



**Auckland Engineering Lifelines Group**  
**Priority Utility Sites for Recovery**

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## Priority Utility Sites for Recovery

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In association with

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and

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## **IMPORTANT NOTE TO READERS**

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## **AUCKLAND ENGINEERING LIFELINES GROUP**

### **PRIORITY UTILITY SITES**

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## 1.0 Introduction

### 1.1 Background

The Auckland Engineering Lifelines Project (1995-1999), identified the vulnerability of Auckland's lifeline utilities to major natural hazards and made a number of recommendations for future projects to reduce the vulnerabilities identified.

The establishment of priority utility sites for recovery was identified as one of the most important projects by the Auckland Engineering Lifelines Group (AELG). The AELG has completed this project in two stages – the identification of priority transportation routes was carried out in 2000-2001 and this project expands the concept to other lifelines – communications, energy and water supply.

### 1.2 Project Objectives

The project objectives are:

- To ensure essential or emergency services are operational as soon as practicable;
- To identify essential critical lifeline utility sites;
- To confirm and document the priority sites that each lifelines organisation will recover first after an emergency taking into account the CDEM priorities and interdependencies with other utilities.

The expected benefits are:

- Co-ordinated and pre-agreed recovery prioritisation;
- A valid strategy for recovery for utilities to include in recovery plans.

### 1.3 Key Deliverables

The key deliverables from this project are:

- Each lifelines organisation has a list of critical community and lifeline utility sites in Auckland, has an assessment of the need for their service at those critical sites, and is able to assess emergency management expectations in light of company priorities.
- Each lifelines organisation has a prioritised list of their own critical sites for recovery taking into account the dependency on other critical sites for their service.
- There is regional list of critical sites for recovery in the Auckland region for use in emergency management.
- Managers of each critical community site are able to assess the adequacy of its emergency planning in light of understanding the priorities given to restoration of service by utility providers.

## 1.4 Assumptions

The project process must make several assumptions:

1. Participation by utilities is voluntary in nature – noting the Civil Defence Emergency Management (CDEM) Act 2002's implications for those classified as lifeline utilities.
2. Critical community site customers and utilities are assumed to have sound continuity planning arrangements in place.
3. Reviewing restoration priorities is part of the continuous Business Continuity Plan review cycle - not new business.
4. All parties adopt a **'ground zero'** approach, which says that: *Given all services/sites are down, which would be recovered first?* (not a scenario approach looking at specific damage following particular events).
5. Apart from a lack of utility service, critical sites are able to function to full capacity e.g. buildings are intact.
6. The methodology focuses upon understanding supply information, not utility network structures.

## 1.5 Background Discussion

Expectations of utilities acting for the public good during emergencies must be realistically balanced against commercial performance imperatives. Whilst market share and image grow with reputation of social responsibility, a balance is required to retain performance levels and competitiveness during times of emergency.

Utility operations staff generally have specified priorities for service restoration. These may be set directly by management through commercial consideration, and/or developed from a comprehensive business impact analysis. Utilities do not usually accept a contractual commitment to deliver an uninterrupted or perpetual service. Force-majeure may be invoked if:

- An emergency severely restricts an ability to continue service, and/or
- A Civil Defence emergency has been declared, and an appointed Controller seeks to use emergency powers to re-direct services under legislation such as the CDEM Act 2002 and associated statutory plans.

On the receiving end, utility customers with sites or services deemed to be critical to CDEM activity, expect to know where they fall in order of response and recovery effort coordinated by CDEM agencies. They also expect to know what priority is put on restoration of their service by utilities, and to understand the anticipated reduced levels of service during an emergency thus ensuring their emergency supply arrangements are adequate.

The ideal situation for all parties is that restoration priorities are agreed in advance, thus lending certainty to commercial negotiation for utilities, avoiding force-majeure and market disruption where possible, and providing sound emergency planning for communities.

## 2.0 Methodology

### Stage 1: Community Priority Sites

a) Establish overall community priorities	<i>Developed by the Project Committee with endorsement by Civil Defence Coordinating Executive Group (CEG)</i>
b) Identify specific community priority sites <sup>1</sup> for recovery	<i>Started with those identified for the Safe Routes Project with input from Civil Defence Officers in each district.</i>
c) Establish the reliance on lifeline utilities for the above sites to function	<i>Completed by emergency management staff at each local authority using a questionnaire (refer Appendix A).</i>

### Stage 2: Critical Lifelines Utility Sites

d) Each sector confirms their own key sites required for them to function	<p><i>In deciding what level of detail to list sites, the following were considered:</i></p> <ul style="list-style-type: none"> <li>• <i>The network as it is today;</i></li> <li>• <i>Whether the area of outage would be regionally significant if the site failed;</i></li> <li>• <i>Whether there is sufficient redundancy that you would reasonably assume an alternative supply point will be operating (if there is, the site is not a priority);</i></li> <li>• <i>Priority locations were defined as sites (places) or links (rings).</i></li> </ul>
e) Each sector establishes reliance on other lifeline utilities for them to function	<i>By completing a questionnaire for each site (refer Appendix A).</i>

### Stage 3: Interdependencies

f) Collation of lifeline dependency information.	<i>Each lifelines sector is provided with a list of priority community and lifelines utility sites and their dependency on them to recover.</i>
g) Each sector reviews the order of their own critical sites based on the information provided.	<i>Each lifelines sector/organisation looks at the loss of supply areas should each of their critical sites fail, and considers changing the order of their critical sites (if the site is important for other critical facilities in Auckland).</i>
h) Confirm overall regional priorities.	<i>Through discussion in sector workshops.</i>

<sup>1</sup> 'Community priority sites' are sites that are considered necessary for community recovery following an emergency.

## Stage 4: Level of Service Review

This stage is beyond the scope of this project, but is anticipated as a further step to be undertaken by individual lifelines organisations and their customers.

- i) Critical community and lifeline utility sites accept or upgrade levels of service resilience.

*Having identified desired levels of emergency utility service (type, quantity, quality and timeliness of supply) and assessed likely supply levels, critical site customers address service level gaps with utilities.*

*Longer-term resolution of supply gaps may include measures such as:*

- Accepting the gap and transferring operations to lessen demand, and/or*
- Critical site managers improving their emergency capacity;*
- Re-negotiation of contract with alternate providers;*
- Utilities improving robustness of supply.*

## 3.0 Key Outcomes

### 3.1 Overall Community Priorities

With consideration of the national CDEM priorities outlined in Appendix C, the following community recovery priorities have been agreed and endorsed by the Auckland Region CDEM Group for use in utility emergency planning:

1. Public Health and Safety (Hospitals, Ambulance)
2. Emergency Management (Police, Fire Service, Emergency Operations Centres)
3. Lifeline Utilities (Energy, Communications, Water, Transport)
4. Vulnerable Sectors (immobile or vulnerable groups of people such as rest homes, prisons)
5. Isolated Communities
6. Key Areas (CBD)
7. Commercial Producers
8. Residential zones

It is recognised however, that these CDEM restoration priorities must be flexible dependant upon the nature of the emergency. For example, during the Auckland power crisis of 1998, the Auckland Engineering Lifelines Group provided a critical facilities list – with public health and food safety given top priority – to prioritise restoration of power to the city.

It was agreed that the scope of planning for this project would encompass community recovery priorities 1 to 3. It is intended that priorities for recovering sites under items 4 to 8 would be decided 'on the day' and by individual planning by each organisation or may become the focus of subsequent CDEM planning activity. The main reasons for this are that

- The large number of sites/areas involved would over-complicate the project
- It would not be known till after the event which communities are isolated and which residential areas most damaged
- Issues relating to commercial confidence

### 3.2 Critical Community and Utility Sites

Appendix B lists the critical community and utility sites in order of priority for recovery and their dependence on lifeline utilities for them to function. The utility sectors have been prioritised based on the response from all community sites and other utilities on how important they are for recovery (for example, most sites ranked electricity as priority 1). More detailed information was gathered for each site (as detailed in the questionnaire pro-forma in Appendix A) and is available if required by emergency managers and lifeline utilities for more detailed planning.

Some comments on the rationale behind selecting critical sites for each sector, and other relevant sector issues are detailed as follows.

*This information not publicly available.*

## 4.0 Implementation

### 4.1 Lifeline Utilities

As part of this process, each lifeline utility has:

- Reviewed their critical sites list (Appendix B);
- Reviewed their dependency on other utilities at those sites and backup arrangement should those utility services fail;
- Carried out some form of interdependency and resource conflict assessment.

After reviewing the results in Appendix B, there is an expectation that lifeline utilities will, as appropriate:

- Review their customer prioritisation list and adjust if appropriate;
- Initiate further utility sector based discussions to optimise service during emergencies and protect the marketplace within the bounds of commerce;
- Adjust individual recovery plans to allow for updated priorities;
- Amend or re-negotiate supply contracts if required;
- Improve network robustness or redundancy where deficiencies are highlighted.

### 4.2 Community Sites

As part of this process, each critical community site has:

- Reviewed its emergency and business continuity planning;
- Prioritised its service requirements;
- Identified emergency or backup/alternate arrangements;
- Described its desired restoration levels given its maximum outage capacity.

After reviewing the results in Appendix B, there is an expectation that critical community sites will, as appropriate:

- Incorporate prioritisation results within their emergency plans;
- If a gap exists between emergency service levels and business continuity plan capacity then:
  - Upgrade emergency arrangements; or
  - Re-negotiate and improve service delivery; and
- Establish a relationship with CDEM organisations.

### **4.3 Emergency Management**

As part of this process, the CDEM Group has;

- Developed and agreed CDEM restoration priorities
- Identified critical community and lifeline utility sites by category
- Assisted in identifying utilities supplying services to critical community sites;

After reviewing the results in Appendix B, there is an expectation that the CDEM Group will, as appropriate:

- Develop its CDEM Group Plan to reflect agreed recovery priorities, and ensure plans of partner agencies reflect the priorities;
- Identify significant gaps between expected service delivery as stated in critical sites business continuity plans and service delivery identified through this process, and assist the parties to resolve these gaps;
- Strengthen on-going utility and critical site relationships with CDEM Group and bodies such as Lifelines Groups.

### **4.4 Auckland Engineering Lifelines Group**

The Auckland Engineering Lifelines Group plans to carry out a review in 2005 to ascertain whether expectations have been met and what actions have been taken by community site managers, lifeline utilities and emergency managers as a result of the report.

*Appendix A and B not available.*

## Appendix C – National CDEM Priorities

National CDEM prioritisation of response activity is broadly indicated within the National Civil Defence Plan and includes:

1. Preservation of life – rescue and triage (prioritization of injured)
2. Maintenance of law and order – supporting police operations
3. Care of sick, injured and welfare provision – first aid, medical and evacuation facilities
4. Property protection – supporting fire services
5. Maintenance and restoration of essential services – water, sewerage, telecommunications, electrical power and gas, food, essential items, transport services, public information and media.

Whilst safety of life issues will always be given first priority, the economic viability of communities, and of the nation as a whole, however, depends upon the continued operation of lifeline utilities. The National Civil Defence Plan provides utility guidance on restoration priorities for the energy sector as:

1. Medical centres (including hospitals);
2. Civil defence headquarters and other civil defence centres;
3. Energy control centres;
4. Communications networks;
5. Water and sewage pumping;
6. Gas production facilities;
7. Liquid fuel pumping and delivery;
8. Essential domestic/commercial/industrial uses;
9. Other purposes.

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### **Auckland Engineering Lifelines Group**

Auckland City Council  
Auckland International Airport Limited  
Manukau City Council  
Auckland Regional Council  
Earthquake Commission  
Metrowater  
North Shore City Council  
Natural Gas Corporation  
Rodney District Council  
Transit NZ Ltd  
Telecom NZ Ltd (current AELG Chair)  
Transpower Ltd  
Vector Ltd  
Waitakere City Council  
Watercare Services Ltd

The AELG Sub-Committee managed the project and met regularly to develop the methodology and ensure it was being applied to provide a consistent output, and assisted with inputs to the report.

### **Project Committee**

Daniel Newcombe (Chair to February 2003)	Manukau City Council
Robert Burley (Chair from March 2003)	Vector
Lisa Roberts (Project Manager)	Maunsell
Louise Chick	Auckland Regional Council
Michele Daly	Auckland Regional Council/Kestrel Group
Hans Brounts	Ministry of Civil Defence and Emergency Management

## Task Groups

The following utility organisations participated in task groups and/or provided inputs to the project.

### Water

Martin Werner (Watercare)

### Energy

Robert Burley (Vector)

Will Oxley (Vector)

Ian Cummings (Shell NZ)

Adrian McLellan (Wiri Oil Services)

Dan Hynson (NGC)

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### Communications

Brian Potter (Telecom)

David Tapp/Ranald Ducat (Telstra Clear)

Ron Bush (Vodafone)

Cliff Baker/Mike Lansdown (Radio Networks)

Derek Neilson (BCL)

### Transport

Edwin Dearham (Waitakere City Council)

Indra Gywali (North Shore City Council)

Murray Parker (Transit/Serco)

Roy Robertson (Auckland International Airport Limited)

## AELG Steering Committee

The AELG Steering Committee developed the project concept, obtained funding, and reviewed and provided inputs to the draft report and maps.

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Maunsell

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Ministry for Emergency Management

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Watercare Services Ltd

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