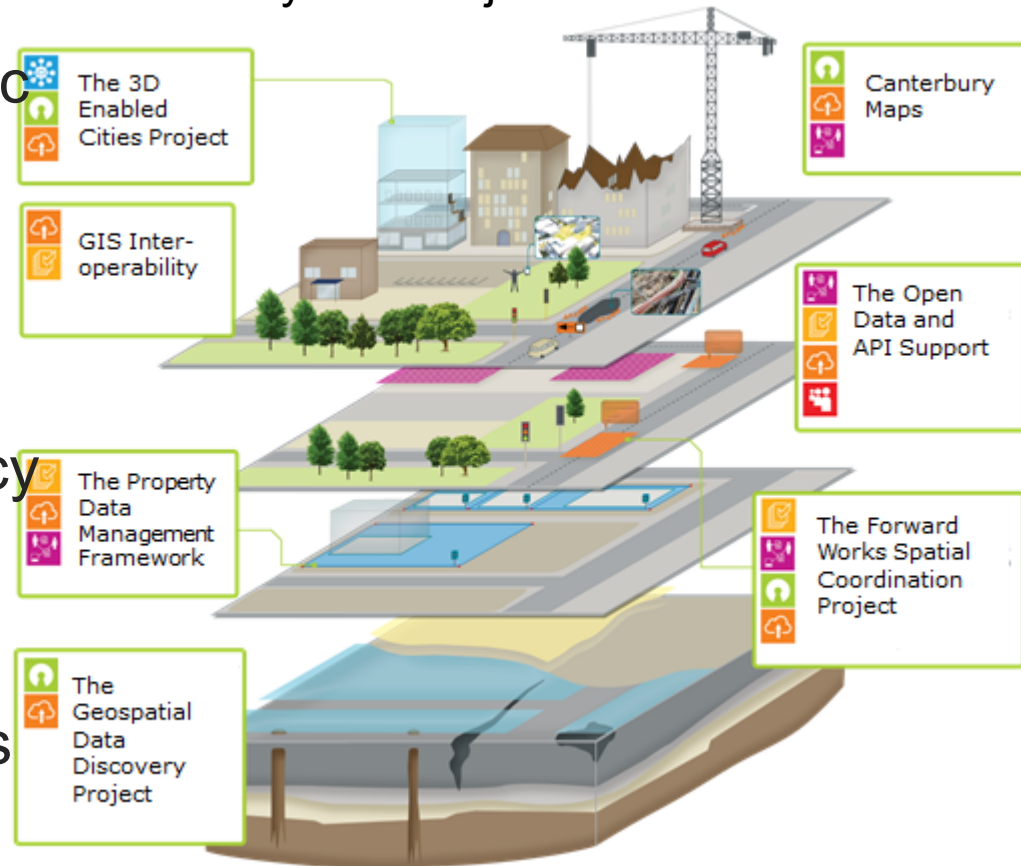
Social

- 185 casualties from 20 countries
- 6,800 treated for injuries

Geospatial

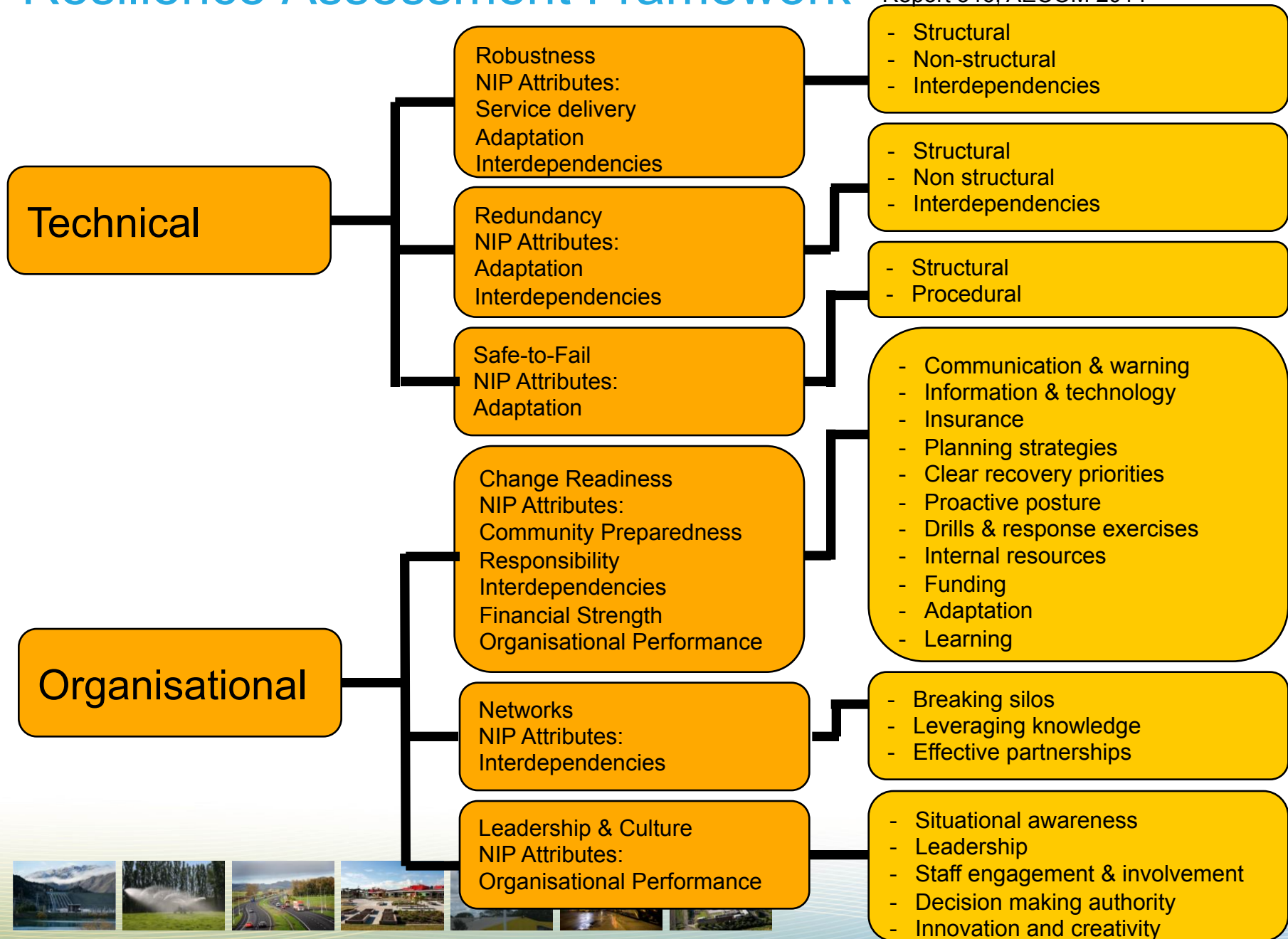
- “The Power of Where”
- Geospatial R&D Priorities doc
- National Geotech Database
- Smart Cities
- Greening the Greyfields
- Incident response, emergency services
- Aviation
- Intelligent Transport Systems
- Crowd sourcing
- National Forward Works Viewer

Canterbury SDI Project

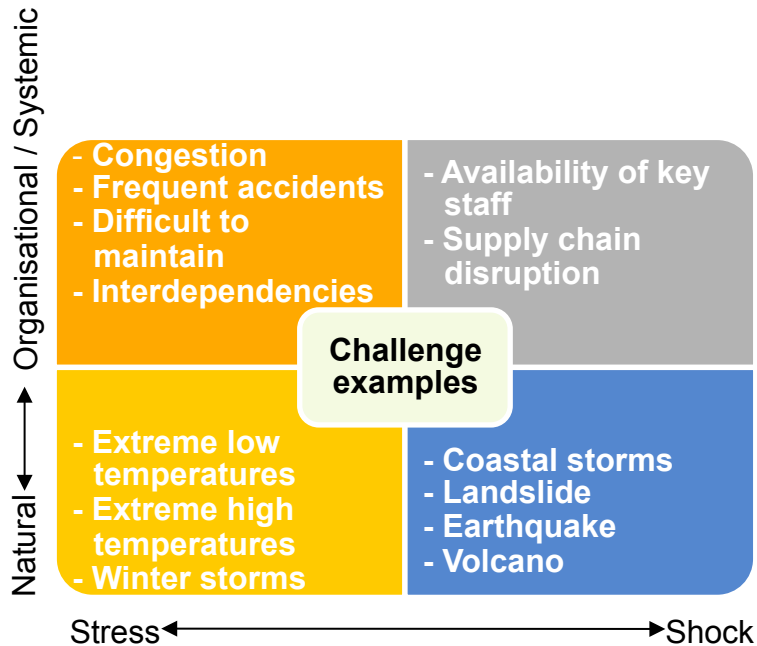


Resilience Assessment Framework

Source: Measuring the Resilience of Transport Infrastructure, NZTA Research Report 546, AECOM 2014



Valuing Resilience in Infrastructure Decision Support Tool



Identify challenges: The tool provides an initial ‘universe of challenges’ to the function of the system. This considers the spectrum of stresses to shocks, and both natural and organisational challenges

Likelihood: Based on the initial assessment of the types of challenges which could impact the asset, a high-level assessment of the likelihood and magnitude of the risks occurring, and the magnitude of the event, over time is undertaken.

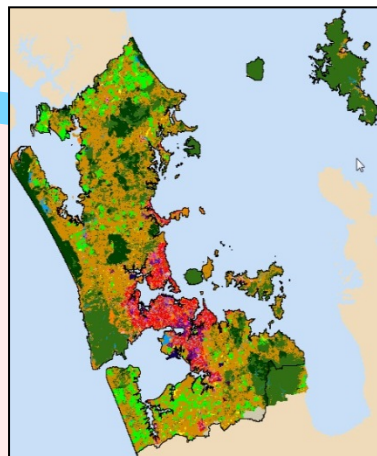
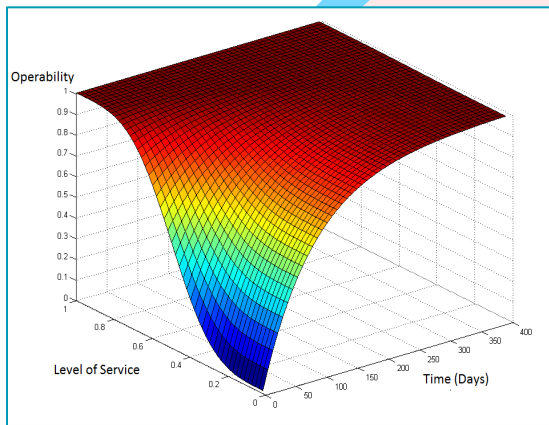
Time periods considered include present, +50-years & +100-years. This is key to incorporating the stresses of **climate change** into the assessment.

Based on the likelihood assessment a prioritisation is applied to the challenges to help focus thinking on controls.

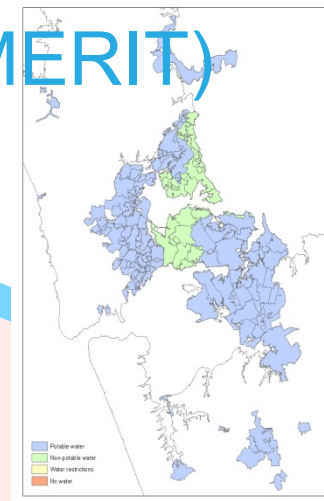
Outcome: Prioritisation of the challenges which could impact the level of service an asset provides over time



Economics of Resilient Infrastructure (MERIT)



Impacted Business

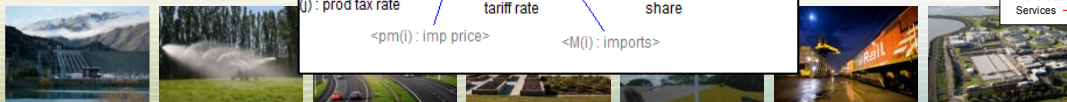
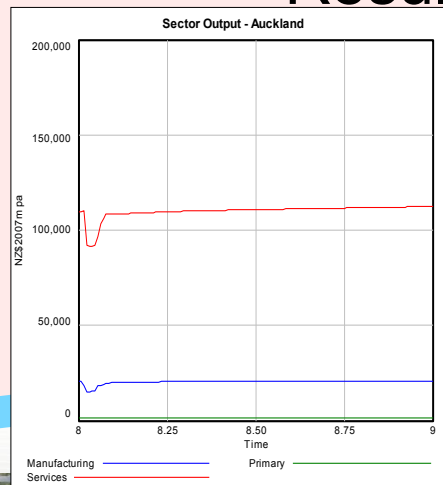
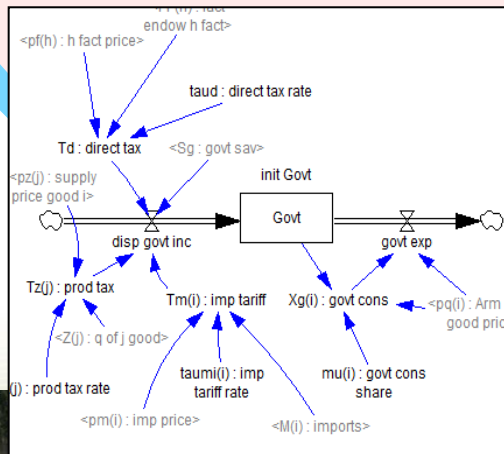


Outage maps

Business Operability

MERIT

Results





Your feedback is most welcome.

Resilient is something you are not something you do



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