

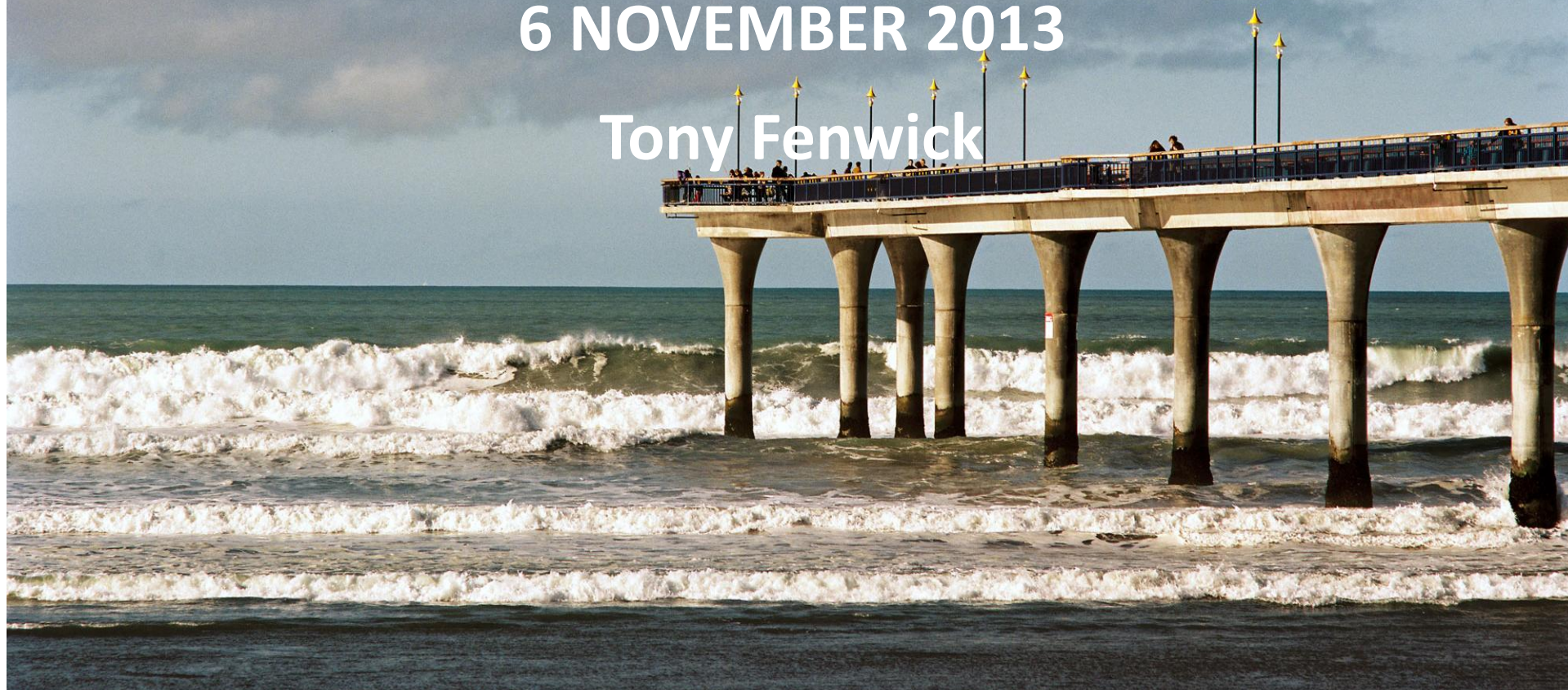


ECONOMICS *of*
RESILIENT
INFRASTRUCTURE

PRESENTATION TO
NATIONAL LIFELINES FORUM

6 NOVEMBER 2013

Tony Fenwick



This presentation covers

- “ What we are up to
- “ Why we’re doing it
- “ Who we are
- “ What’s new
- “ How we are doing it
- “ Stakeholder engagement

What we're doing

Building a model!

“MERIT”

**Measuring the Economics of Resilient
Infrastructure Tool**

Why

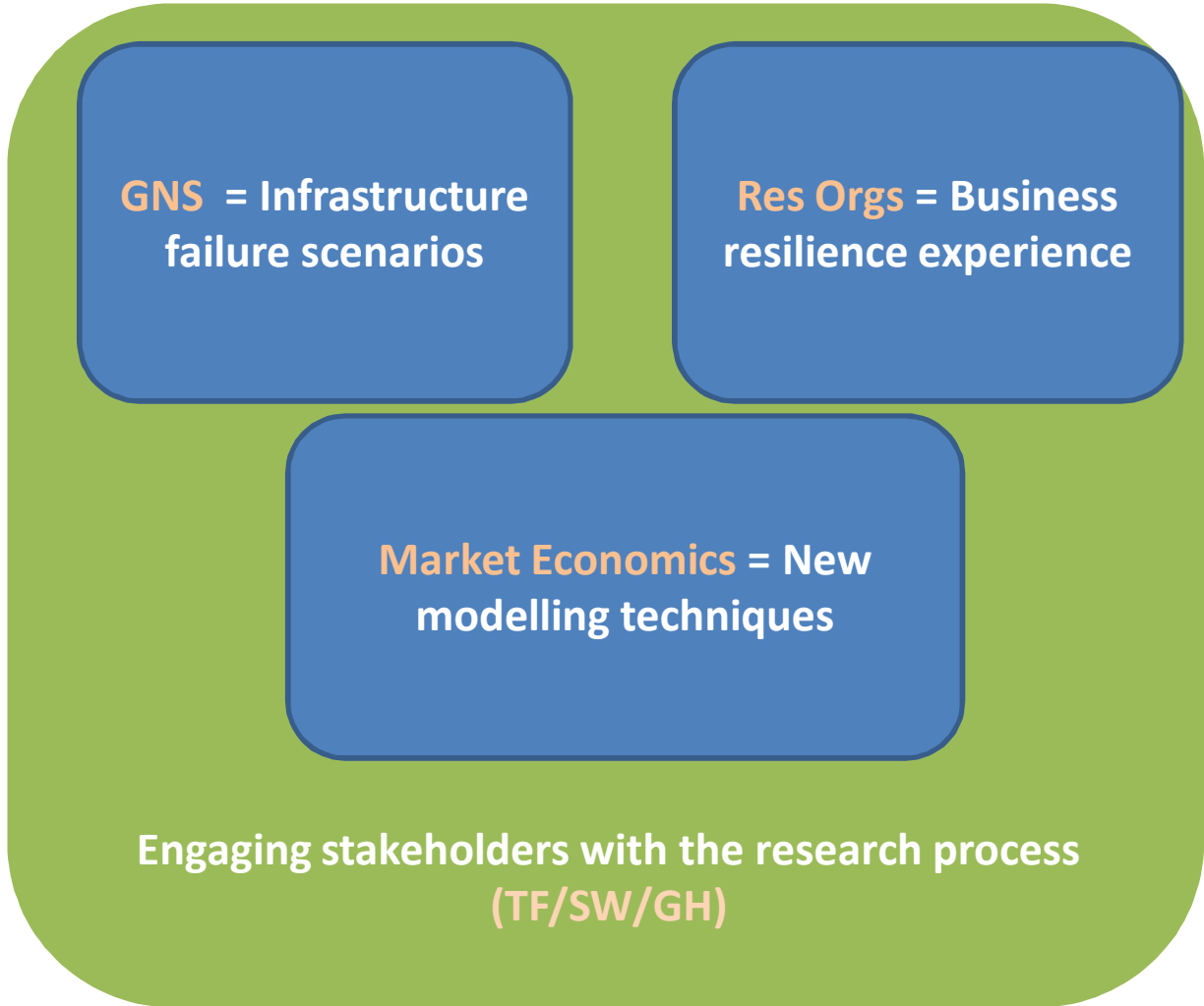
To develop understanding of full economic impacts of infrastructure failure

“ Full = first, second and subsequent rounds

To explore mitigation and response options

“ Options = policy, infrastructure, business

Who's involved



Tony Fenwick
Simon Worthington
Greg Holland

In more detail Failure scenarios

Auckland single outage scenarios

1. Electricity supply – Transpower & Vector
2. Water supply – Watercare

Near future – Christchurch scenario

Business resilience experience

Half way through deployment of survey to c 2400 organisations in Canterbury – expect to be finished by Christmas

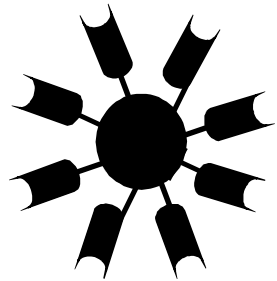
Turning to recovery pathway case studies

New modelling techniques (1)

- ” System dynamics approach (Vensim®)
- ” Based on general equilibrium principles
- ” Multi-regional
- ” Exogenous levers for users
- ” Take-up

- ” Progress
 - . Economic module developed
 - . Spatial module nearing completion
 - . Key datasets nearing completion
 - . Prototype interdependencies module under development

New modelling techniques (2)



**Geonamica[®]
integration
software**



Economic module



Population module



Spatial module



**Interdependency
module**



**Business adaptation
module**



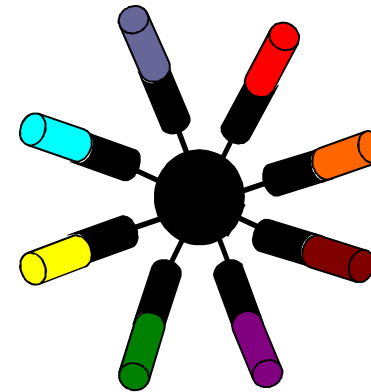
**Policy and strategic response
module**



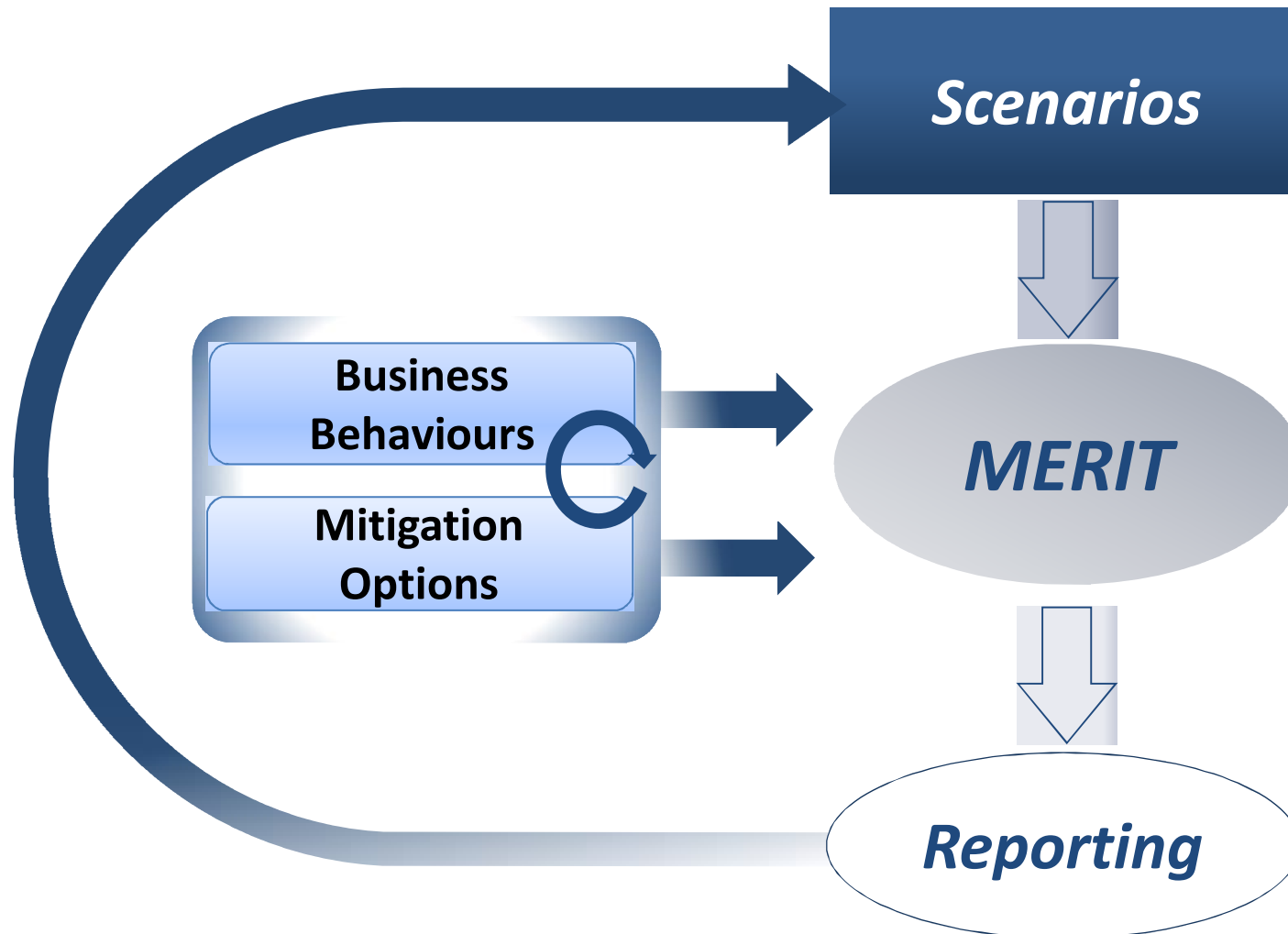
Datasets



(Other modules)



MERIT



Engaging stakeholders

Meetings with Lifeline Groups, local government, others

Coming your way:

- . 2013 – Further Christchurch meetings
- . 2014 – Full outreach strategy developed

Advisory Group = LGNZ, NIU (Treasury), NZCID, Auckland Council, Transpower

Research linkages

GNS – Riskscape, Interdependencies, “It’s Our Fault”

ResOrgs – resilience metrics and benchmarking; recovery trajectories of organisations in Canterbury

Market Economics - Interdependencies, Sustainable Pathways 2, Creating Futures, Faster Rebuilds with MRCGE, and Manaaki Taha Moana

How to get involved

- “ We are contacting range of stakeholders
- “ We need help – information, advice, data
- “ Enquiries welcome
- “ Further information: Click on
<http://www.naturalhazards.org.nz/NHRP/Hazard-themes/Societal-Resilience/Economics-of-Resilient-Infrastructure>

A thank-you to

MBIE

\$2.8 m over 4-years granted in the 2012
Investment Round