



**National Emergency
Management Agency**
Te Rākau Whakamarumarū

22 July 2020



Dear [REDACTED]

Reference: OIA-2019/20-0597

Official Information Act request relating to Exercise Ruaumoko

Thank you for your Official Information Act 1982 (the Act) request received on 24 June 2020. You requested:

*"I am looking for a report relating to Exercise Ruaumoko. Detailed below.
Horrocks J (2008) Learning from Exercise Ruaumoko, Exercise Ruaumoko 2008.
Ministry of Civil Defence and Emergency Management, New Zealand"*

Following a search of material held by this agency, I believe the information you requested is a power point document prepared for presentations. Two versions of this power point exist, prepared for different presentations. Please find these power point documents attached. I note the documents refer to *Exercise Ruaumoko '08: Final Exercise Report*; I understand you have previously been provided with a copy of this report.

You have the right to ask the Ombudsman to investigate and review my decision under section 28(3) of the Act.

This response will be published on the Department of the Prime Minister and Cabinet's website during its regular publication cycle. Typically, information is released monthly, or as otherwise determined. Your personal information including name and contact details will be removed for publication.

Yours sincerely



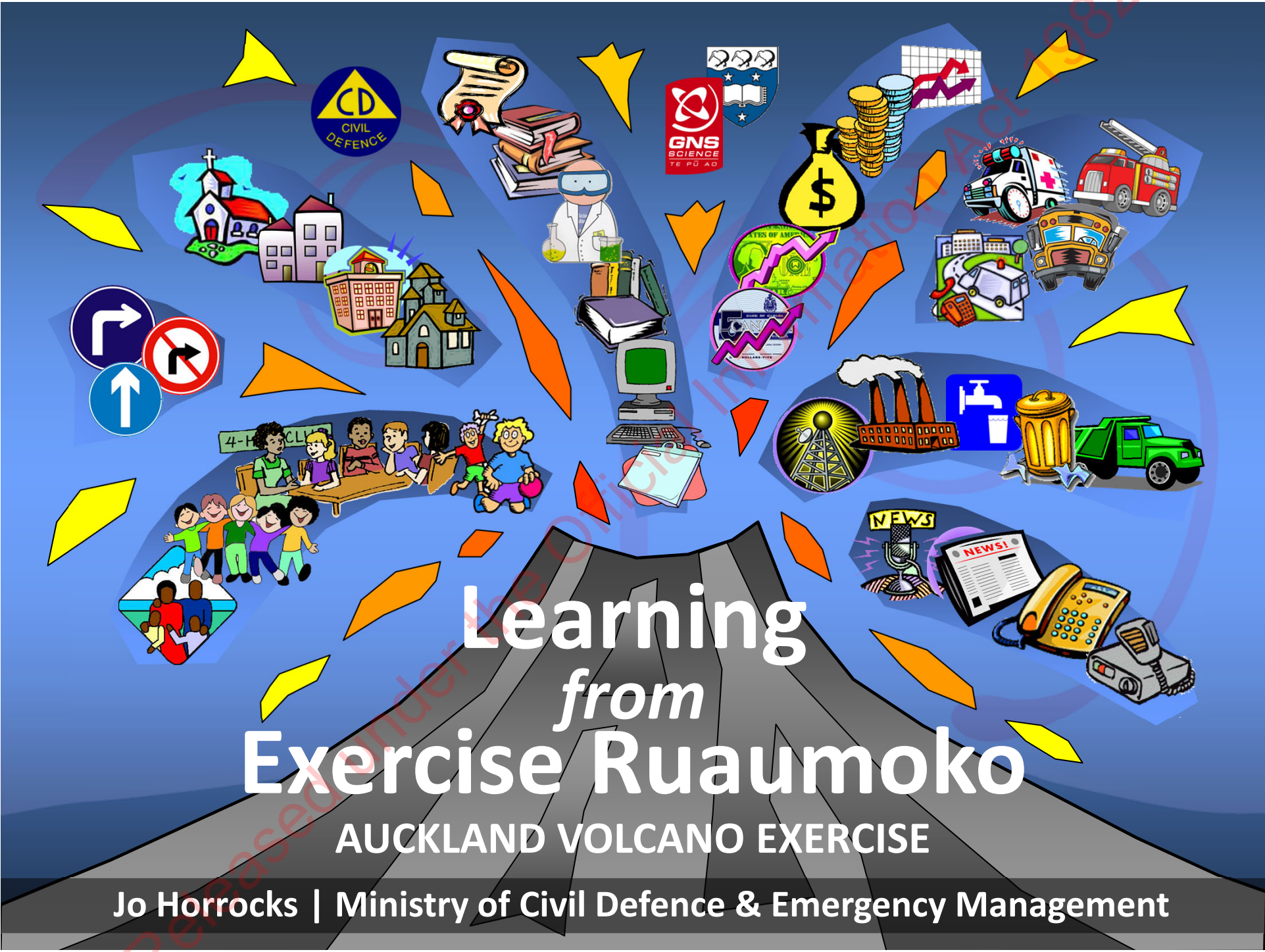
Carolyn Schwalger
Chief Executive, National Emergency Management Agency



"RESILIENT NEW ZEALAND – COMMUNITIES
UNDERSTANDING AND MANAGING
THEIR HAZARDS"

"AOTEAROA MANAHAU – HE PŪIOIO NGĀ HAPORI,
HE MĀRAMA KI Ō RĀTOU
PŪMATE ME TE WHAKAHAERE"

VISION



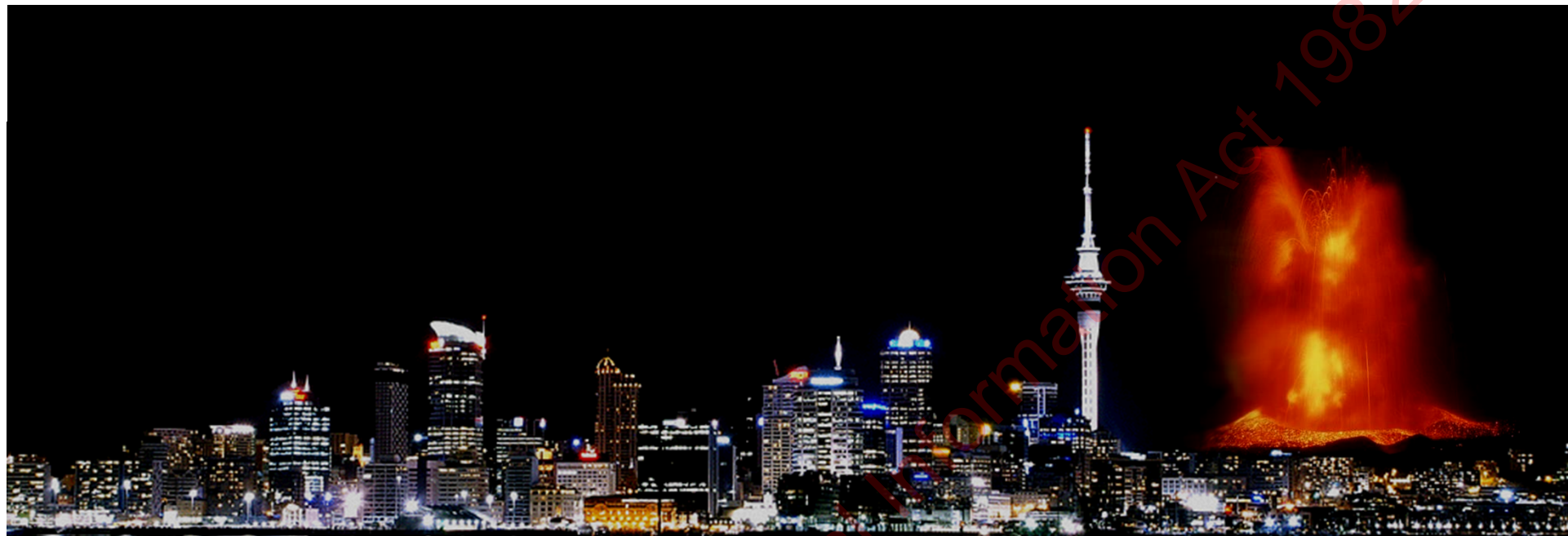
Learning from Exercise Ruaumoko

AUCKLAND VOLCANO EXERCISE

Jo Horrocks | Ministry of Civil Defence & Emergency Management

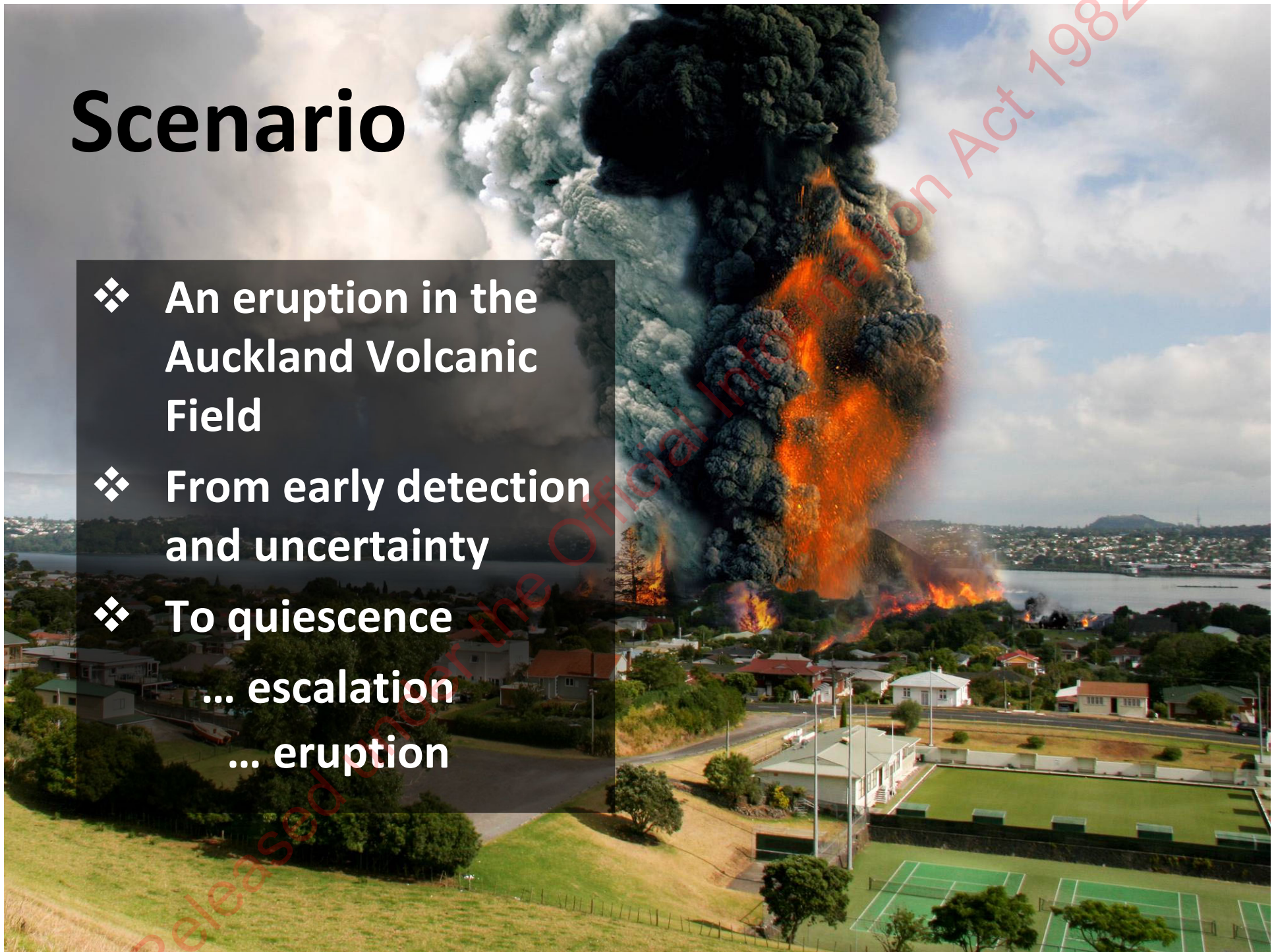
Exercise Ruaumoko

- ❖ The second of two national disaster exercises
- ❖ Run over 5 months (Nov 07 – March 08)
- ❖ The largest Civil Defence Emergency Management exercise held in New Zealand
- ❖ More than 1,500 participants from 125 organisations



Scenario

- ❖ An eruption in the Auckland Volcanic Field
- ❖ From early detection and uncertainty
- ❖ To quiescence
... escalation
... eruption



Exercise Themes



Leadership

And informing the community with consistent and coordinated messages



Business

Planning for and managing the continuance of business, the economy and government



Community

Understanding and managing the social implications



Safety

Planning for and delivering response functions

Participants

'Traditional' CDEM participants:



MCDEM, CDEM Groups, local authorities



Emergency services



Government departments



Welfare agencies / NGOs

'Non-traditional' participants:



Economic agencies



Private businesses



Science agencies



General public

Some Results

Released under the Official Information Act 1982

Business and Economy

*“Planning for and managing the
continuance of business, the economy
and government”*



Business Workgroup

- ❖ Engaged with a sample of Auckland's business community
 - Representatives from: construction, SMEs, tourism, lifelines, engineering, manufacturing, insurance, FMCG, banking, professional bodies
- ❖ Provided views on impacts of the scenario on their businesses and sectors
- ❖ Discussed interventions and mitigations
- ❖ Provided inputs into the Market Economics Model (*'Economic Futures Model'*)
 - “with business response”
 - “without business response”



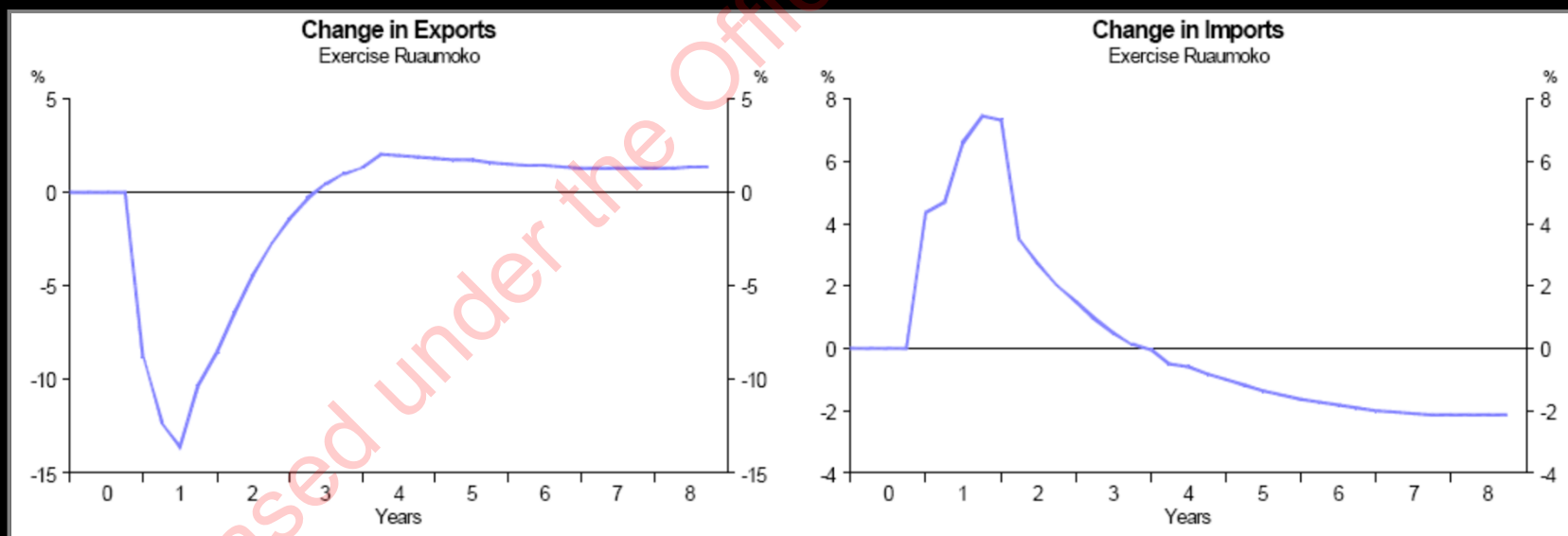
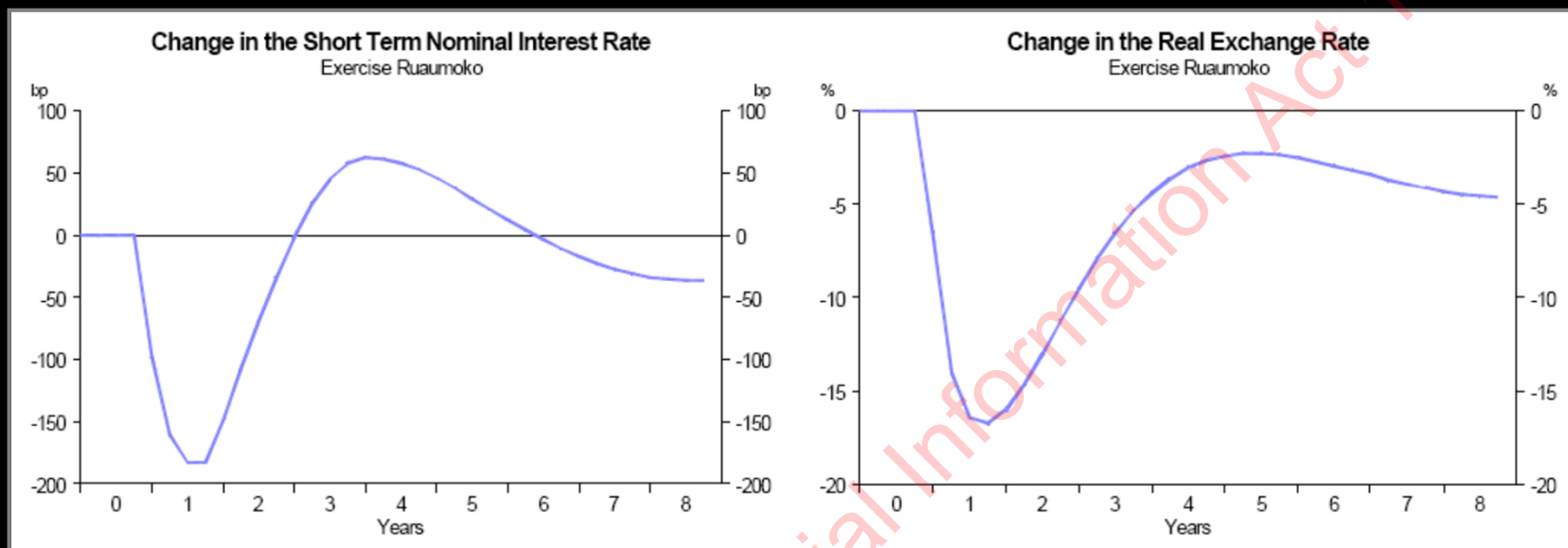
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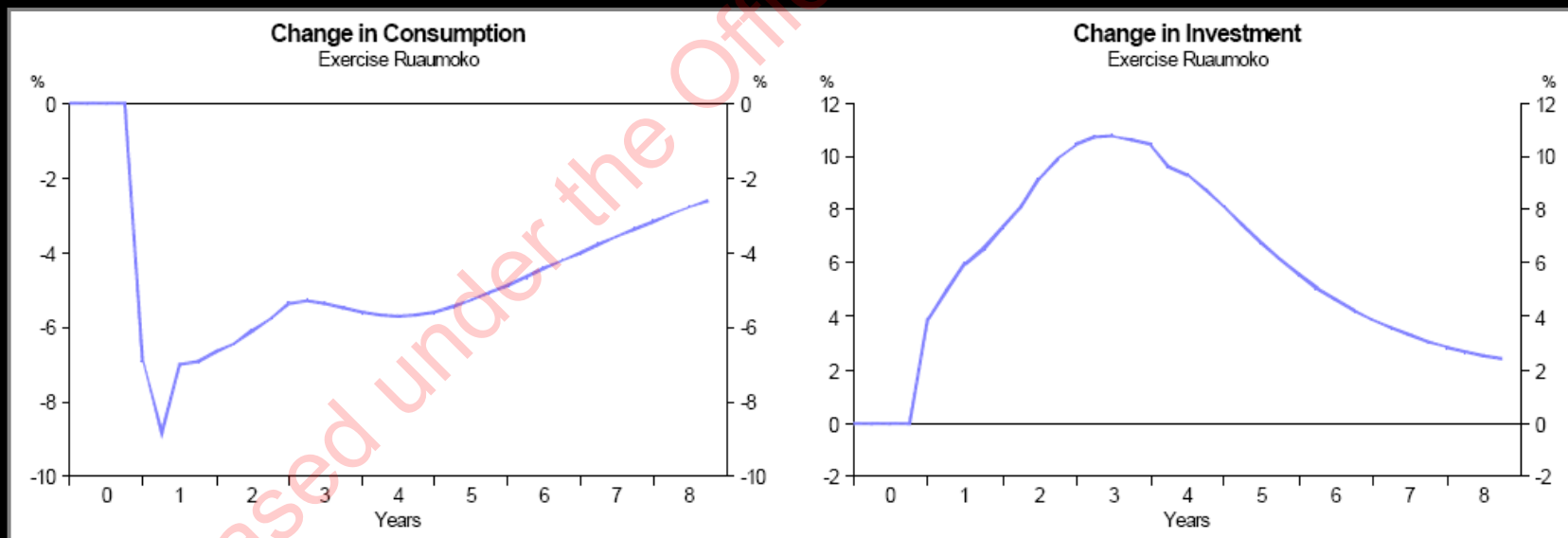
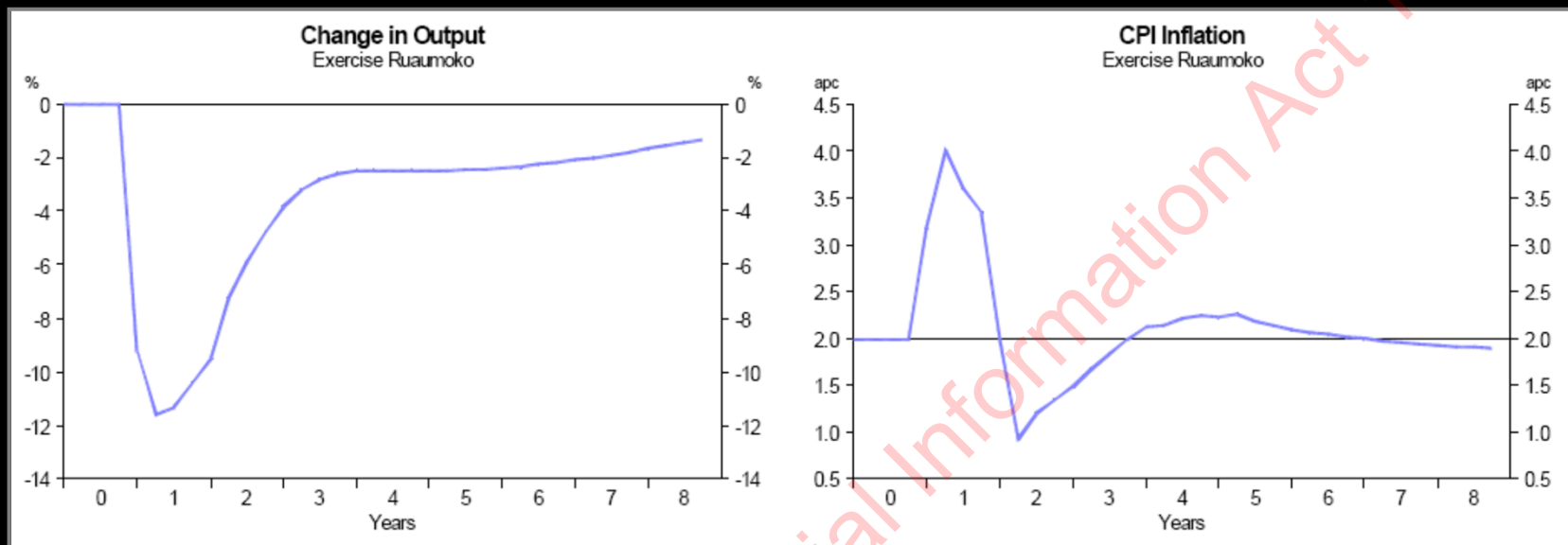
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- ❖ This could be reduced to **40%** with the application of business mitigation measures
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- ❖ Overall, NZ would suffer a **14% reduction in national GDP**
- ❖ Could be reduced to **12%** with industry response
 - *Great Depression 1930s = 7% reduction in GDP*
- ❖ Further reductions possible with concerted campaign of preparedness and more comprehensive mitigation measures



Macro-Economics

- ❖ Reserve Bank and Treasury modelled macro-economic impacts using the Forecasting and Policy System (FPS)
- ❖ Used Ruaumoko scenario + Auckland business workgroup inputs + assumptions about the financial system
- ❖ Modelled a range of variables:
 - CPI inflation
 - Tradables inflation
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 - Output
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 - Exports
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Summary: Macro-Economic Impacts

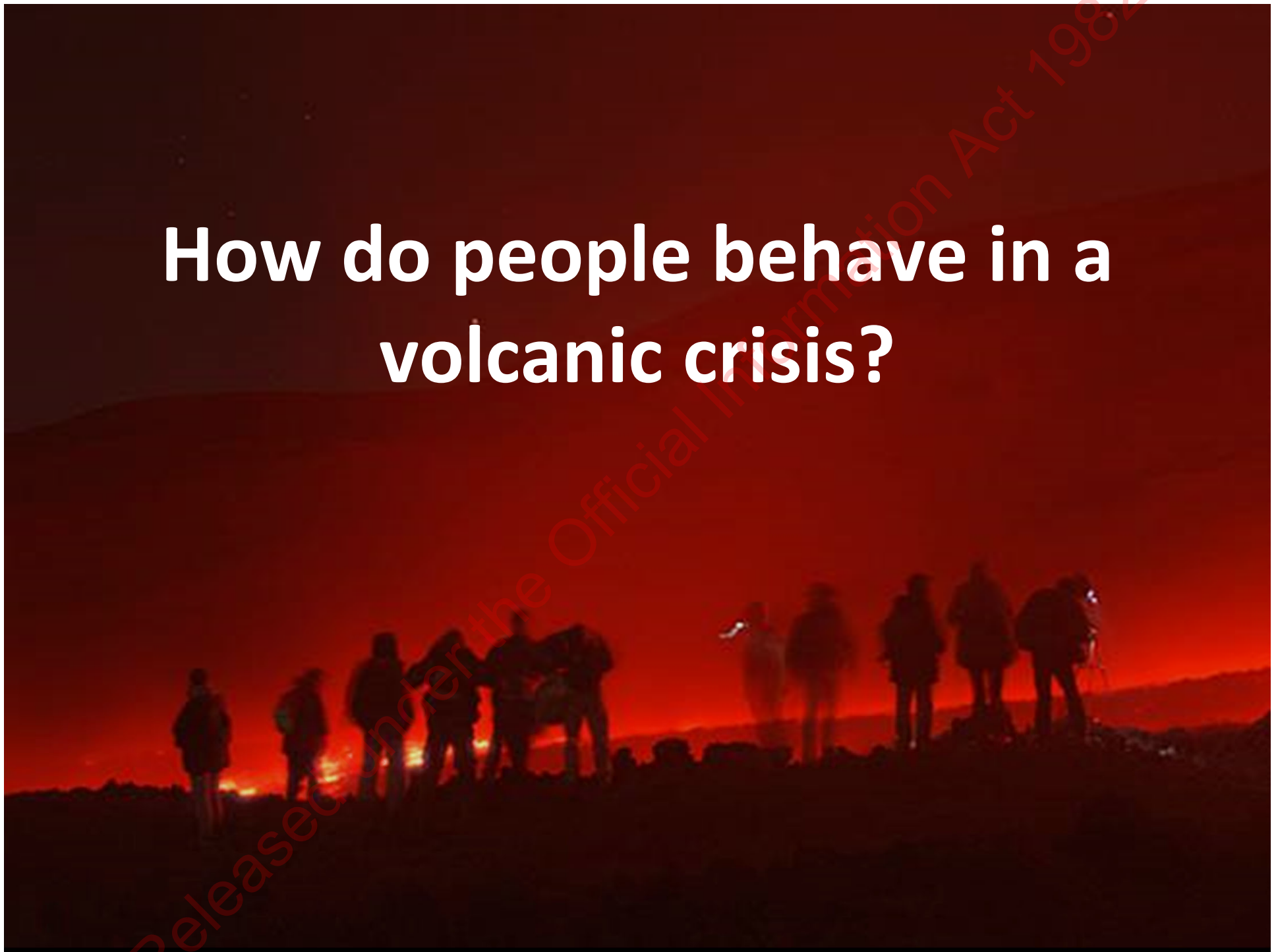
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- ❖ Near term inflation from shortages and declining currency, but, this is counterbalanced by a reduction in demand
- ❖ *There will be offsetting influences in the economy*
- ❖ *If there are delays and uncertainties in recovery, there could be more serious long-term consequences*

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Community

“Understanding and managing the social impacts”

How do people behave in a volcanic crisis?





Community Focus Groups

- ❖ A focus group of 20 people met 3 times during March 2008 to gauge:
 - Hazard awareness (Auckland Volcanic Field)
 - Risk perception
 - Personal reactions to Ruaumoko scenario and exercise-produced communications documents



Hazard Awareness

- ❖ Relatively low knowledge about the volcanic hazard in Auckland
- ❖ Most believe:
 - *“New Zealand is safe”*
 - *“We don’t have many disasters here”*
 - *“If we do, they don’t have long-term consequences”*
 - *“Large-scale events happen to other countries”*
- ❖ Most know more about earthquakes than they do volcanoes, and/or believe all volcanoes are the same
 - Apply what they know about earthquakes to volcanoes
 - Apply what they know about other NZ volcanoes, or volcanoes worldwide to the local hazard

Risk Perception

- ❖ **The confusion between earthquakes and volcanoes means people:**
 - Will evacuate early
 - Don't understand that they will get warning of a volcanic eruption
 - Don't understand that they will get time to get away
 - Believe volcanoes are sudden, wide-scale, devastating events

A photograph showing emergency responders in a disaster zone. In the foreground, a person wears a red helmet with a headlamp and a white respirator mask. Another person in the background wears a yellow helmet and a white respirator mask. They are standing in front of a large pile of rubble and debris. The title 'Perceptions about Civil Defence' is overlaid in white text on the right side of the image.

Perceptions about Civil Defence

- ❖ Current perceptions about Civil Defence are largely positive
 - *“reliable, faithful, organised, trustworthy, friendly, attentive, educating, giving advice, moving quickly, authoritative, strong, protecting, helping”*
- ❖ Everyone had some idea of what Civil Defence does, but little idea who they are, or where they are

**What makes a
good leader?**





Leadership

- ❖ The ideal Civil Defence leader is all things to all people
- ❖ Expectations of a leader:
 - **Physically strong**
 - Younger, stronger, aggressive, proactive, fit
 - **Mentally strong**
 - Intelligent, knowledgeable, having all the best scientific advice
 - **Personable**
 - Loyal, empathetic, charismatic, honest, has integrity
 - **Authoritative**
 - Loud, strong speaker, straight talker, confident, assured
 - quasi-military – commands trust and obedience through force, charm and intelligence
 - **MALE!**



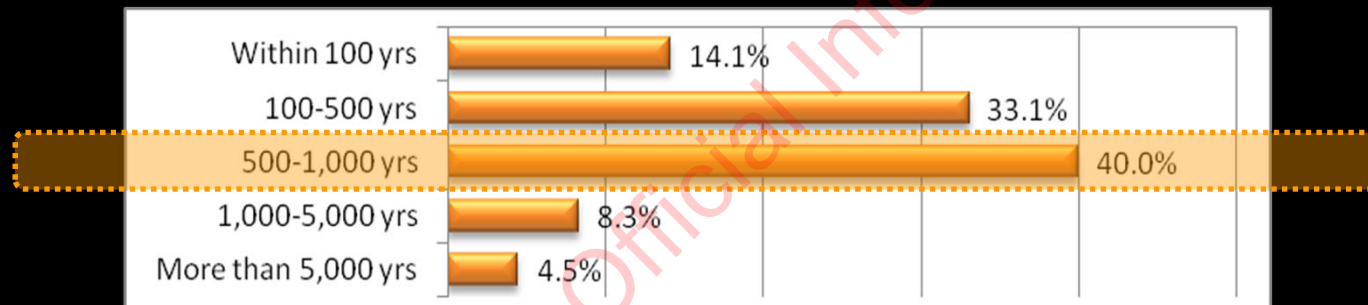
Online Survey

Survey Characteristics

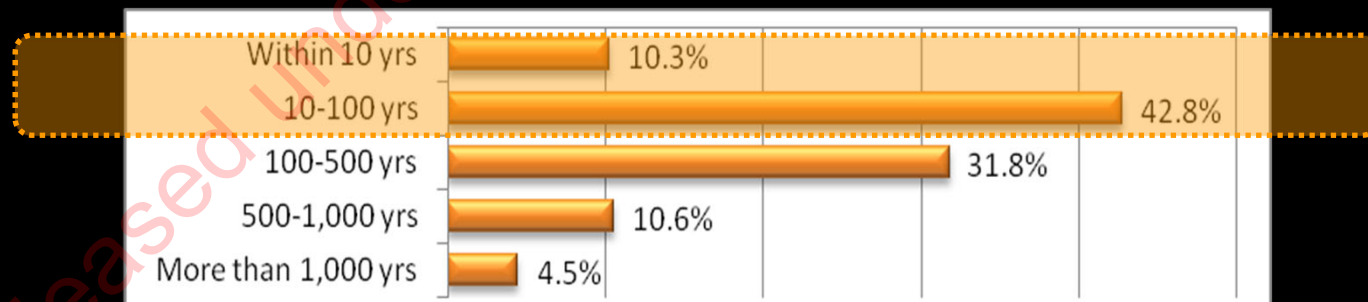
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 - Hazard awareness
 - Risk perception
 - Evacuation behaviour
 - Outcome expectancy
 - Preparedness
- ❖ **Widely publicised as part of the exercise**
- ❖ **Public education element**
- ❖ **3 months duration**
- ❖ **2,050 responses**

Hazard Awareness

When do you think (or best guess) there was *last* a volcanic eruption in the Auckland region?



When do you think (or best guess) there will *next* be a volcanic eruption in the Auckland region?



Scenario-Based Risk Perception

Scenario: unfelt earthquakes reported widely in the media

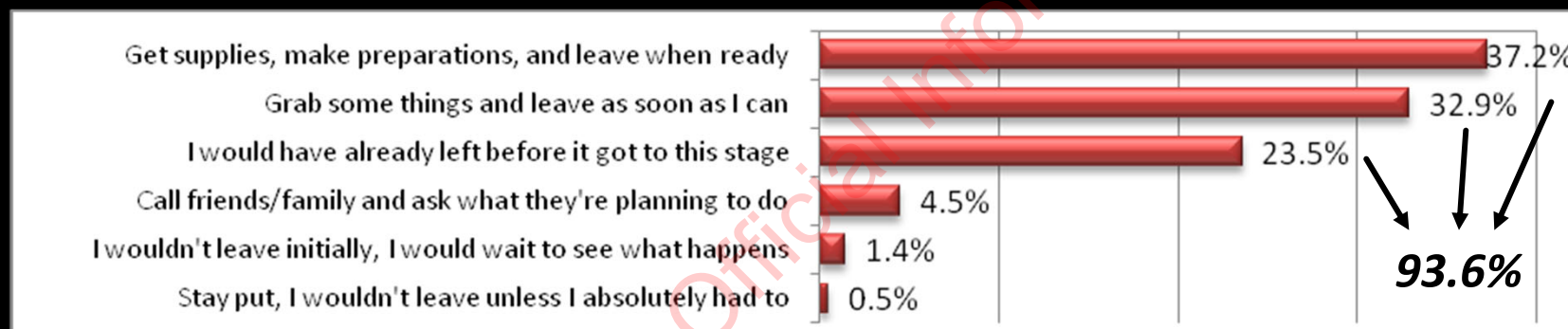


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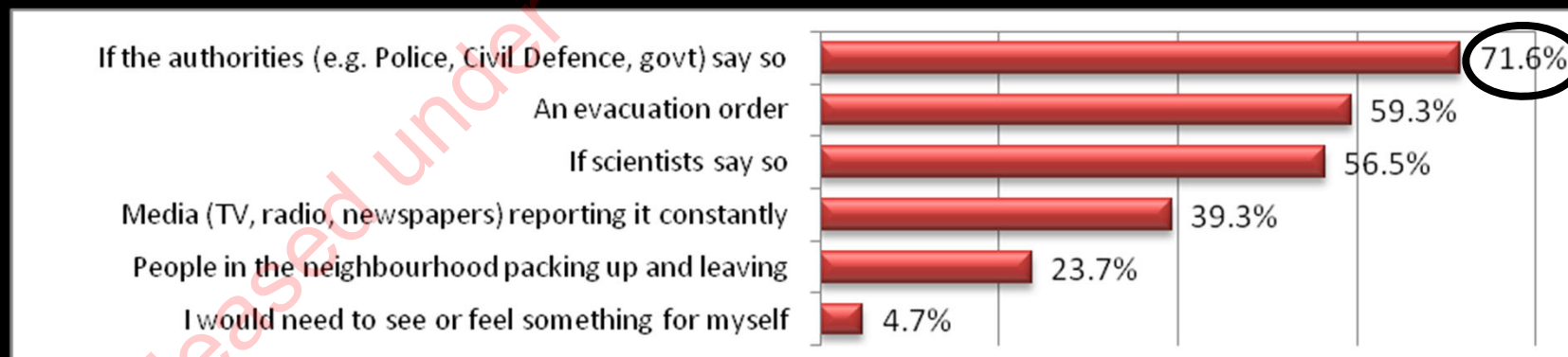


Scenario-Based Risk Perception

Scenario: your house inside the evacuation zone

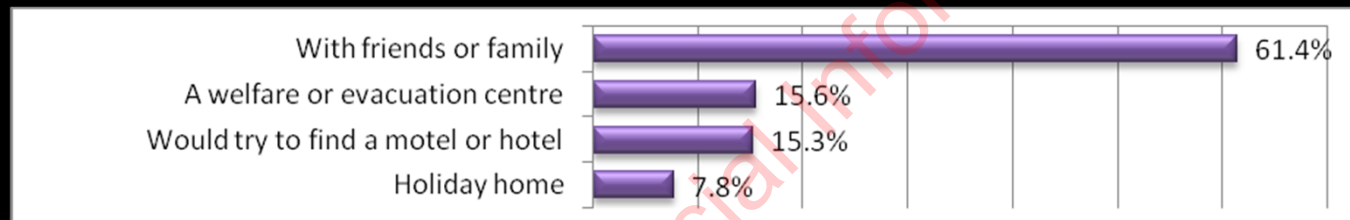


What would make you believe an eruption is imminent?

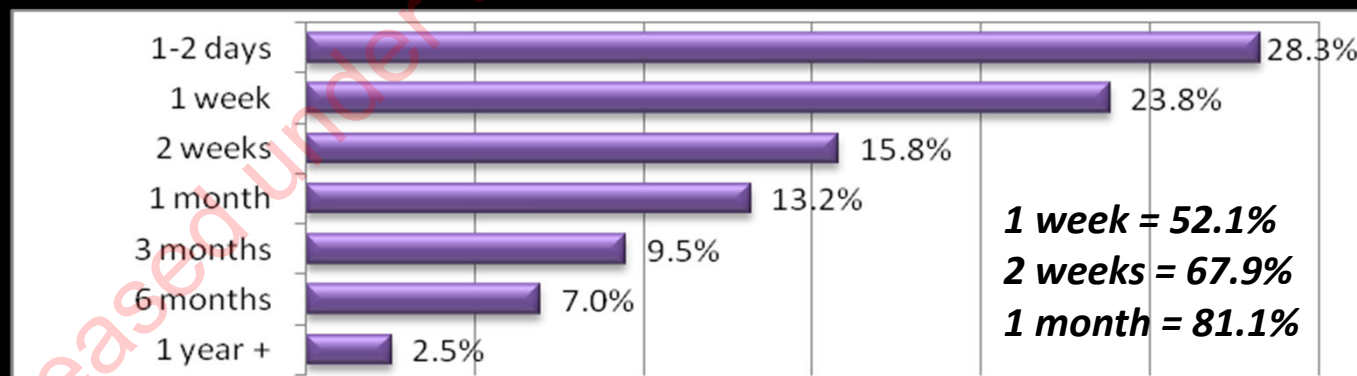


Evacuation Behaviour

If you had to evacuate, where would you expect to stay?

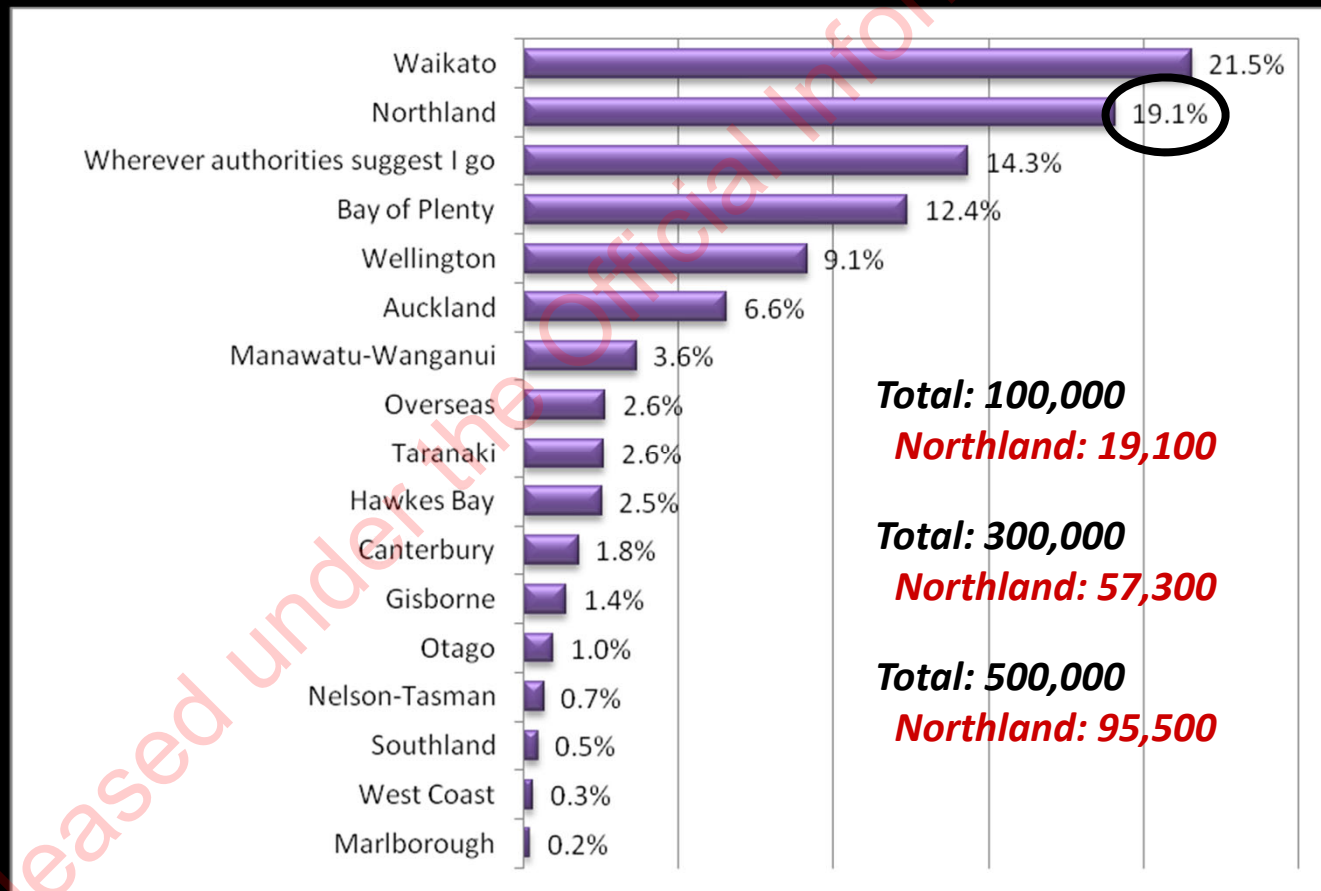


If you evacuated and could not work, how long do you think you could last financially?



Evacuation Behaviour

If you had to evacuate, which region would you go to?



Safety

“planning for and delivering response functions”

Evacuation Operations

- ❖ We have some of the concepts in place; now needs to be translated into effective operational plans
- ❖ Mass evacuation operations remain a huge challenge (especially in the case of Auckland)
- ❖ Getting the right information out to the public is key
- ❖ The registration process needs further clarification and development

Health and Welfare

- ❖ Health and Welfare sectors are showing the benefit of recent planning and exercising – have a vastly increased capability
- ❖ Practised the evacuation of a major Auckland hospital
- ❖ Practised the setup of multiple welfare centres across several regions
- ❖ Questions remain about how to care for people in a long-term evacuation

Infrastructure

- ❖ Auckland is extremely vulnerable to disruptions to lifeline utilities
- ❖ Lifelines often have little or no redundancy, few 'work-arounds', and many inter-dependencies
- ❖ Lifelines should be asked about their current and planned mitigation measures
- ❖ Very effective regional coordination of lifelines in Auckland, but this is not necessarily the case elsewhere

Coordination of Science Advice

- ❖ **Auckland Volcanic Science Advisory Group**
 - Multi-agency, integrated local and national science capability
- ❖ **First trial of an 'operational science response'**
 - A single voice
 - Authoritative science advice
 - Informed emergency management planning and messaging
- ❖ **Need to improve the advisory group process (science and CDEM working together)**

Civil Defence Planning

- ❖ The exercise illustrated the importance of a robust multi-agency planning process
- ❖ In particular:
 - Identifying consequences of agencies' actions on other agencies / the response in general
 - Sequencing and synchronisation
- ❖ Plans were not always well communicated to all responding agencies

Developing Capability

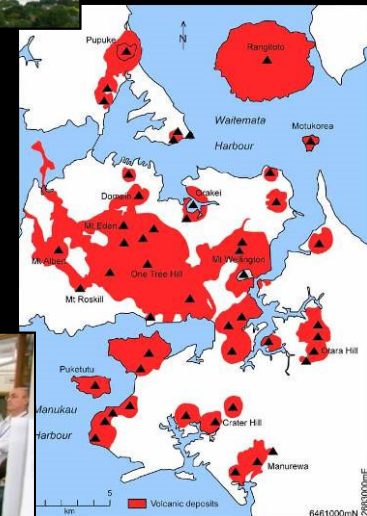
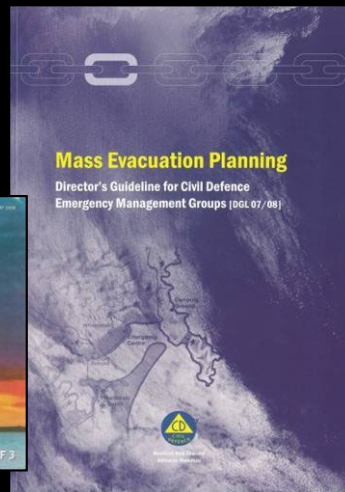
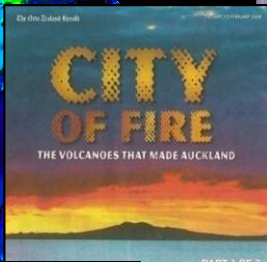
- ❖ 'Core' CDEM staff are not in plentiful supply
- ❖ Local, regional and national agencies have a dependency on 'non CDEM' personnel
- ❖ Volunteers are essential!
 - Need to maintain an ongoing training programme for volunteers (as well as CDEM staff)
 - Need to maintain an ongoing engagement with their wider organisations

National Crisis Management Centre

- ❖ Vastly improved standard operating procedures
- ❖ Good leadership and advice to regions
- ❖ Need to be more proactive in coordinating responding regions
- ❖ The objectives of Government need to be communicated better
- ❖ The process around National Declarations requires further work (when? how?)

Exercise Ruauumoko: Conclusions





Exercise Ruauumoko:

- ❖ provided lessons for volcanic crisis management
- ❖ provided the opportunity for extensive data collection across several disciplines
- ❖ created the opportunity for improved CDEM partnerships

Conclusion:

- ❖ *we are more prepared than we were*
- ❖ *we can be better still!*



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VISION



Further Results

❖ *Exercise Ruaumoko '08: Final Exercise Report*

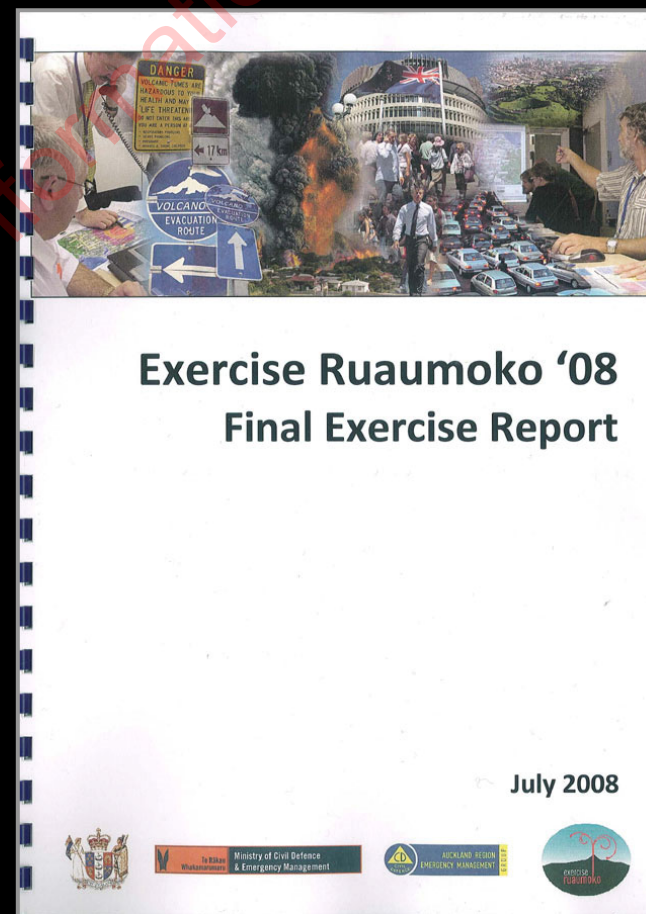
- Ministry of Civil Defence & Emergency Management for the New Zealand Government

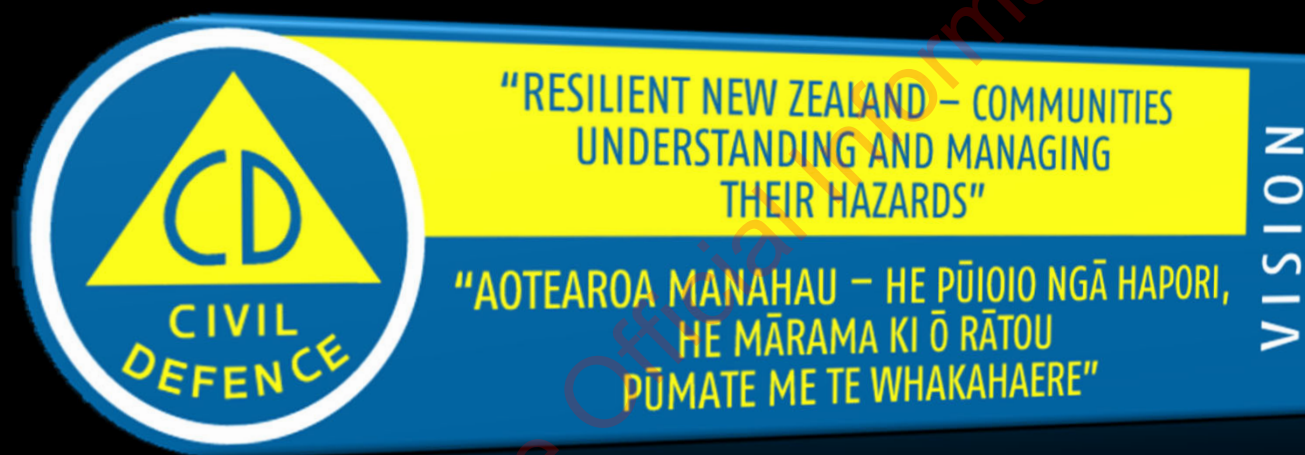
www.mcdem.govt.nz

www.cdemg.org.nz

www.exerciseruaumoko.com

jo.horrocks@dia.govt.nz





PŪMATE ME TE WHAKAHAERE
HE MĀRAMA KI Ō RĀTOU

Jo Horrocks | Ministry of Civil Defence & Emergency Management

Jo Horrocks | Ministry of Civil Defence & Emergency Management

Scenario



Exercise Themes



Leadership

And informing the community with consistent and coordinated messages



Business

Planning for and managing the continuance of business, the economy and government



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Some Results

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Business and Economy

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Business Workgroup

- ❖ Engaged with a sample of Auckland's business community
 - Representatives from: construction, SMEs, tourism, lifelines, engineering, manufacturing, insurance, FMCG, banking
- ❖ Provided views on impacts of the scenario on their businesses and sectors; discussed interventions and mitigations
- ❖ Provided inputs into the '*Economic Futures Model*'
 - model analysed and quantified the economic impacts of the event on the Auckland and New Zealand economies
 - results with/without 'business response'



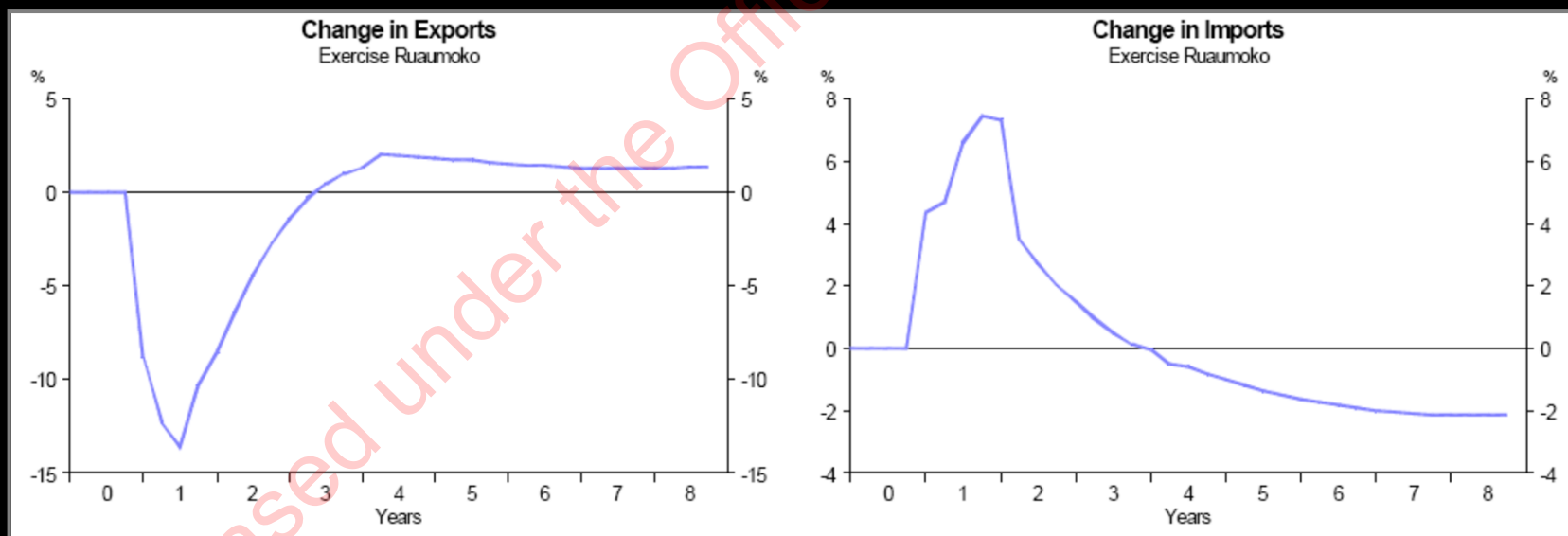
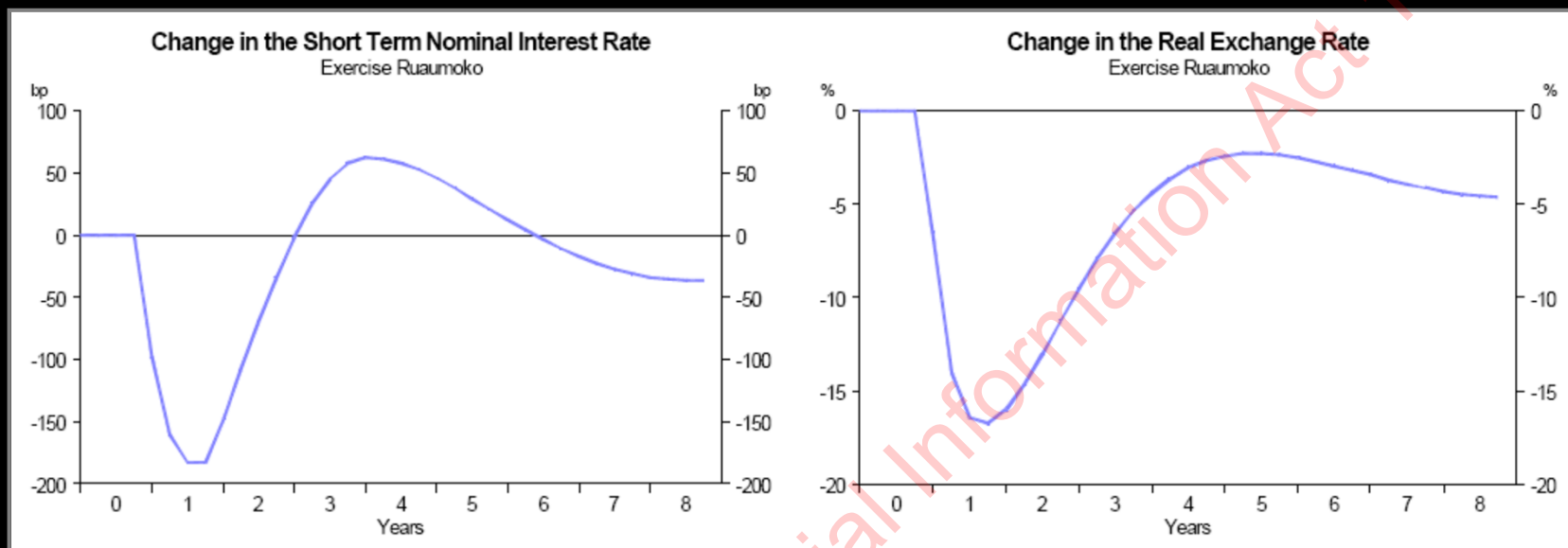
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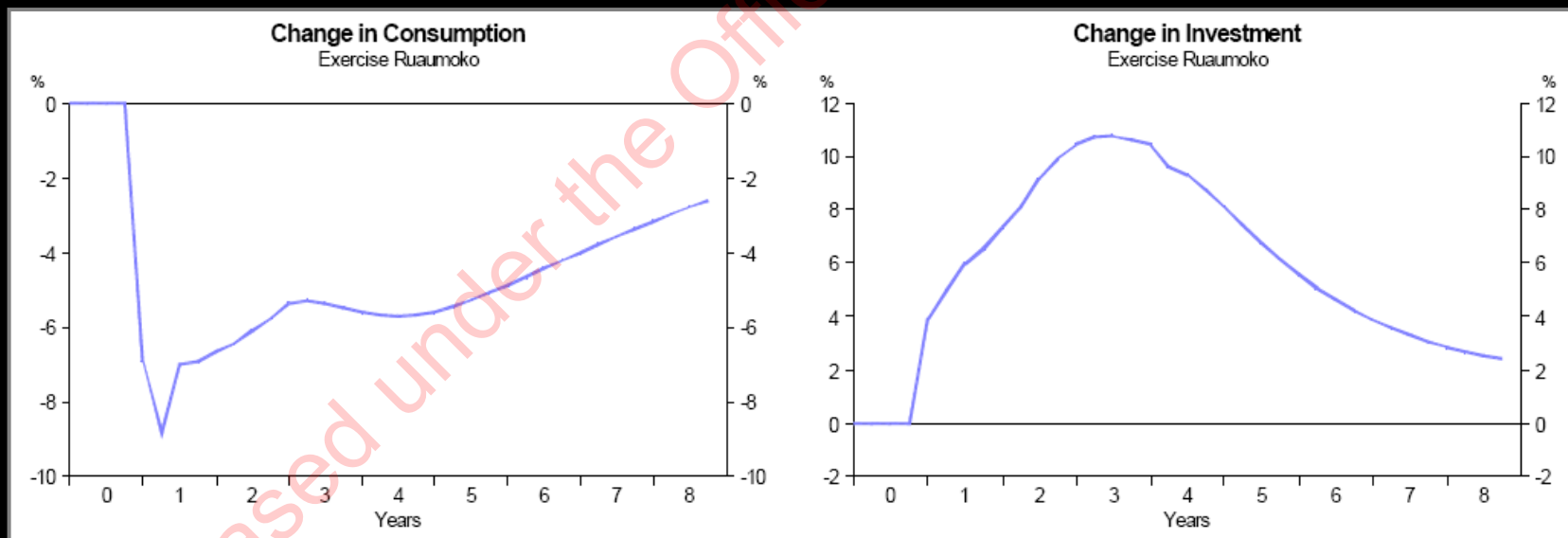
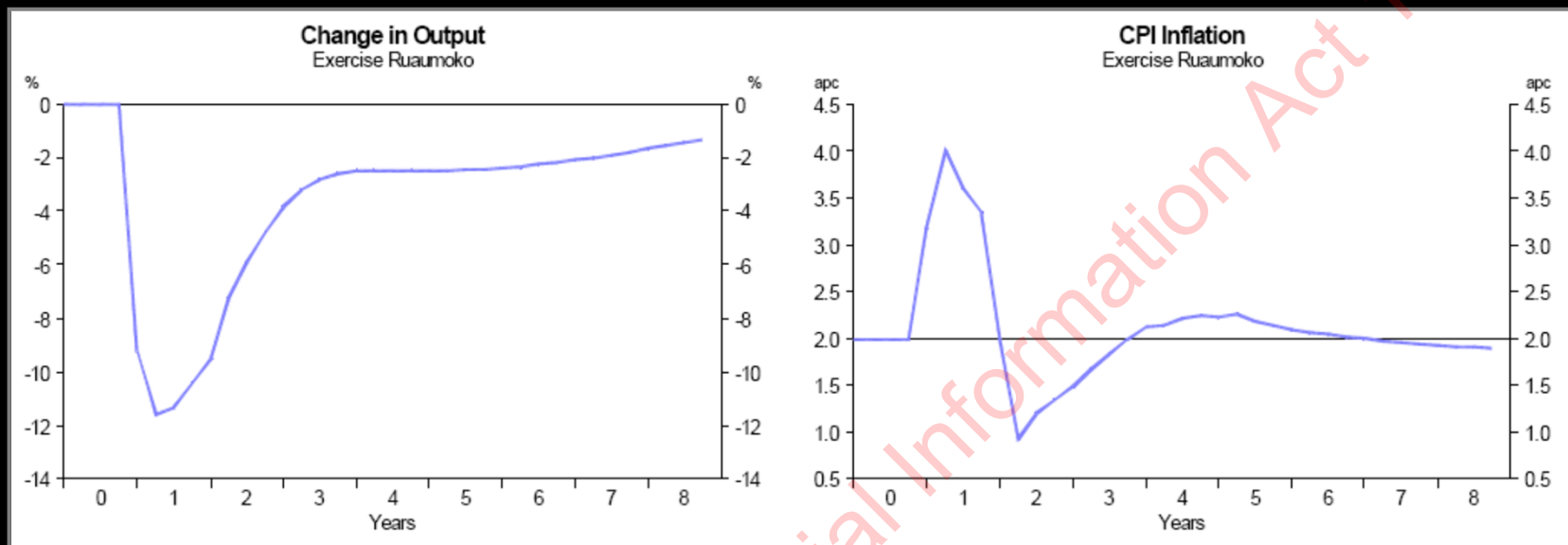
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Summary: Macro-Economic Impacts

- ❖ Consumers will face substantial income losses
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Further Results

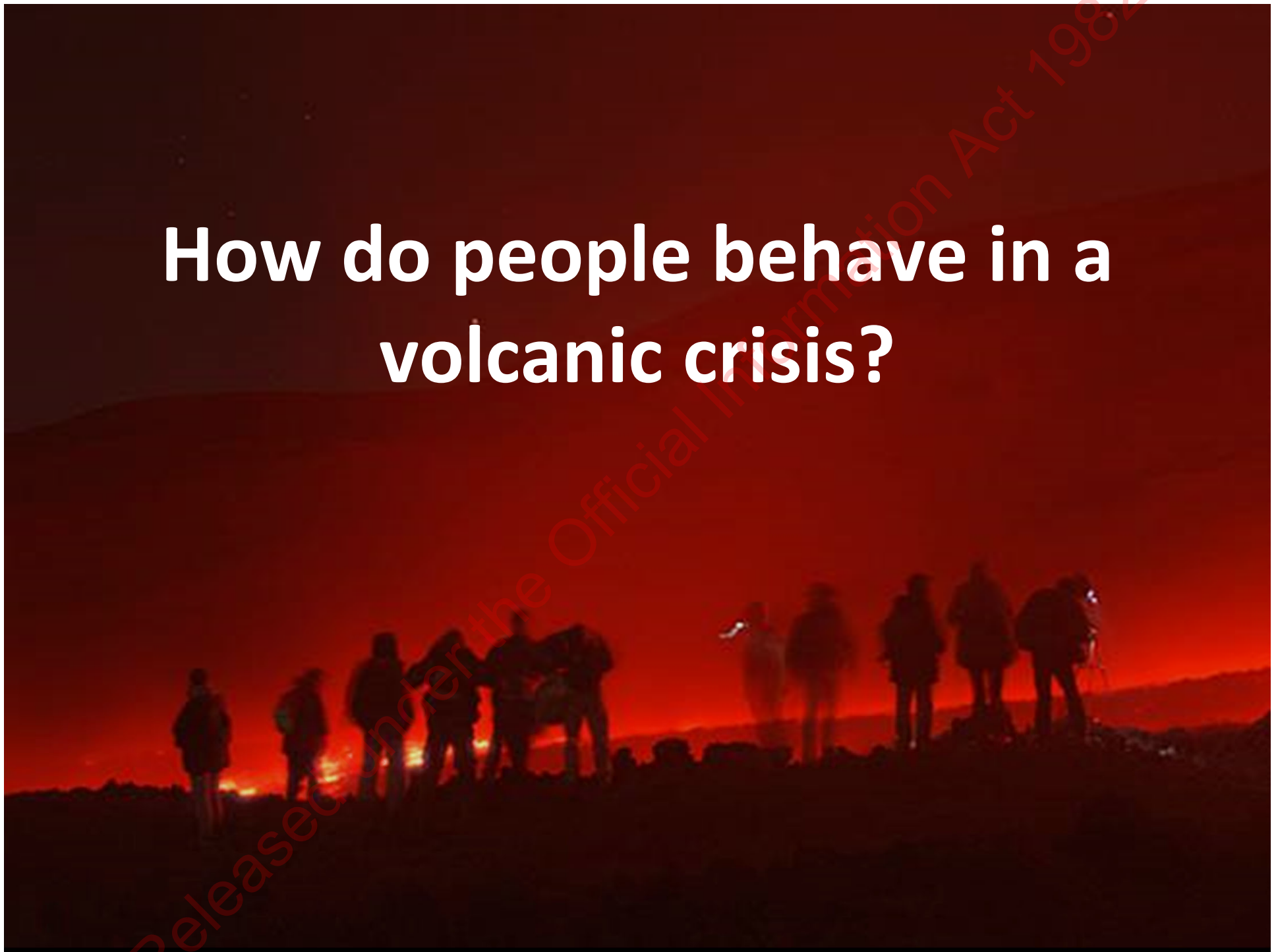
- ❖ ***Exercise Ruaumoko – Report of the Economic Workgroup: Assessment of the Impacts of a Volcanic Eruption on the Auckland Economy***
 - Shearer Consulting Ltd and Market Economics Ltd for Auckland CDEM Group
 - www.exerciseruaumoko.co.nz

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Community Focus Groups

- ❖ A focus group of 20 people met 3 times during March 2008 to gauge:
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 - Risk perception
 - Opinion of civil defence and other responders
 - Personal reactions to Ruaumoko scenario and exercise-produced communications documents

Research by Phoenix Research for the Auckland CDEM Group



Hazard Awareness

- ❖ **Relatively low knowledge about the volcanic hazard in Auckland**
- ❖ **Most know more about earthquakes than they do volcanoes, and/or believe all volcanoes are the same**
 - **Apply what they know about earthquakes to volcanoes**
 - **Apply what they know about other NZ volcanoes, or volcanoes worldwide to the local hazard**
 - **Affects how they would respond**



Perceptions about Civil Defence

- ❖ Current perceptions about Civil Defence are largely positive
 - *“reliable, faithful, organised, trustworthy, friendly, attentive, educating, giving advice, moving quickly, authoritative, strong, protecting, helping”*
- ❖ Everyone had some idea of what Civil Defence does, but little idea who they are, or where they are
- ❖ Extremely high expectations of a Civil Defence leader



Feedback on Public Information Needs

- ❖ **Get in early** – at the first sign – with simple short clear directives
- ❖ Any directive must be accompanied with an instruction on **what to do**
- ❖ Messages must be presented as a leader speaking directly to them
- ❖ Maximum of three voices in any one statement, e.g. newsreader, CD spokesperson, scientist
- ❖ Acknowledge uncertainty from the start, then give certainty where you can
- ❖ ***CD must be the consistent predictable voice***



Further Results

❖ ***Exercise Ruaumoko: Modelling the Community Response to the Public Education and Communications Programme***

- Phoenix Research for Auckland CDEM Group
- www.exerciseruaumoko.co.nz



Online Survey

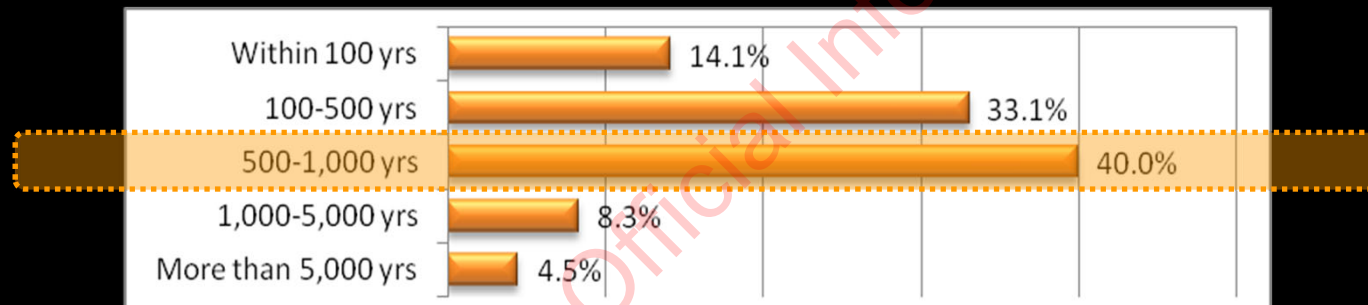
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- ❖ **25 questions**
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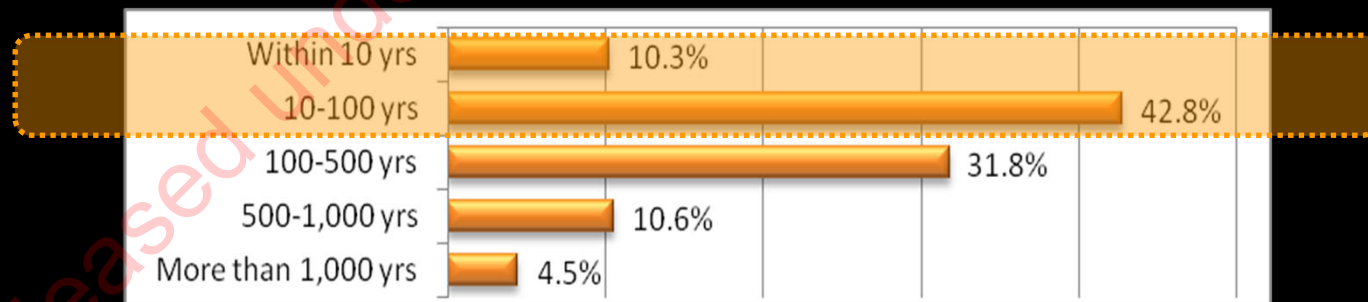
*Research by the Ministry of Civil
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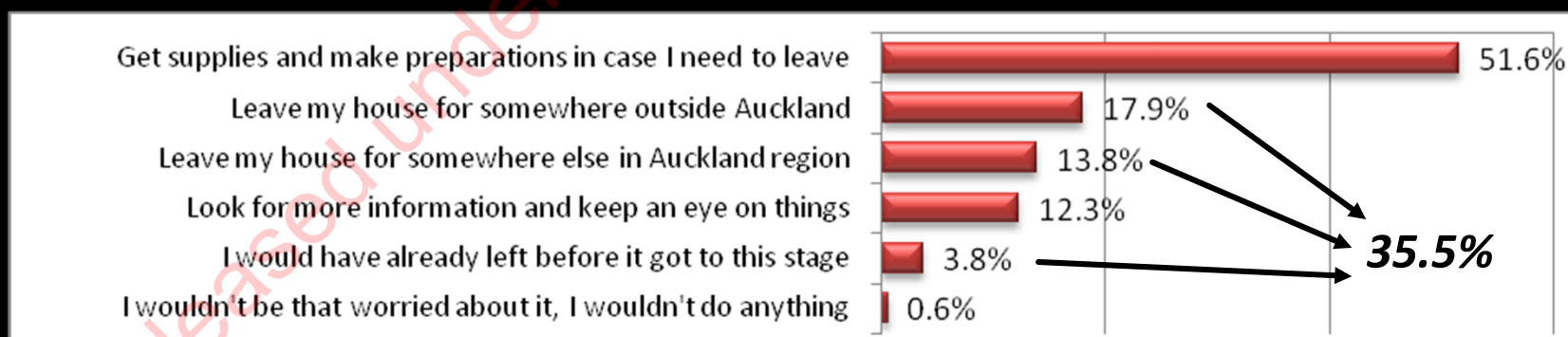


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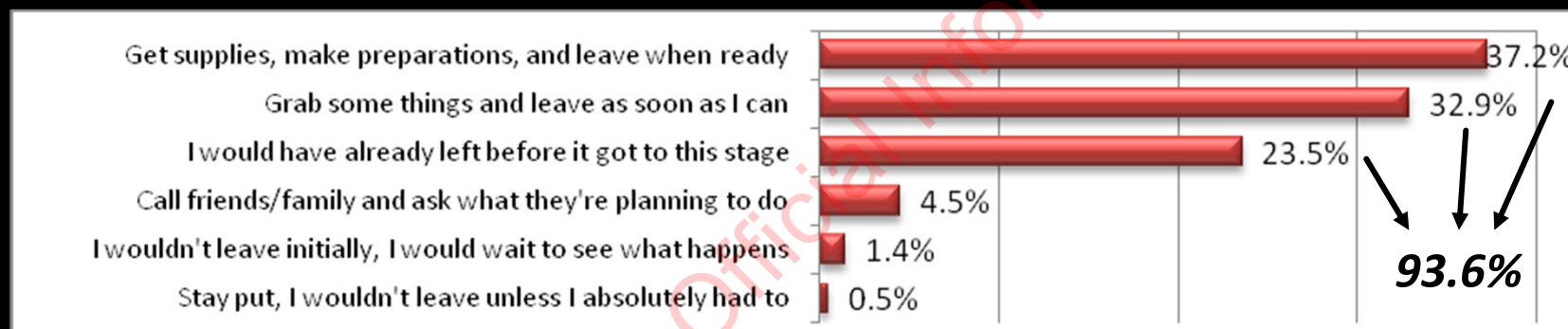


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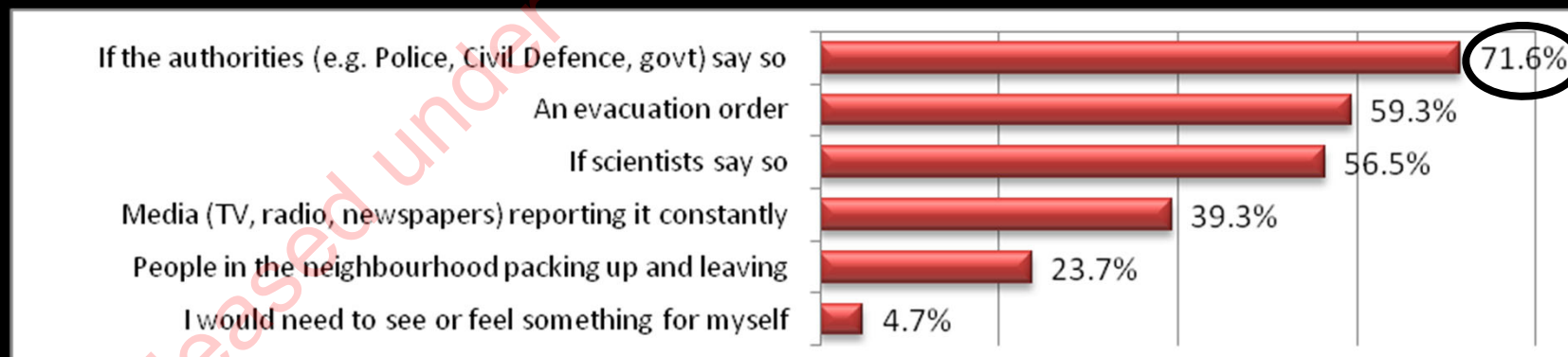


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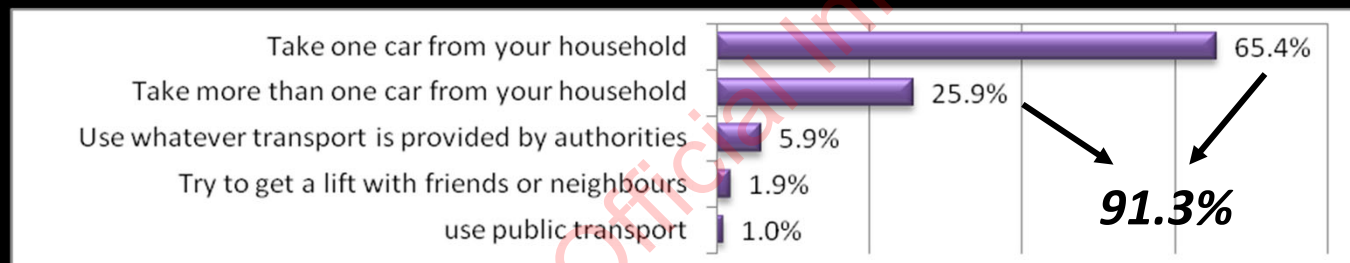


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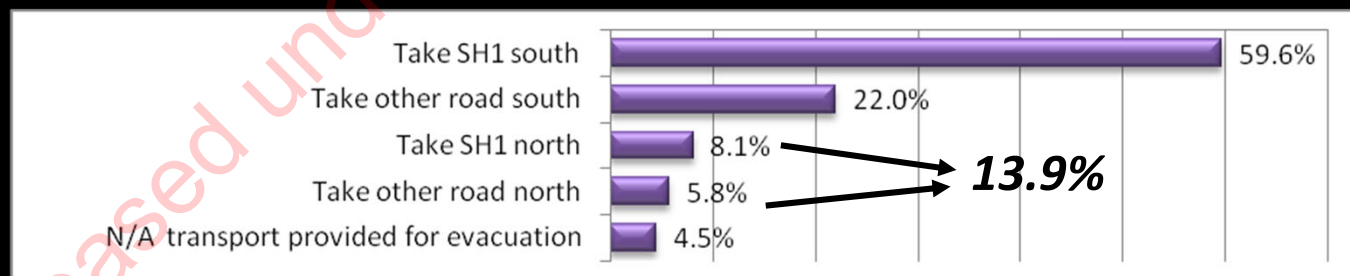


Evacuation Behaviour

If you and your household had to evacuate what form of transport would you take?

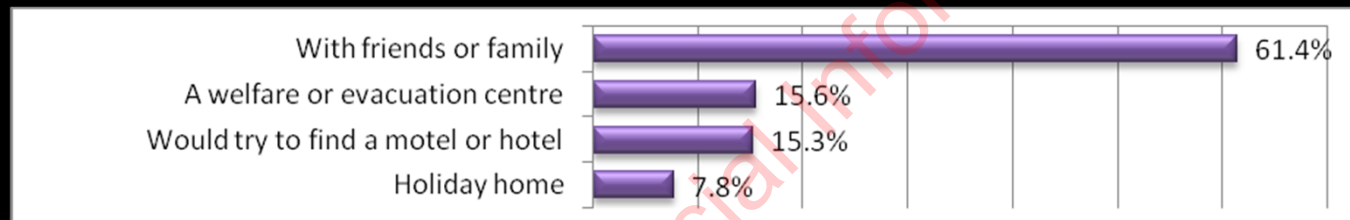


If Police said everyone evacuating should use SH1 south which route would you take?

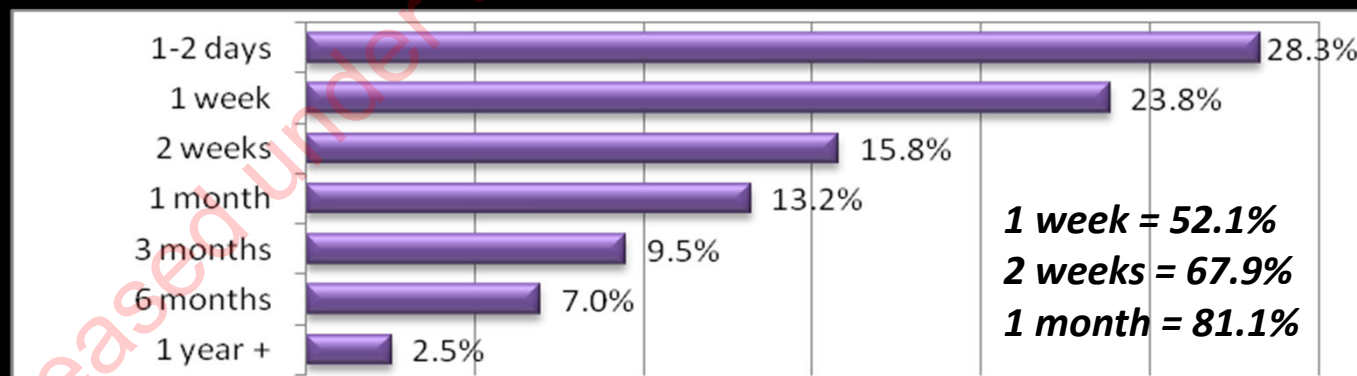


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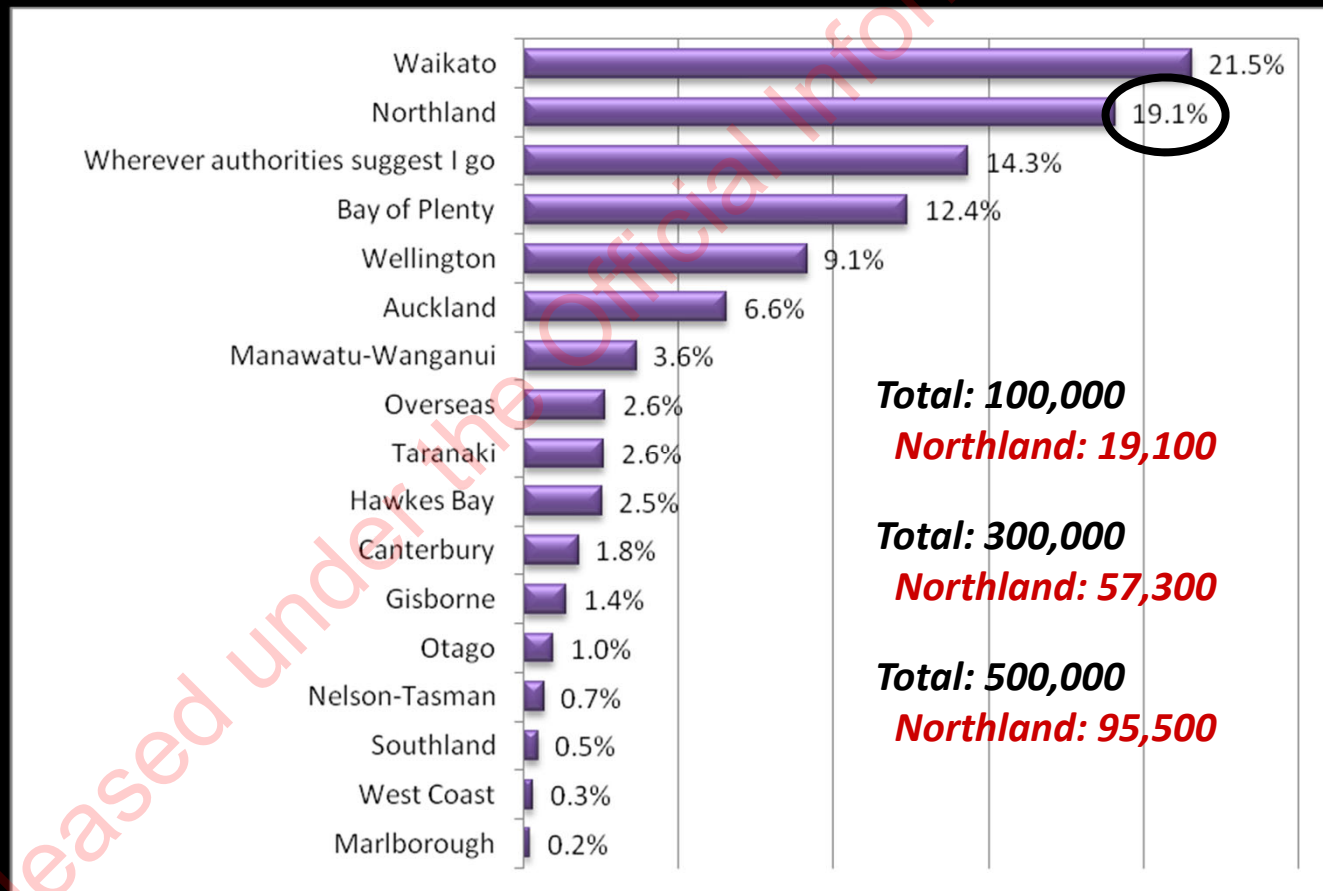


If you evacuated and could not work, how long do you think you could last financially?



Evacuation Behaviour

If you had to evacuate, which region would you go to?





Further Results

❖ ***Community Response to an Auckland Volcano:
Summary of Results from the Exercise
Ruaumoko Online Survey***

- Ministry of Civil Defence & Emergency Management
- www.civildefence.govt.nz

Safety

“planning for and delivering response functions”

Evacuation Operations

- ❖ We have some of the concepts in place; now needs to be translated into effective operational plans
- ❖ Mass evacuation operations remain a huge challenge (especially in the case of Auckland)
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- ❖ Practised the evacuation of a major Auckland hospital
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- ❖ Questions remain about how to care for people in a long-term evacuation

Infrastructure

- ❖ Exercise illustrated the criticality of Auckland to the NZ economy
- ❖ Auckland is extremely vulnerable to disruptions to lifeline utilities
- ❖ Very effective regional coordination of lifelines in Auckland, but this is not necessarily the case elsewhere

Common issues:

- Impact of ash on a wide range of assets and equipment**
- Clearing ash**
- Site access**
- Availability of filters, other spare parts**
- Supply chain issues generally**
- A need to understand the priority requirements of customers**
- Access to generators**
- Arrangements to encourage reduced demand for infrastructure services**
- Managing sub-contractors**
- Solvency issues (billing, payroll)**

Coordination of Science Advice

- ❖ **Auckland Volcanic Science Advisory Group**
 - Multi-agency, integrated local and national science capability
- ❖ **First trial of an 'operational science response'**
 - A single voice
 - Authoritative science advice
 - Informed emergency management planning and messaging
- ❖ **Need to improve the advisory group process (science and CDEM working together)**

Civil Defence Planning

- ❖ The exercise illustrated the importance of a robust multi-agency planning process
- ❖ In particular:
 - Identifying consequences of agencies' actions on other agencies / the response in general
 - Sequencing and synchronisation
- ❖ Plans were not always well communicated to all responding agencies

Developing Capability

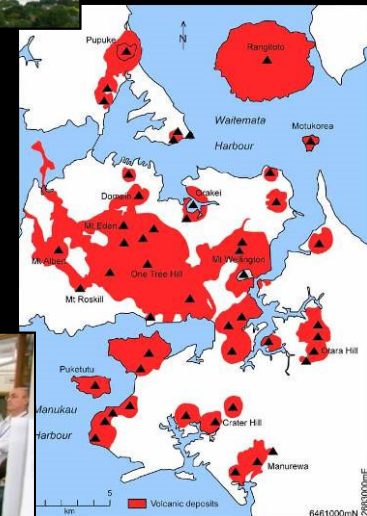
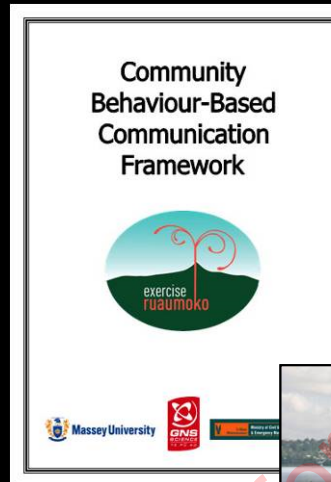
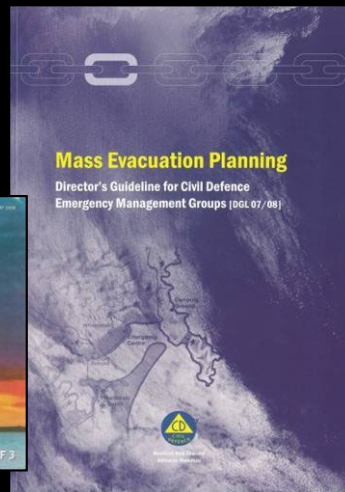
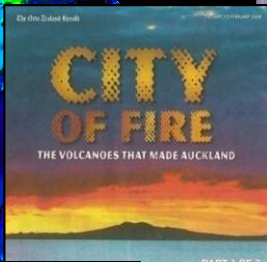
- ❖ 'Core' CDEM staff are not in plentiful supply
- ❖ Local, regional and national agencies have a dependency on 'non CDEM' personnel
- ❖ Volunteers are essential!
 - Need to maintain an ongoing training programme for volunteers (as well as core CDEM staff)
 - Need to maintain an ongoing engagement with their wider organisations

National Crisis Management Centre

- ❖ Vastly improved standard operating procedures
- ❖ Good leadership and advice to regions
- ❖ Need to be more proactive in coordinating responding regions
- ❖ The objectives of Government need to be communicated better
- ❖ The process around National Declarations requires further work (when? how?)

Exercise Ruauumoko: Conclusions





Exercise Ruamoko:

- ❖ provided lessons for volcanic crisis management
- ❖ provided the opportunity for extensive data collection across several disciplines
- ❖ created the opportunity for improved CDEM partnerships

Conclusion:

- ❖ *we are more prepared than we were*
- ❖ *we can be better still!*



"RESILIENT NEW ZEALAND – COMMUNITIES
UNDERSTANDING AND MANAGING
THEIR HAZARDS"

"AOTEAROA MANAHAU – HE PŪIOIO NGĀ HAPORI,
HE MĀRAMA KI Ō RĀTOU
PŪMATE ME TE WHAKAHAERE"

VISION



Further Results

❖ *Exercise Ruaumoko '08: Final Exercise Report*

- Ministry of Civil Defence & Emergency Management for the New Zealand Government

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