



POLICY BRIEF



Manaaki Whenua
Landcare Research

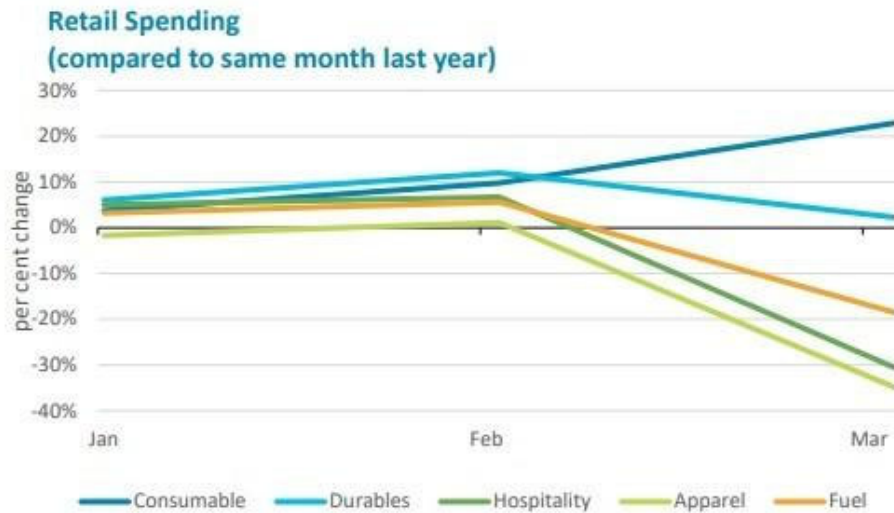
Mitigating cascading & compounding hazards in the time of pandemic

LINKonline

Patrick Walsh, Nick Cradock-Henry, and Suzie Greenhalgh

28 April 2020

Covid-19 impacts



Source: Stats NZ

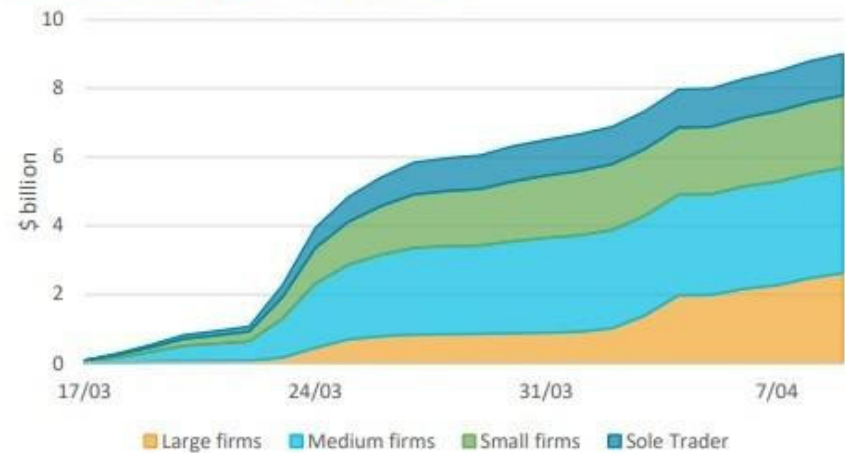
- Spending down
- Unemployment up
- Rising payments for wage subsidy

Jobseeker support Total recipients



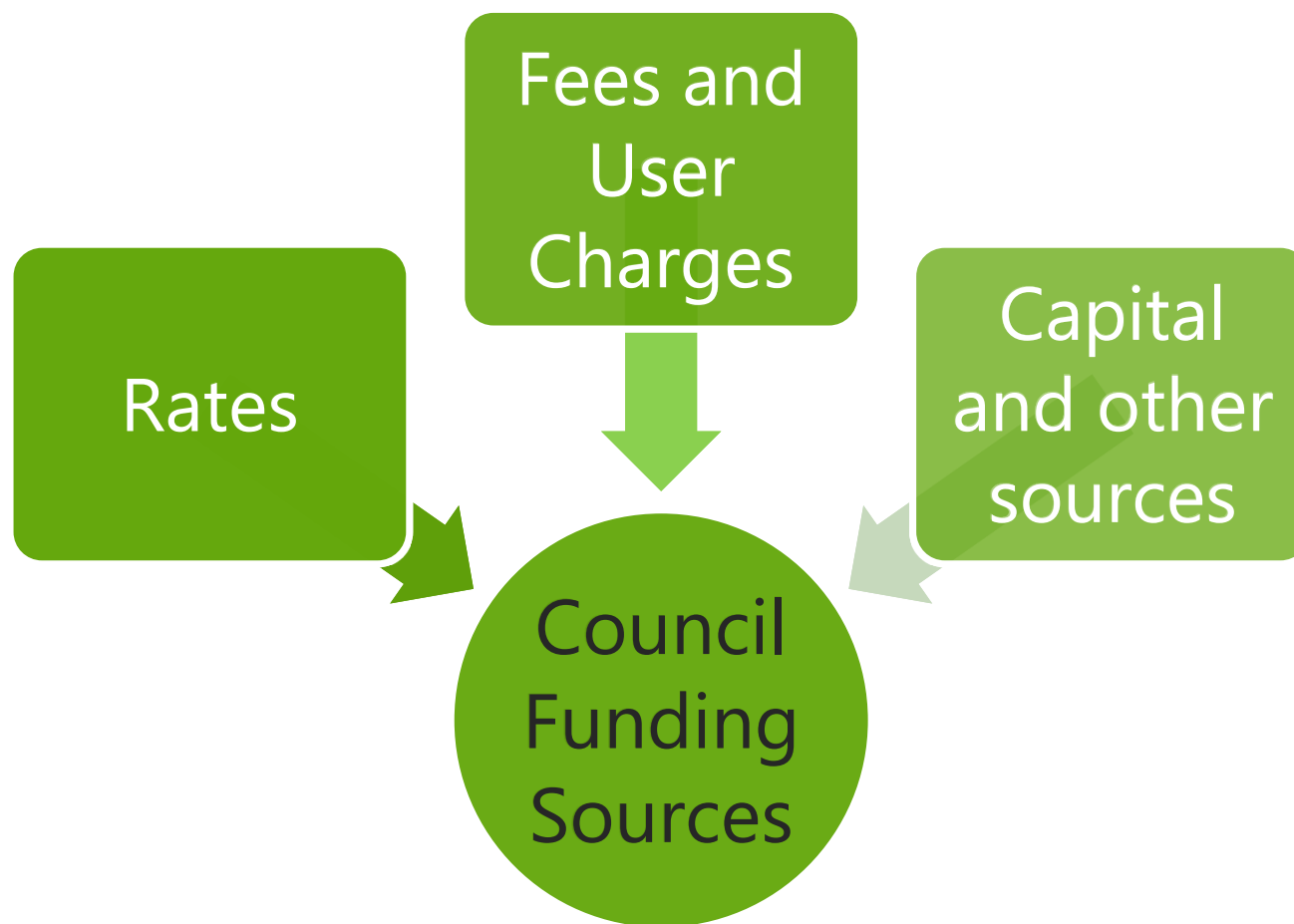
Source: MSD

Wage subsidy payments by firm size



Source: MSD





Friday, 24 April 2020

'Chilling': Queenstown goes from richest to one of the poorest

3820 42

Regions > Queenstown

7 Comments



Queenstown faces a difficult future. Photo: Getty Images/File

The "chilling" facts facing the region set to be hit hardest by Covid-19 have been laid out by Queenstown Lakes District Mayor Jim Boulton who says it has gone from the most successful region to potentially one of the poorest in a little over a month.



Coronavirus: Waipā suspends major infrastructure projects

Lawrence Gullery · 12:03, Mar 30 2020



WORLD NEWS APRIL 21, 2020 / 1:32 AM / 6 DAYS AGO

REUTERS

New Zealand's lockdown contained coronavirus. Now comes the hard part

Praveen Menon

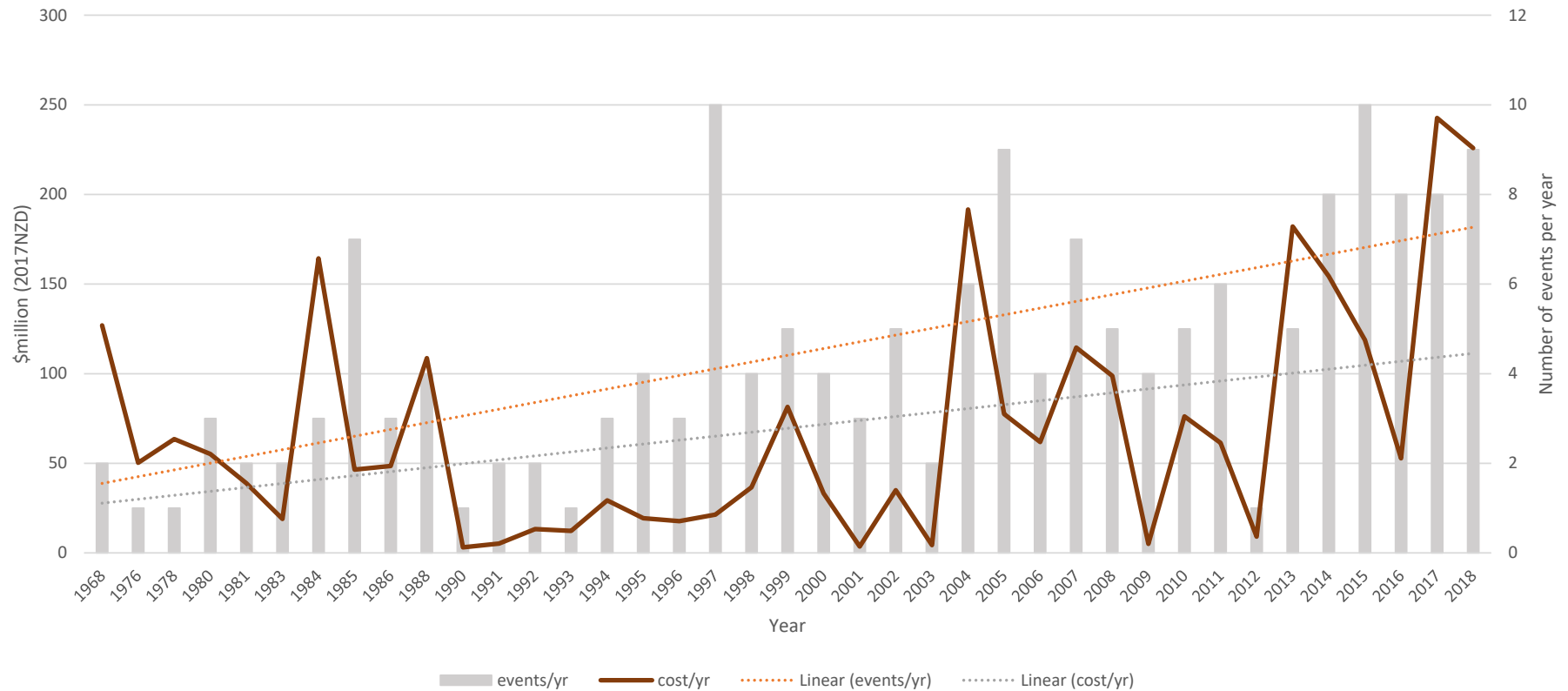
8 MIN READ



**How can the economic stimulus package
maximise benefits to New Zealand?**

Flood impacts exacerbated by climate change

Weather-related natural disaster insurance payouts since 1968
(not including crop damages)





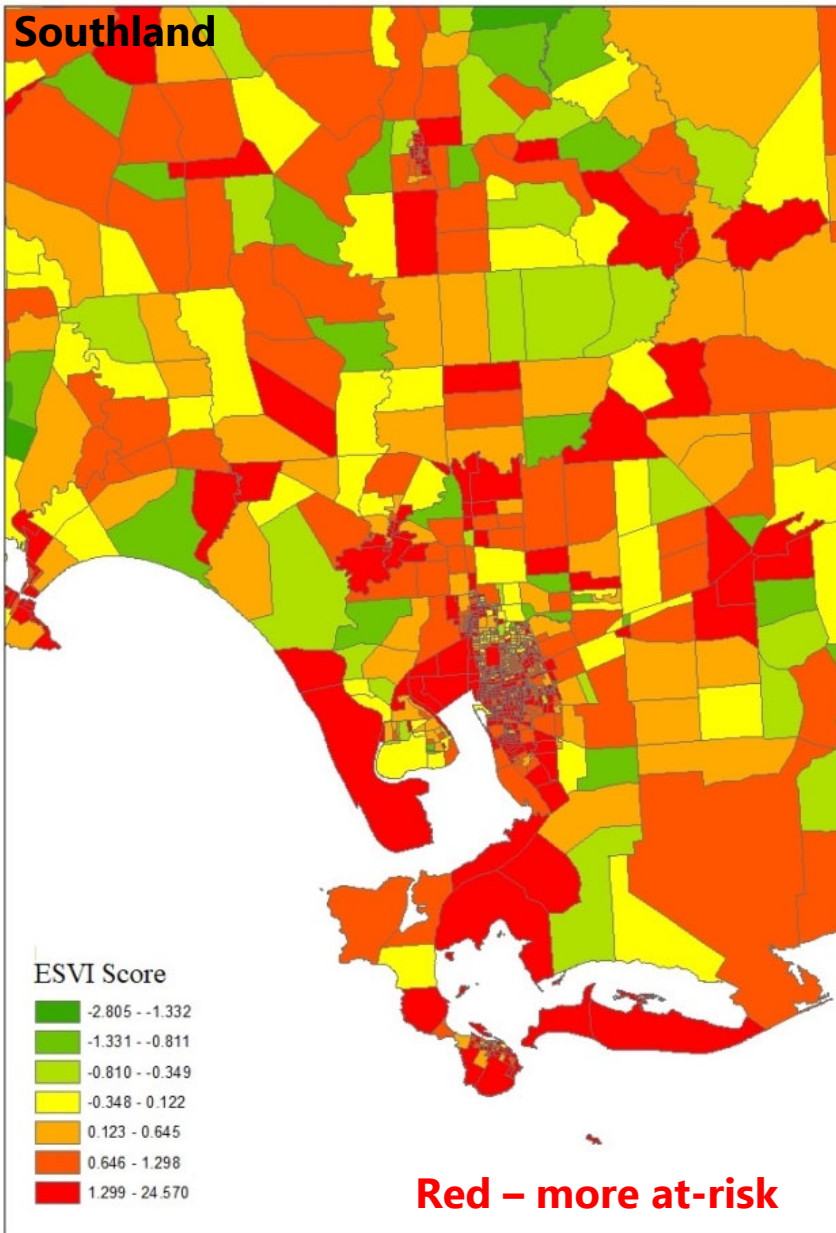
Without careful **resilience planning**, government systems and infrastructure already stretched to their limit may not be able to handle the next series of big floods.



Ability of infrastructure – but also of communities – to anticipate, absorb, adapt to, and/or rapidly recover from potentially disruptive event(s).



**Target at-risk areas with
Covid-19 induced economic impacts
and
flood hazard risk**



ESVI



- **Meshblock level**
- **Identify likely Covid-19 induced economic impacts**
- **Identify areas with greater respiratory risk**

ESVI variables

No vehicle

Income 20,000 or less

Dwelling owned

Internet access

Smokers

Married

3-Family households

Male

Age group: under 4

Age group: 5–9 yr olds

Age group: 65 plus

Couples with no children

Ethnicity: European

Ethnicity: Maori

Ethnicity: Pacific

Ethnicity: Asian

Bachelor's degree

No qualification

Full-time work

Part-time work

Unemployed

Not In labour force

Managers

Technical trade work

Clerical admin work

Labourers

Heat: Electric

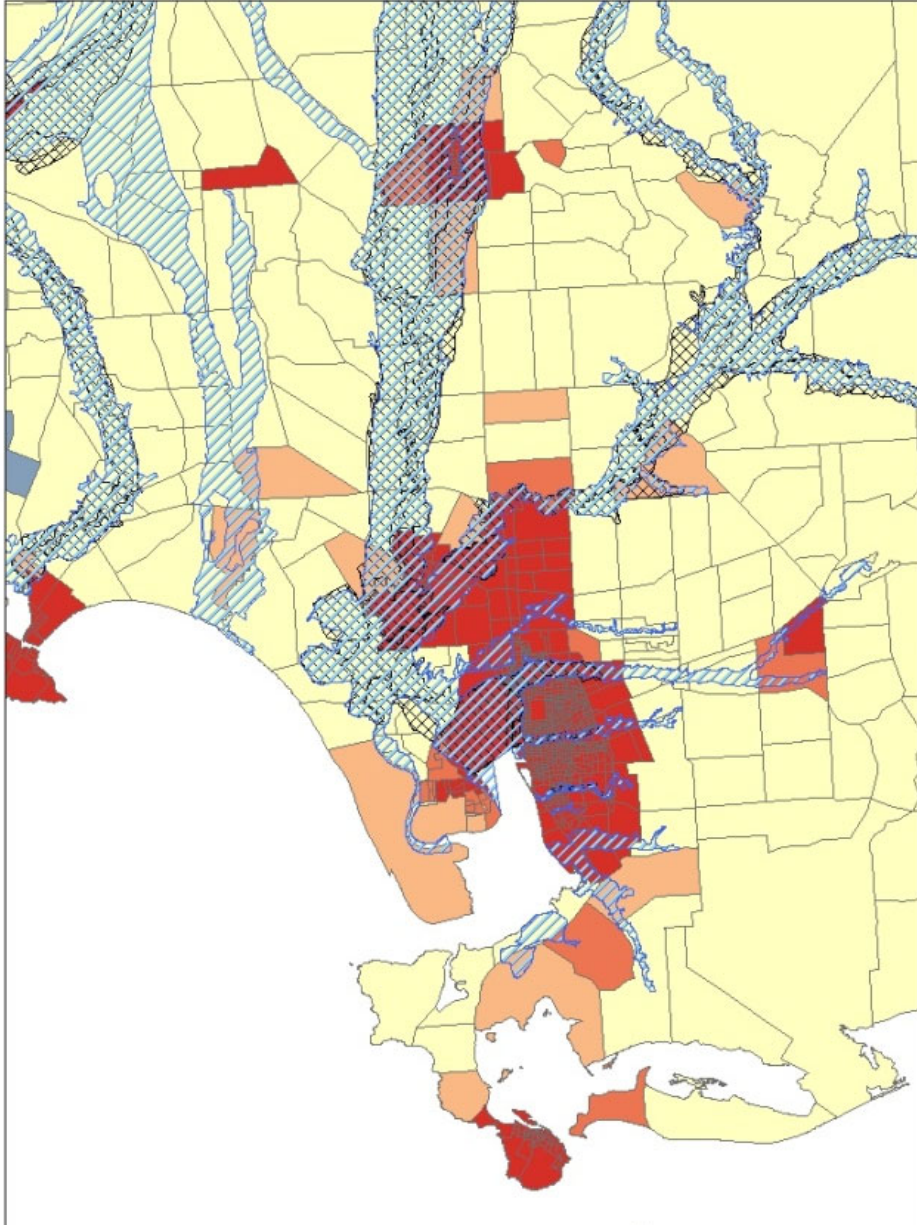
Heat: Gas

Heat: Bottled Gas

Heat: Wood

Heat: Coal

Heat: Solar



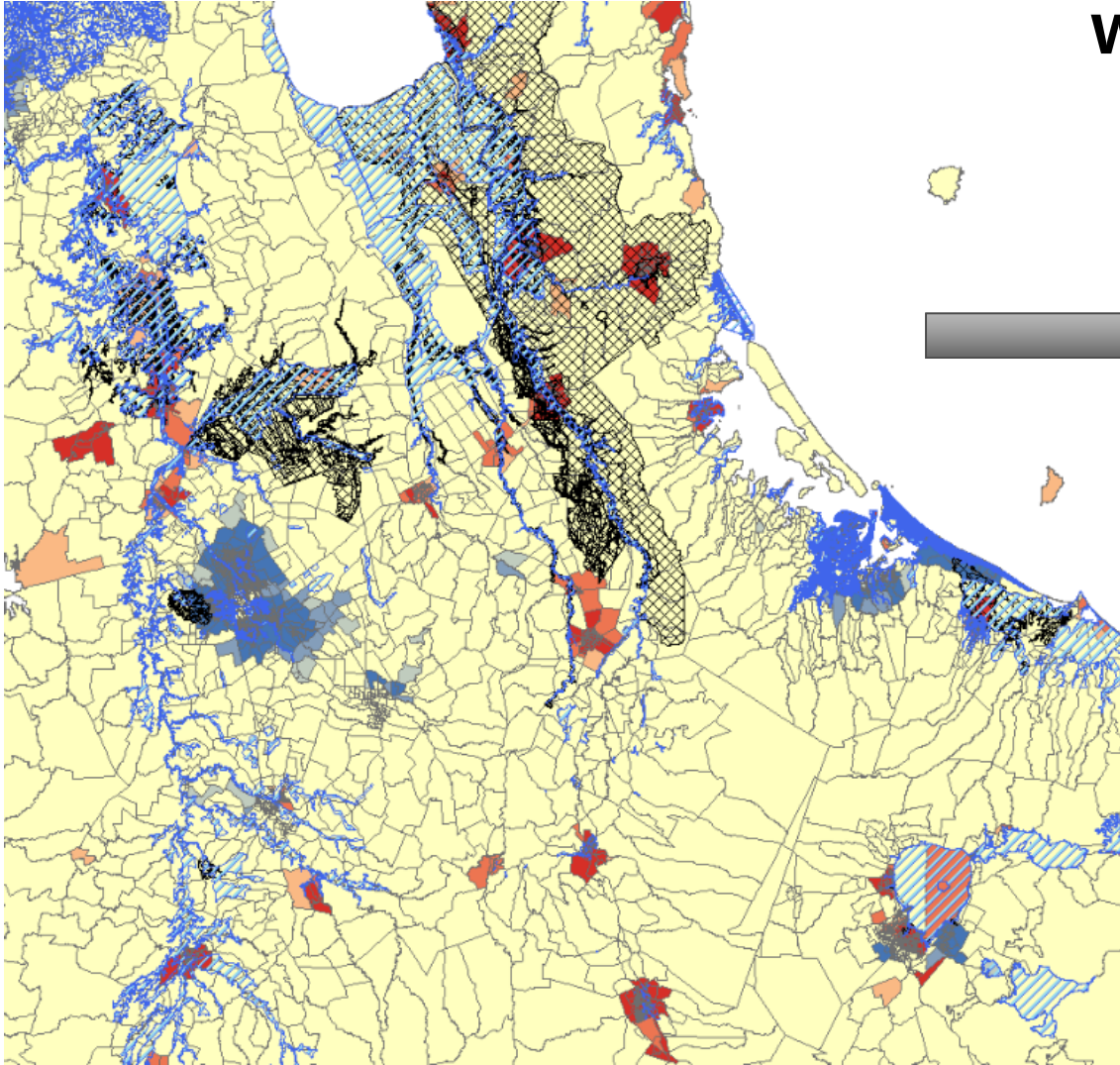
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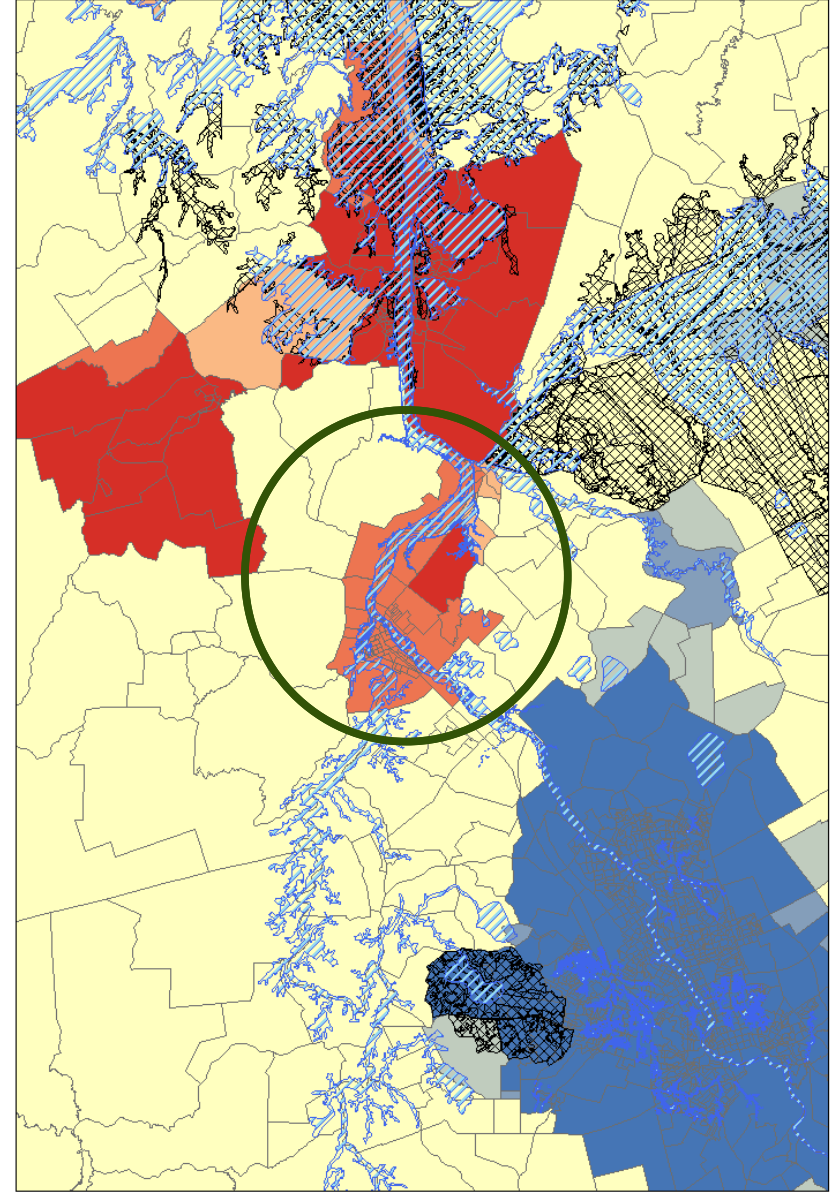
**ESVI hotspots,
Flood hazard zones &
Flood protection
infrastructure
to identify target areas for
stimulus spending**

→ Fund flood protection

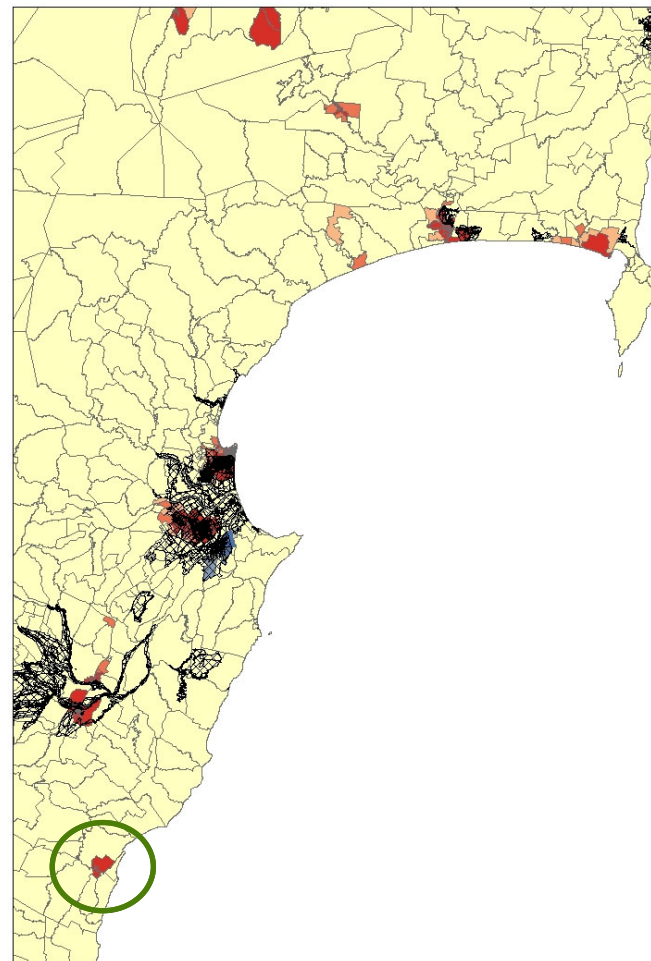
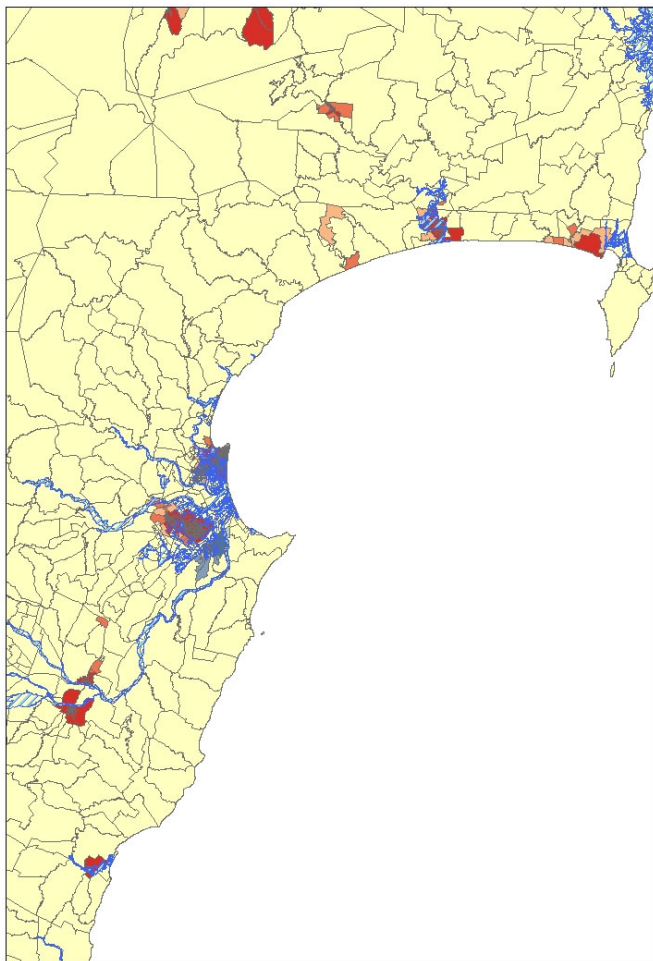
Central North Island



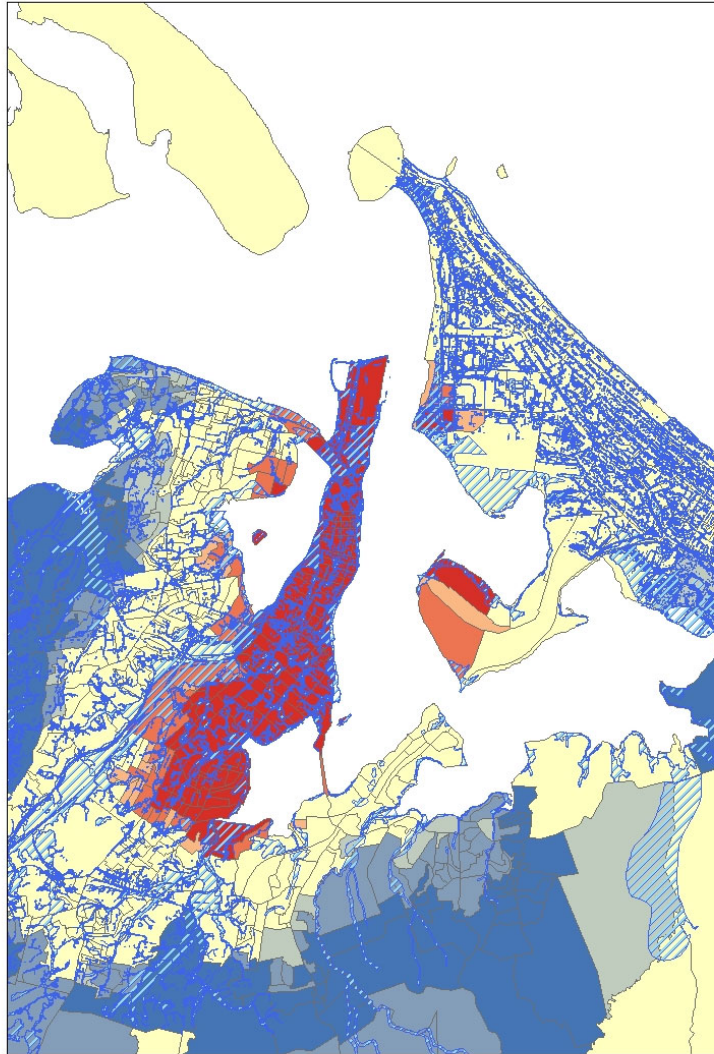
Ngaruwahia, Waikato



Hawke's Bay



Bay of Plenty





Opportunities to enhance national resilience

- Climate related losses increasing, disasters more complex
- Attention is shifting from response to recovery
- National Disaster Resilience Strategy (2019), National Climate Change Risk Assessment (2020), National Adaptation Plan (2022)
- Reducing vulnerability related to economic and social factors
 - Demographics
 - Income & employment
 - Strained emergency response systems
 - Sectoral vulnerability
 - Health, justice & social disparities



Pathway forward

- Socio-economic impacts of COVID-19 lockdown are not uniform
- Targeted investment can pay dividends for resilience: focus on combined flood risk and pandemic-related social and economic pressures
- Flood infrastructure spending can boost employment, economic recovery
- Green flood infrastructure provides additional benefits
 - Habitat
 - Water quality
 - Passive irrigation
 - Community identity and well-being
 - Recreational opportunities, etc.



Left: Lower Lam Tsoen River; Right: Ma Wat River

Community resilience

- Ways to enhance community resilience and well-being
- Emphasis on underlying social and economic conditions
- Capacity building, empowerment, and building networks
- Need for innovative solutions: some not feasible
 - community meeting space (not possible with social distancing) – enable remote participation
 - Community support (more challenging with social distancing)

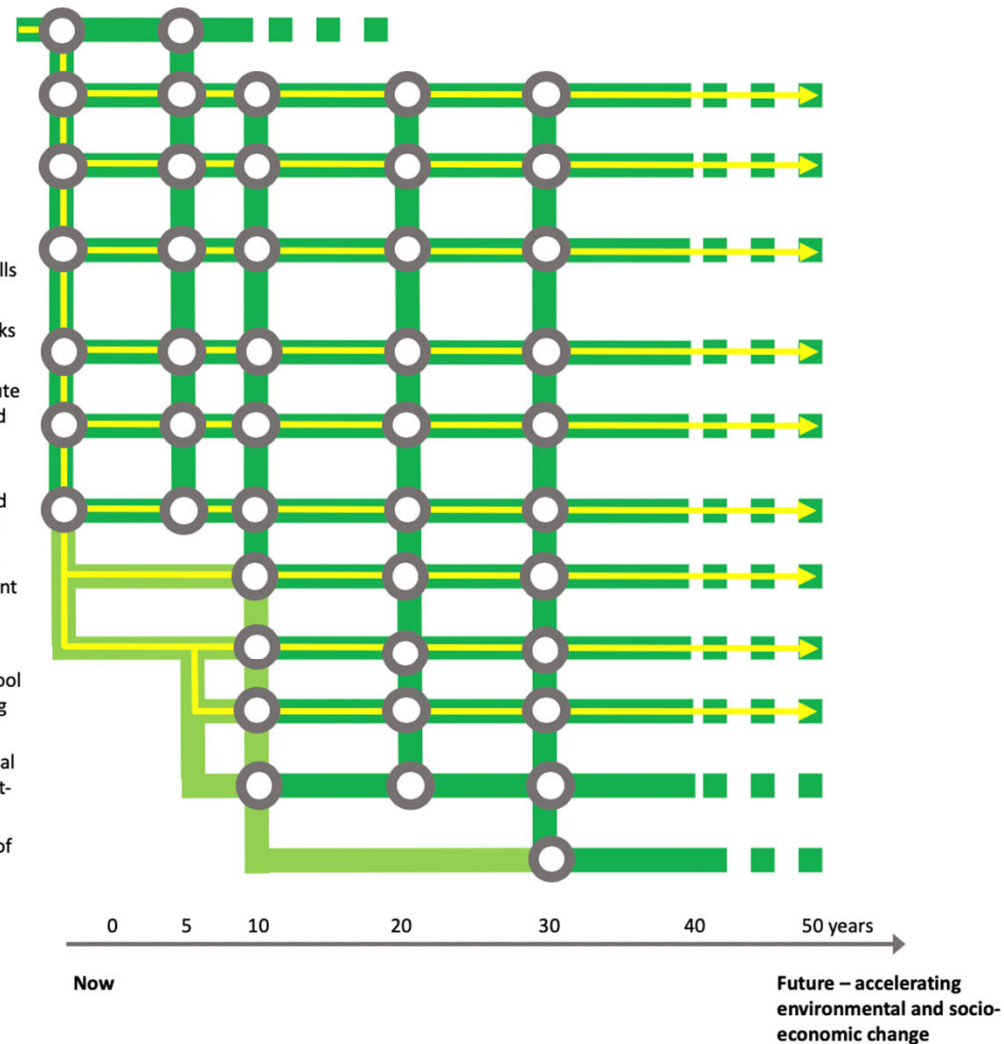


Key question

How can community resilience and well-being be enhanced or maintained in the face of growing environmental change, socio-economic inequality and urbanization?

No changes

- Engage community on adaptation planning and service provision
- Enhance understanding of Māori heritage and tikanga
- Support transition to new/alternative industries through job training and skills development
- Restore and improve rail links throughout Hawke's Bay
- Identify assets that contribute to community resilience and well-being
- Increase community education opportunities and awareness-raising activities
- Greening townships: parks, community and self-sufficient gardens
- Water-sensitive design
- Adult education / night school for upskilling and addressing trades shortages
- Enviro Centre / new technical programmes at existing post-secondary institutions
- Establish and promote use of multi-use indoor facilities





Moving to action

- Flood hazard zone, flood protection and ESVI available at meshblock (nationally)
- Additional layers merged with ESVI, depending on availability
 - Sea level rise (available)
 - Others that regional councils/central govt may have
- Resilience characteristics identified from recent natural hazard events.
- Build on existing knowledge and experience, to realise desirable outcomes for communities facing pandemic and other stressors.

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END

Appendix





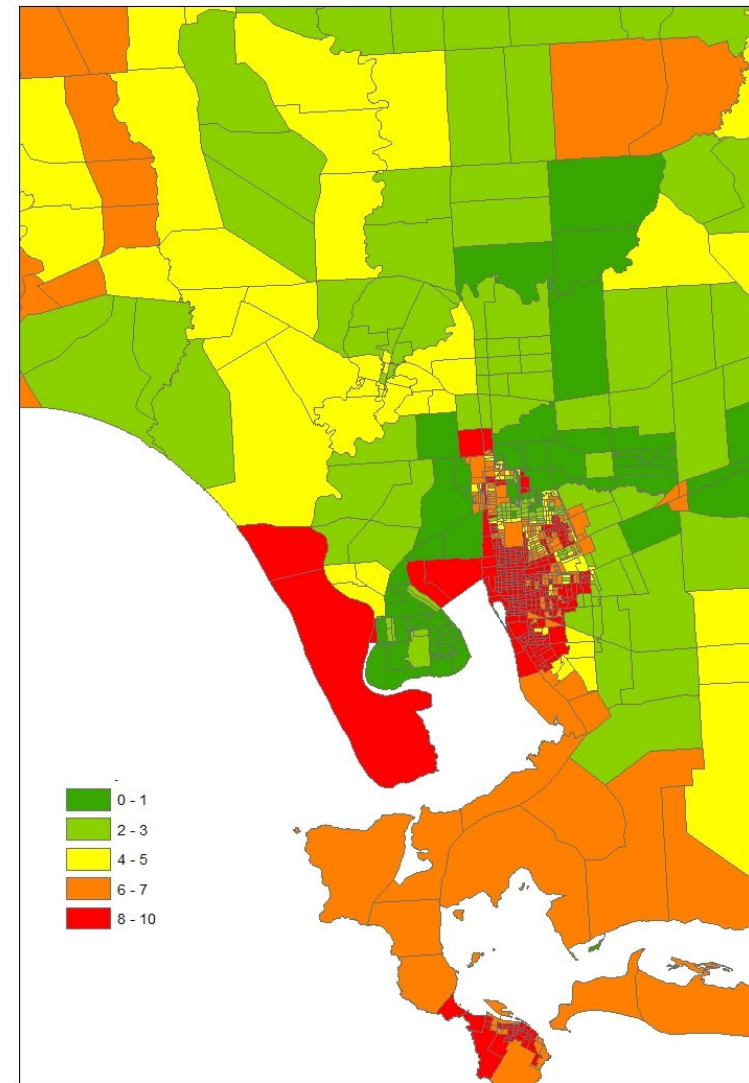
Alternative Indicator

New Zealand Deprivation Index (Otago)

- Based on 9 Census variables
- Similar approach (Principal Components Analysis).

Dimension of deprivation	Description of variable (in order of decreasing weight in the index)
Communication	People with no access to the Internet at home
Income	People aged 18-64 receiving a means tested benefit
Income	People living in equivalised* households with income below an income threshold
Employment	People aged 18-64 unemployed
Qualifications	People aged 18-64 without any qualifications
Owned home	People not living in own home
Support	People aged <65 living in a single parent family
Living space	People living in equivalised* households below a bedroom occupancy threshold
Living condition	People living in dwellings that are always damp and/or always have mould greater than A4 size

*Equivalisation: methods used to control for household composition.



Hot Spots – NZ Deprivation Index

