

Infrastructure research day 2022

Wellington Lifelines Group (WeLG)

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Discussion items

- Planning Emergency Levels of Service (ongoing)
- Transport vulnerability mitigations (Wairarapa)
- Future research thoughts...

Planning Emergency Levels of Service (PELOS)

15-20 litres of water per person, per day, from day 8

- Preliminary PELOS have been published (April 2022)
- ‘Operationalised’ PELOS for the:
 - Wellington region should be published early 2023.
 - Wairarapa are being created.

The Airport should be able to operate a 1,200m long runway within 2 days of a major event



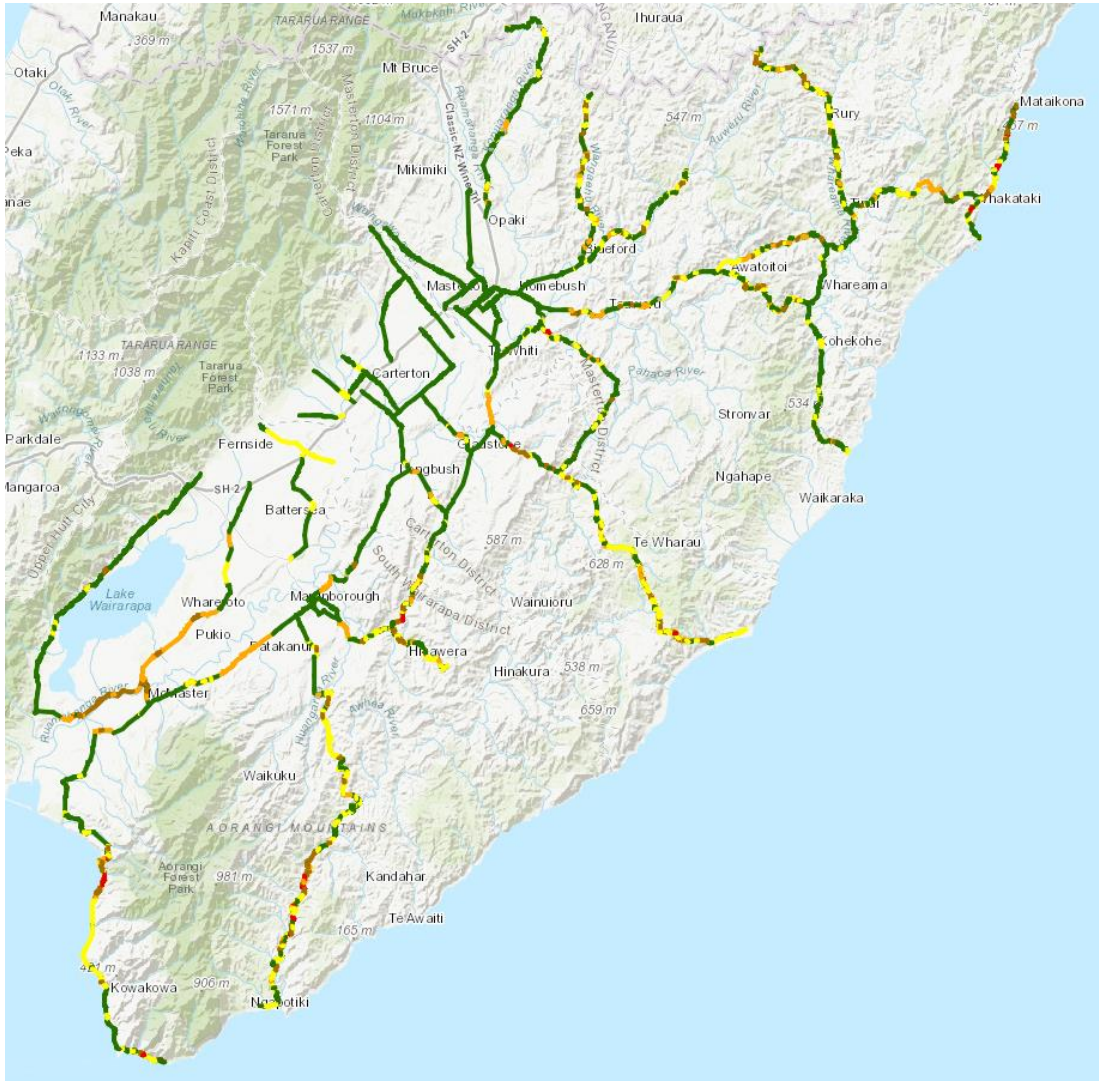
Wellington region – infrastructure planning emergency levels of service’ - OPERATIONALISED FRAMEWORK for a MAJOR REGIONAL HAZARD EVENT

Issue	The first week self-sufficiency for seven days	For the rest of the first month: basic functionality	For the second and third months: moderate functionality	Beyond: full functionality
Water	Minimum of 7 litres per person per day ¹ , but recommended 20 litres per person per day, accessed at least by individuals	15-20 litres of water per person per day ¹ or 10 litres of hot water ²	15-20 litres of water per person per day ¹ or 10 litres of hot water ²	Full functionality towards a 'normal'
Roads	Limited road use – only priority 1 routes or immediate alternatives are open to emergency vehicles. Muting and cycling routes to local medical centres and to Community Emergency Hubs is available.	Priority 1 routes are open and managed ³ ; priority 2 routes or immediate alternatives are open to emergency vehicles and, where resources allow, some public transport services too, where roads are open and available.	Priority 1 and 2 roads are open and managed; priority 3 and 4 roads or alternatives are open for emergency vehicles only and, where resources allow, some public transport services too.	Full functionality towards a 'normal'
Food and drink (for people)	As varied as practical options, provided by F&M U suppliers who are self-sufficient or emergency food supply brought in with priority to vulnerable people	Access to a supplied supermarket or distribution point ⁴ within 200m following an alert for other sites	Access to a supplied supermarket within 200m in other sites	Full functionality towards a 'normal'
Power	Distal only where access, power and resources allow ⁵ , critical services ⁶ to priority list of users (e.g., emergency services) using fuel storage in place at time of emergency	Distal only where access, power and resources allow ⁵ , critical services ⁶ to priority list of users (e.g., emergency services) using fuel storage in place at time of emergency and any immediate re-supply	Ability to install full flow both (or part) to work through. Priority, or selected, sites are operating.	Full functionality towards a 'normal'
Power (availability)	Has capability to use from local sources ⁷ and require priority sites ⁸ (including hospitals and key facilities) and medical centres, pharmacies and supermarkets use own pre-arranged power supply for essential functions.	Has capability to use from local sources and require priority sites ⁸ (including hospitals, medical centres, pharmacies, and supermarkets) use own pre-arranged power supply for essential functions.	Power to respond priority sites and key utility sites ⁹ .	Full functionality towards a 'normal', but using smart lighting ¹⁰ .
Telephone	EXAMPLE: Access to mobile data (via work and personal broadband at defined locations such as at Community Emergency Hubs ¹¹) (H1 dialling only available from these locations.) Supplies (not input) usage where phones are charged	EXAMPLE: Mobile phone services in some locations, where access only with unattended devices at Community Emergency Hubs. EXAMPLE: Supermarkets, service centres, banks and medical centres have internet access, where they have arranged for connectivity.	EXAMPLE: Access to mobile data for at least minimal use supply, with capacity constraints (congested) at some times of day. Some locations may be available if the end user has power. EXAMPLE: Priority users have full service.	Full functionality towards a 'normal'
Broadcast	Full radio – priority stations ¹² (by operation) ¹³	Full functionality for priority radio services, no TV	Full functionality for priority radio services, no TV	Full functionality towards a 'normal'
Business	Self-sufficiency by the community for essential needs (long shops, two banks or similar for essential services)	Services, according to the 'two banks' plan ¹⁴	Services, according to the 'two banks' plan	Full functionality towards a 'normal'
Buildings	Zone level of service. Sites warm at homes.	Priority delivery of essential gas. Water collection in common (even if flow transfer stations or local deepwell locations).	Smart collection connections.	Full functionality towards a 'normal'
Medical	Zone level of service	Critical customers are supplied by the disaster and recovery equipment, where customer has made own arrangements.	Major problems to some extent ¹⁵ . Some critical customers are to some extent ¹⁶ . Some suburbs have pipeline re-connections ¹⁷ .	All customers re-connections ¹⁸ .
Port	Freight: zone level of service for days 0 to 1. Full ability to berth a ship at the fuel terminal by day 8.	Freight: 400 TEUs (200 containers), or equivalent, per day ¹⁹ .	Freight: 400 TEUs, or equivalent, per day. Other port functions may continue, if the port is less damaged and the transport and power networks are available.	Full functionality towards a 'normal'
Airport	The Airport should be able to operate a 1,200m long runway within 2 days of a major event ²⁰ .			If specialist equipment and material is available, a length of runway sufficient to land and take off a twin jet aircraft will be available ²¹ .
Shelter	Shelter within own property or with location support networks or at mass temporary accommodation sites ²²	Shelter within own property or with location support network or at alternative site.		

Assumptions/caveats:

- Welfare support will be required for the more vulnerable – this will be achieved by support from family and friends, by the spontaneous community response within the suburbs using existing assets available, targeted support to communities by the official response and/or NGOs and/or through official welfare support, where and when available.
- The PELOS shown in this table refer to potential official response. Latent local and community capacity will contribute to all aspects of the response²³.
- These recommendations may not be achievable and are only presented for planning purposes. Actual hazard events will define what is, and what is not, achievable 'on the day'.
- These recommendations are developed by practitioners, with the knowledge of the likely potential response capabilities in the Wellington region. They are not expected to be used in other contexts/locations (for which other, separate, recommendations could be developed.)
- All of the above assume an able-bodied person is able to access these services independently. The more vulnerable will need to be assisted by others in the community (see also footnote 1 in the framework).
- "End-user experience may vary" throughout - delivery is dependent on location and circumstance at time of the emergency.

Transport vulnerability – Wairarapa



Future thoughts...

- Emergency response plans (logging tracks?)?
- What physical mitigations could be carried out?
- Cost of the mitigations?
- Value of implementing the mitigations?

Future research thoughts...

- For the Wairarapa... as above...
- For / relating to PELOS...
 - Tipping points – when would people leave their homes?
 - Walking distances that Wellington residents could manage in an emergency?
 - Vulnerable people's access to services in an emergency?
 - Loss of access for the emergency services (Police, FENZ, Ambo). Consequences?
 - How quickly does fuel run out, and how to re-supply?
 - Public transport networks in an emergency that impacts roads?