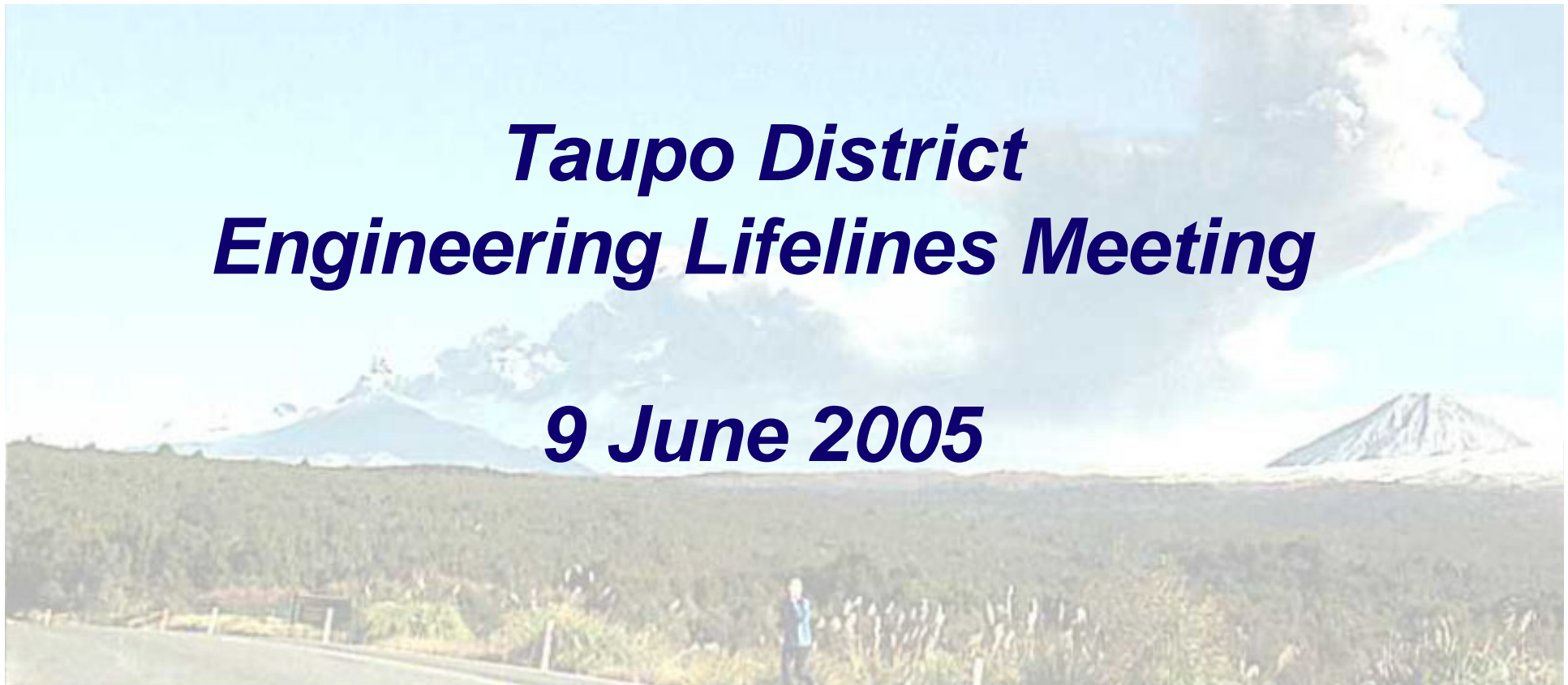


**WAIKATO ENGINEERING**

**Lifelines**

***Taupo District  
Engineering Lifelines Meeting***

***9 June 2005***



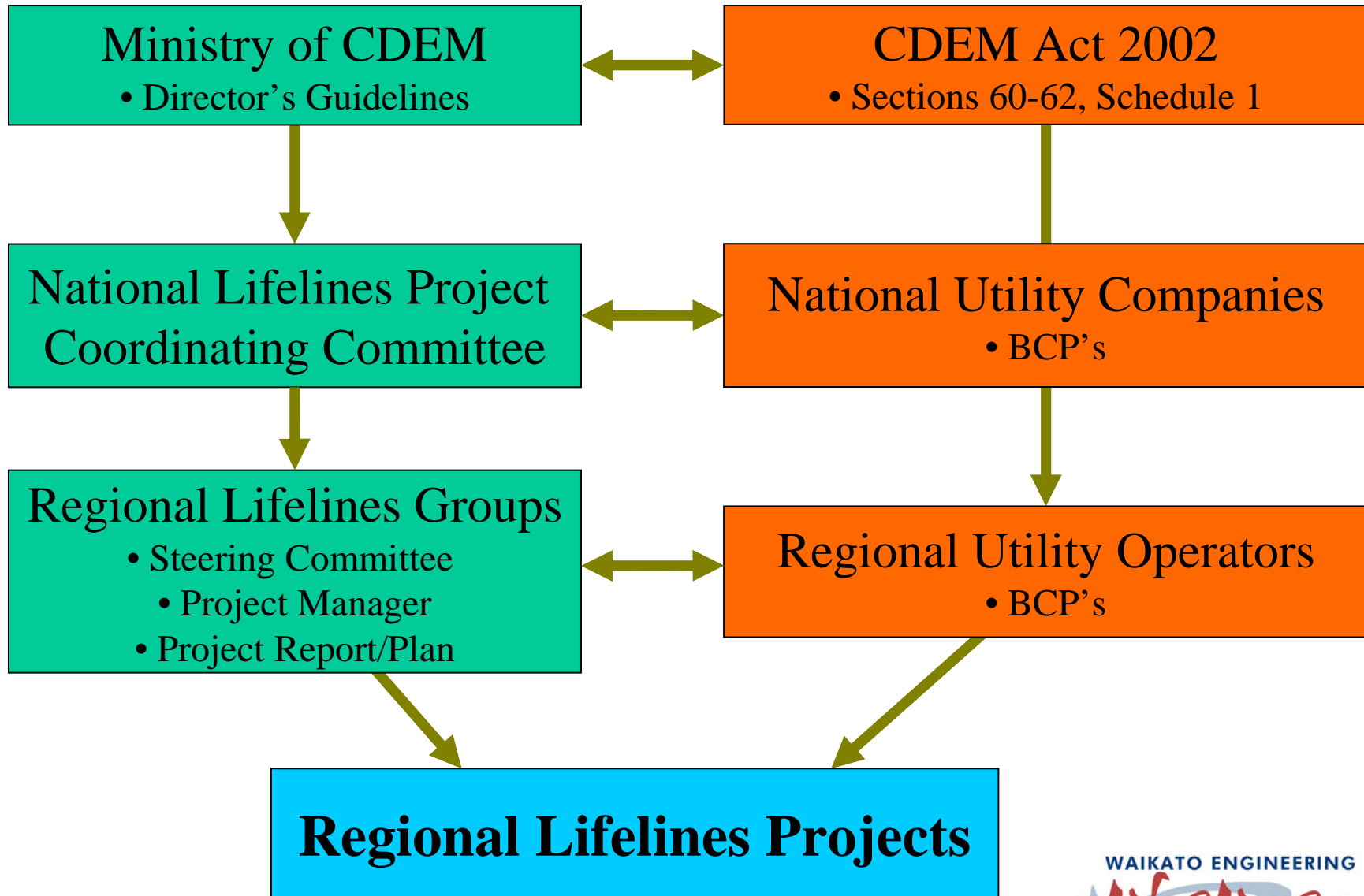
# Background

- Lifelines are those essential services which support the community - such as water, wastewater and stormwater, power, gas and telecommunications, or transportation networks
- The concept originated in the USA in the 1970s where most efforts had been focussed on the seismic response of buildings and other structures, rather than the performance of utility services

# What are lifelines projects?

- An avenue where utility network operators are brought together within a region
  - Input is also provided by scientists and engineers, emergency managers, and planners
- Lifelines groups facilitate and motivate a collective physical risk management process for regional scale events and impacts
- Lifeline projects aim to:
  - Reduce the level of damage following a major disaster; and
  - Reduce the time taken to restore normal level of service
- Visit [www.civildefence.govt.nz](http://www.civildefence.govt.nz) for more information

# NZ's Lifelines Scene



# National Lifelines Scene

- Engineering Lifeline Group's have been around since the early 90's
- Most regions have formed (or are in the process of forming) their own Lifelines Project
- Primarily based at regional councils
  - Holders of regional information
  - Best placed for overall coordination
  - Knowledge and expertise on hazards
- Work as a collective rather than individually
  - Best practice
- National actions are overseen by the National Lifelines Coordinator under the auspices of MCDEM

# Waikato Lifelines Structure

- First participant's meeting held May 2004
  - Lead to the formation of the WELG
- Project is overseen by a Steering Committee and Project Manager
  - Meets every 3 months
  - Agenda and Minutes are circulated/available
- Guiding documentation....
  - Terms of Reference
  - Draft Charter
  - Annual Work Programme

# Roles and Responsibilities

- National Lifelines Coordinator
  - National coordination
  - Best practice guidelines
  - Annual Forum
- WELG Members
  - Active participation (sub-project management)
  - Provision of information
  - Attendance at annual seminar and AGM
- Steering Committee
  - Administrative support
  - Decision making
  - Strategy development
- Project Manager
  - Implementation of work programme and oversee key projects
  - Editor of Quarterly Newsletter

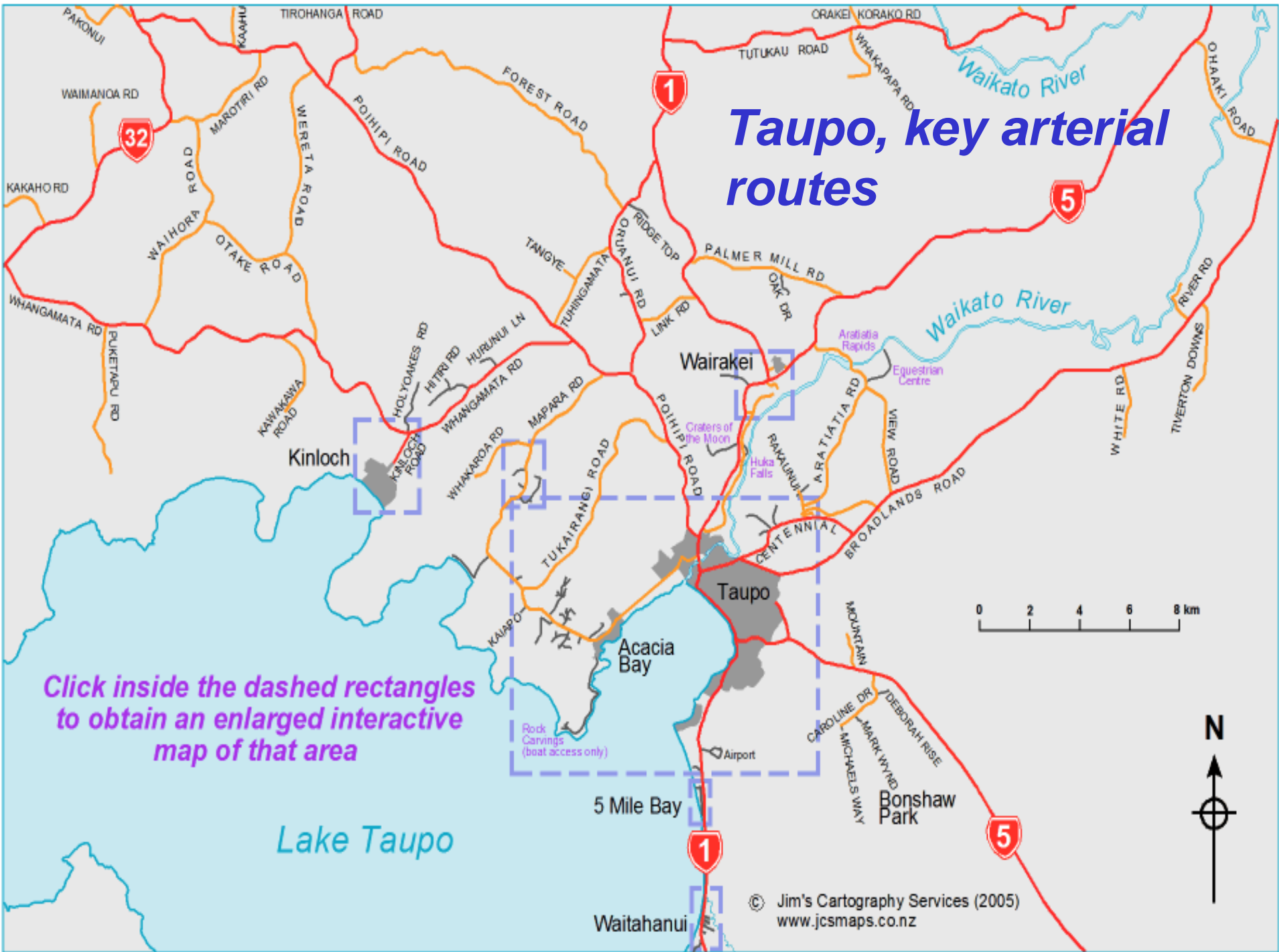
# Roles and Responsibilities (cont)

- Individual Utilities
  - Exchange relevant information
    - Risk management processes
    - Key elements of readiness and response arrangements
  - Commit yourselves to regional lifelines projects
  - Lead sub-projects where applicable
  - Investigate/consider vulnerabilities of key assets
  - If necessary, undertake repair/mitigation work
  - Provide technical advice as required
  - Develop and maintain BCP's
  - Network with other utilities
  - Identify interdependencies

# Taupo District



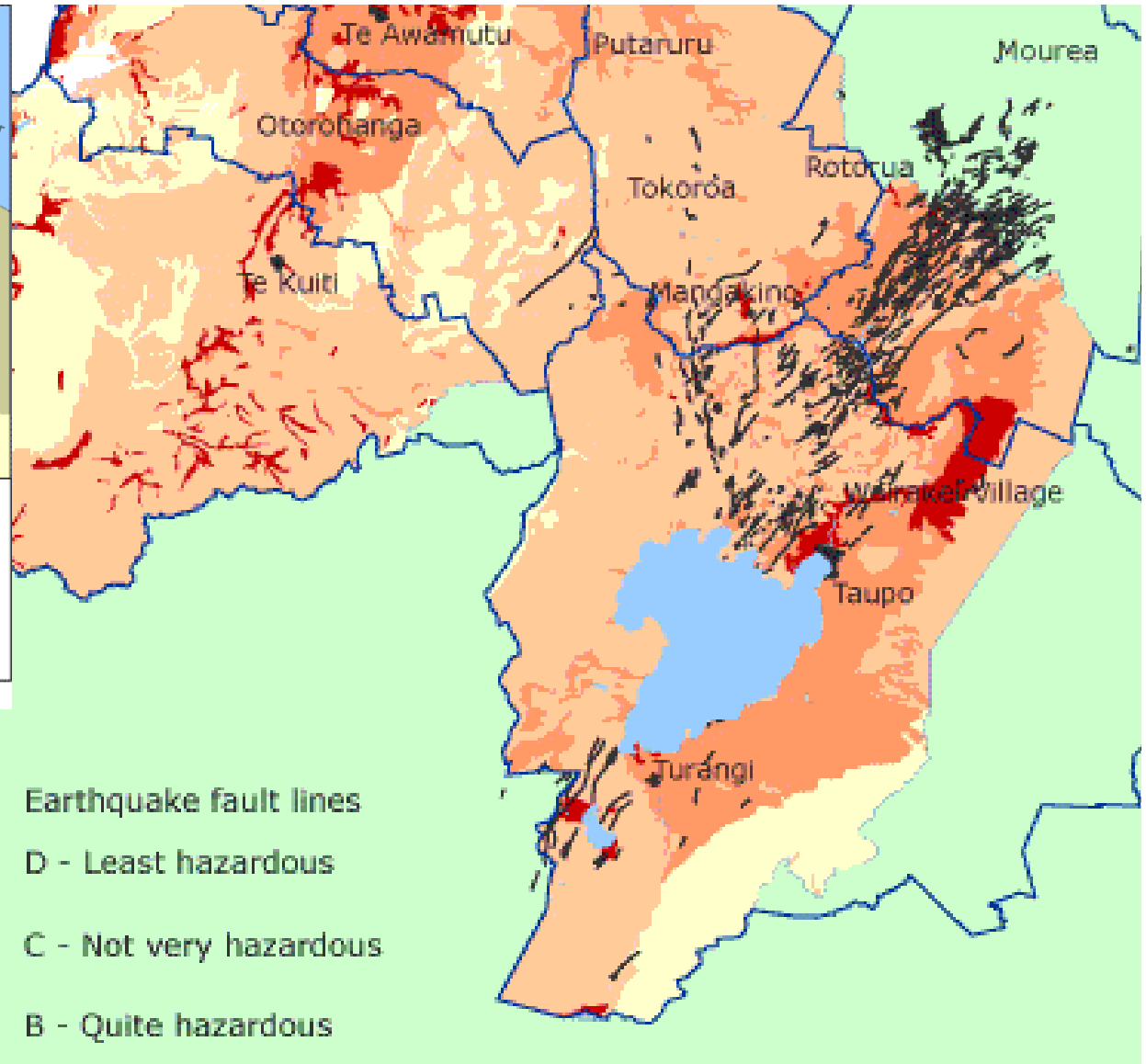
# Taupo, key arterial routes



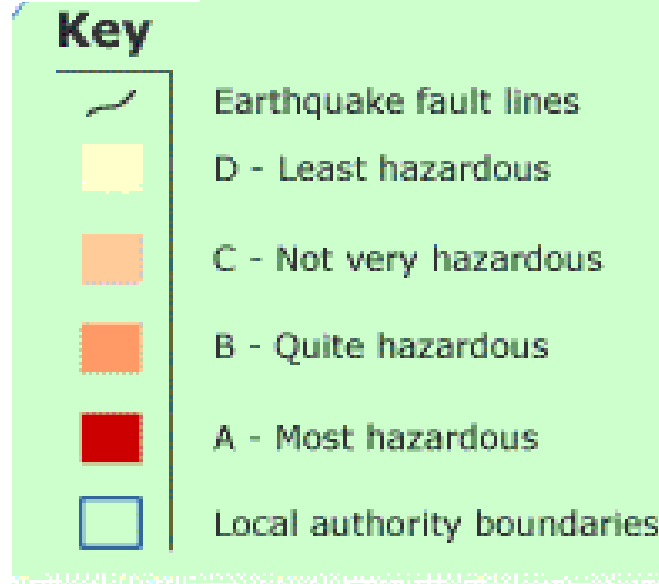
Click inside the dashed rectangles to obtain an enlarged interactive map of that area



Figure 1: Detailed plate tectonic setting of New Zealand



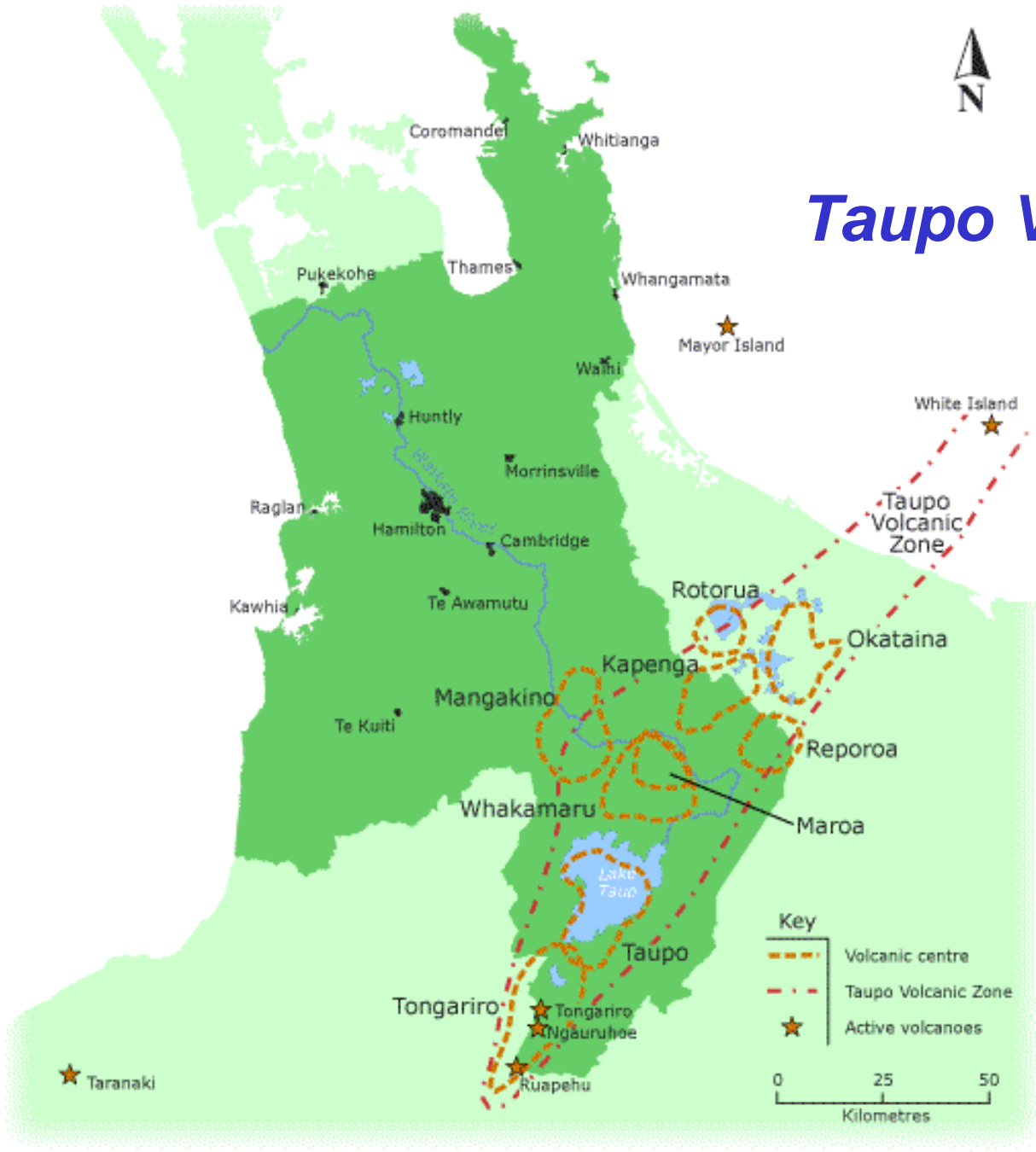
# Taupo Seismicity



nt and Disclaimer Information may appl

WAIKATO ENGINEERING  
**Lifelines**

# Taupo Volcanic Setting



Copyright and Disclaimer Information may apply. See [Map Disclaimers](#)





**1996, Mt Ruapehu**

WAIKATO ENGINEERING

***Lifelines***

**1996, Mt Ruapehu**



WAIKATO ENGINEERING  
**Lifelines**



**2005?, Ruapehu Lahar**

WAIKATO ENGINEERING  
**lifelines**

2004, Oruatu (SH1)



**1989, Hipaua (SH41)**



WAIKATO ENGINEERING  
**Lifelines**



**Rangiriri – SH1**

WAIKATO ENGINEERING  
**lifelines**



## *July 1998, Lake Taupo foreshore*

## *Geothermal Power Generation*



**Steam pipelines, Wairakei Power Station**



*State Highway network*



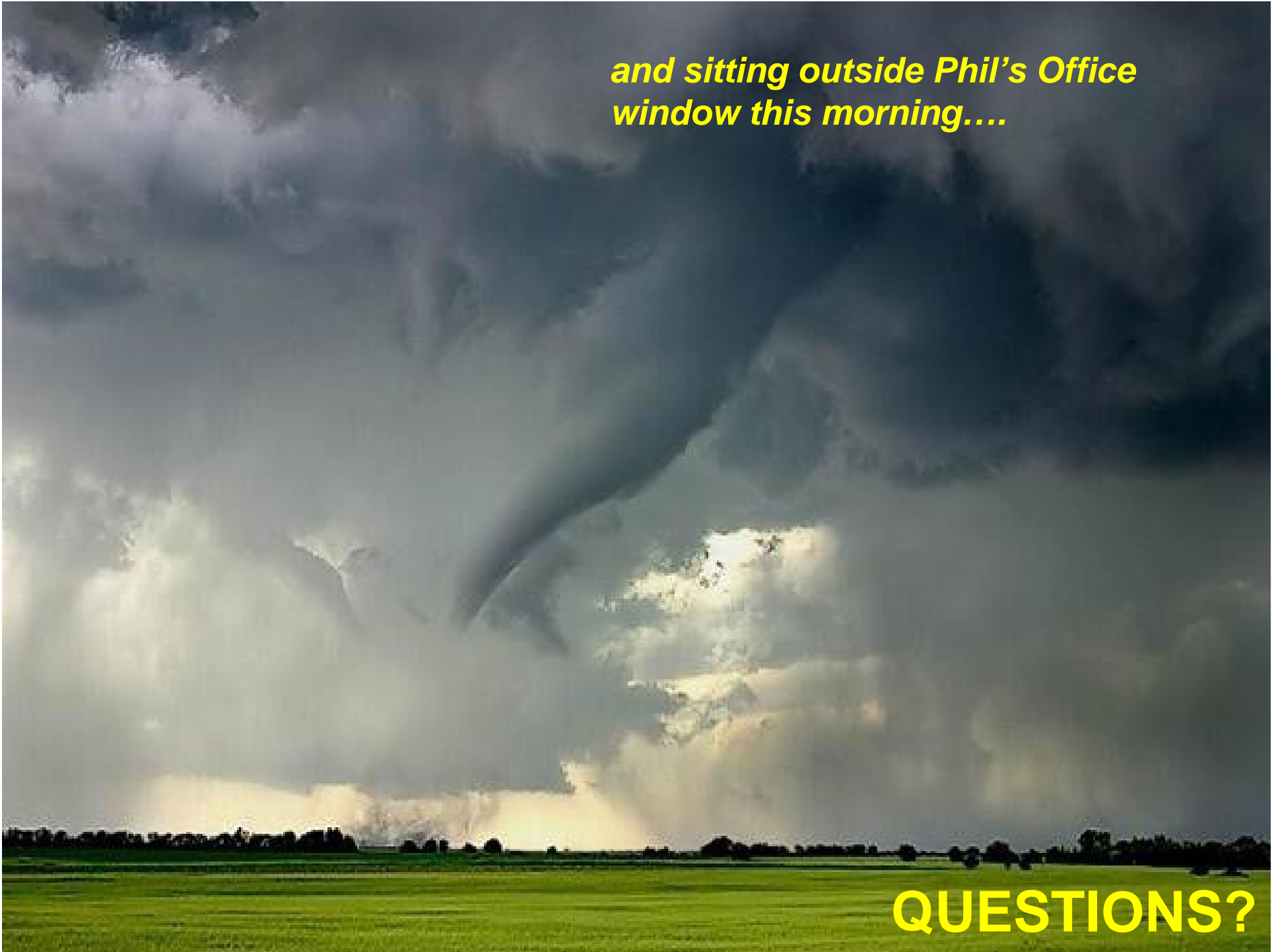
## *Taupo Airport*

WAIKATO ENGINEERING

*Lifelines*

*and sitting outside Phil's Office  
window this morning....*

**QUESTIONS?**



# So....where to from here?

- **Identify** the hazards which could affect your network
- **Compile** common GIS inventories of the various networks
- **Assess** the vulnerability of your lifeline network to each hazard
- **Assess** the potential damage to and consequences for each of your networks (i.e. interdependencies)
- **Identify and implement** practical mitigation measures
- **Facilitate** the preparation of comprehensive emergency response plans
- Refer handout (Wairarapa example)

# Signs of Success (Benefits)

- Assured compliance with the CDEM Act 2002
- Access to best practice concepts
- Enhanced ability to identify interdependencies
- Reduced costs through central coordination
- Reduced resource requirements through access to other successful projects
- Access to relevant activities such as workshops/seminars
- Closer working relationships between emergency managers, utility operators, and planners
- Ongoing forums for regular contact and interaction
- Products, products, products !!!

# Signs of Success (Benefits)..cont

- Vulnerabilities of key services from all hazards identified
  - There will be some commercial sensitivities (thereby preventing full disclosure on some assets)
- Robust and current BCP's
- Linkages and roles across between all lifelines agencies clarified
- Identification of interdependencies and priority areas/services for restoration
- Reduced damage and therefore “downtime” during an event
- Products, products, products !!!

# New approach/lessons learnt from other Areas

- Find out what members actually want or need? What are their expectations?
  - Outcomes, Products, Tools, Advice/Direction
- Focus on participants and build relationships as a basis for solving each other's problems/issues
- Readiness, Response and Recovery
  - Identify members – establish a contacts list
  - Exchange information
  - Develop a concise worklist
  - Identify critical sites/routes/assets
  - Determine interdependencies
- Reduction
  - Overlay network and hazard info
  - Identify vulnerabilities and info gaps
  - Action through respective BCP/AMP/Annual Plan etc

# ***DON'T FORGET.....***

- **WELG Breakfast Seminar and AGM**
  - From 7.30am, Tuesday 28 June
  - Hamilton Airport Motor Inn
  - RSVP to John Harris no later than Friday 17 June 2005
    - Post: 5 Riverview Lane, Te Aroha
    - Phone/Fax: (07) 884 9259
    - Email: [john.w.harris@xtra.co.nz](mailto:john.w.harris@xtra.co.nz)
  - See you there!