

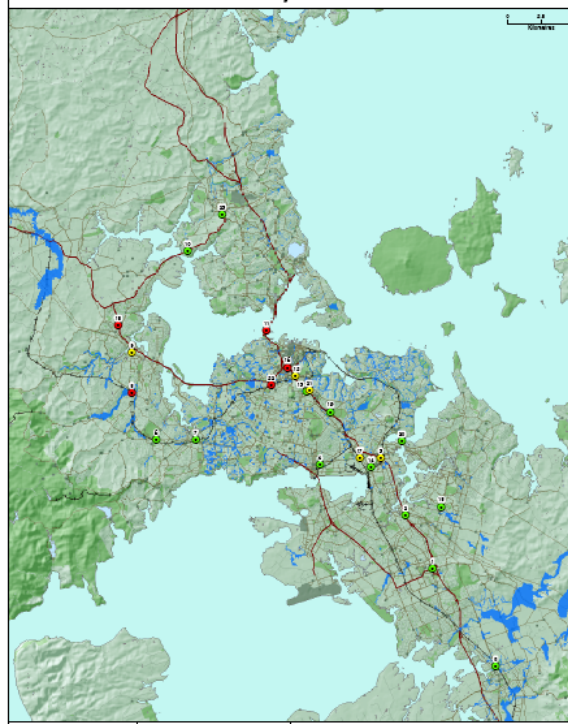
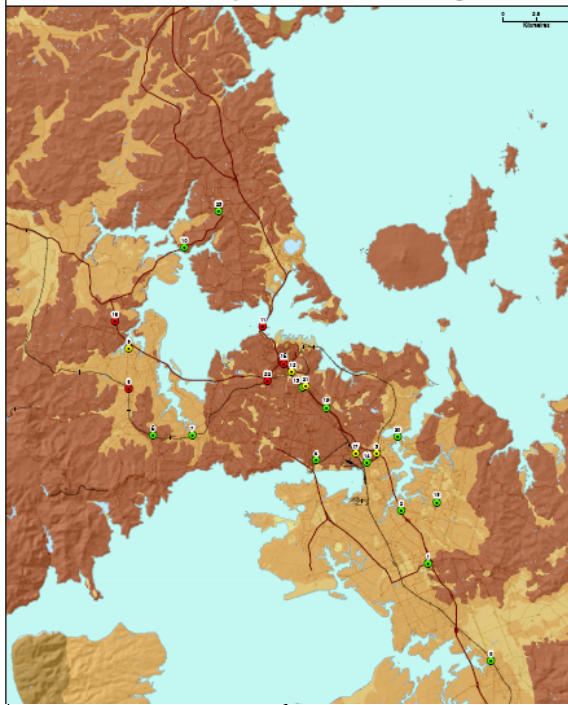
Auckland Engineering Lifelines Project Phase 2

Lisa Roberts
AELG Project Manager

“AELG-20” – Scoping phase

- **Our questions**

- Should we carry out ‘AELP-2’?
- What would we want to achieve?
- Has the infrastructure changed?
- Is there new hazard information available?
- Should we focus on hazards we didn’t look at in AELP-1?
- Are there new methodologies we can apply?
- What value will we get from the project?
- What do the utilities want to achieve?



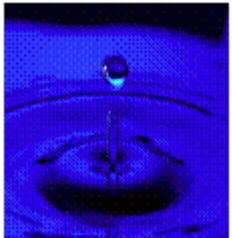




“AELG-20” (i) - Objectives

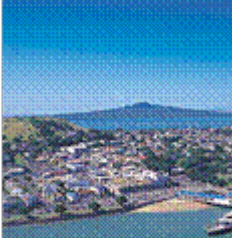


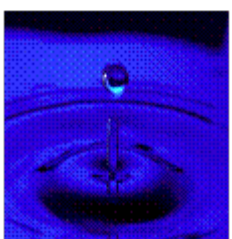
Confirmed our objectives for Stage 2 as understanding:

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- The impact of various hazards on their lifeline infrastructure in terms of expected damage to assets;
 - The impact of various hazards on their lifeline infrastructure in terms of expected impact on supply to customers;
 - The consequential impacts of an outage of a component of critical infrastructure on other infrastructure (interdependencies);
 - The economic and community impacts of such discrete or consequential outages; and
 - Through the above, identify the Region’s high risk / vulnerable assets.
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“AELG-20” (i) Hazard Priorities

- 
- **Through pairwise analysis, identified as:**
 - Local volcano, earthquake
 - Distal volcano
 - Regional tsunami
 - Technology failure
 - Cyclone
 - Infrastructure aging
 - Distal tsunami
 - Coastal erosion
 - Climate change
 - **New hazard information available for most hazards**



“AELG-20” (i) – Critical Assets Defined.

- **Nationally Significant**

- Loss of supply to most of the Auckland region, and/or significant impact on other regions, and/or reduction in service across the country.
- Loss of supply to a nationally significant customer

- **Regionally Significant**

- Impact of failure is:
- Loss of supply to more than 20,000 customers or reduction in service across most of the region.
- Loss of supply to a regionally critical customer

- **Locally Significant**

- Impact of failure is:
- Loss of supply to more than 5,000 customers or reduction in service across part the region.
- Loss of supply to a locally significant customer.



“AELG-20” (i) Tools Reviewed



- **CIPMA**

- Meets all our requirements, but
- 8 figures (\$10s of millions)



- **CAPRA**

- Meets most of our requirements, but
- 7 figures (\$millions)

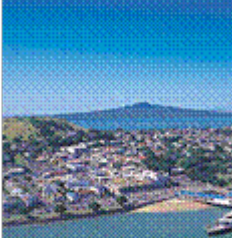


- **Riskscape**

- Meets some of our requirements, and may get results with 6 figures (100,000's).
- More likely to be able to influence development

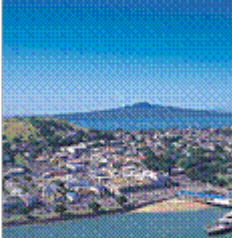


Committee decided preferred approach : Riskscape

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- **Reviewed utility data available against Riskscape data requirements and found:**
 - Asset location generally defined with GIS coordinates
 - Significant amount of building data not available
 - Basic pipe/cable data (material, size) generally OK
 - Variable levels of information on asset capacity, condition, replacement cost – major gaps.
 - Would need data manipulation to translate most existing data into required fields.
 - A lot of the data could be derived from other data (eg: flexibility derive from material type).


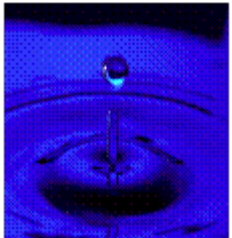


Committee decided preferred approach : Riskscape

- 
- An RFP was sought to carry out AELP-2 using Riskscape.
 - The assessment of utility data available was to enable a more accurate cost to be obtained.



But

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- Unable to obtain certain cost or timeframes on delivering outputs required.
 - Costs were well beyond current AELG budgets and external funding seemed unlikely.
 - Our preferred approach of ‘we provide the information you provide the tools and analysis’ was not acceptable.

Moving forward

- We need to update the AELP.
- It is an important foundation document for Auckland's infrastructure resilience and it is well out-of date.
- We have a lot of knowledge already that can be used to update the report.

Therefore agreed to

- update the AELP report using latest utility and hazard information and a simple workshop-based approach



Emergency Communications Systems, Processes and Plans

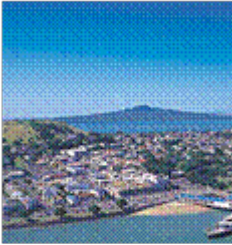
AELG-1: Inter-Utility Emergency Communication Systems

AELG-2: Lifelines Co-ordination - Response

AELG-8: Coordination of Public Communications (Utilities)

AELG-15: Auckland Region Fuel Contingency Plan

Lifeline Utility and CDEM Communication Protocols



Critical Infrastructure and General Hazard Vulnerability

AELG-3: Auckland's Infrastructure Hotspots

AELG-5: Priority Sites and Routes for Recovery

AELP-1: Auckland Engineering Lifelines Project, Phase 1.

AELG-20: Infrastructure Vulnerability to Hazards (AELP Phase 2).



Volcanic Ash Impacts

AELG-7: Health and Safety Issues in a Volcanic Ash Environment

AELG-9: Poster for Airports Mgrs Responding to Ash Event

AELG-11: Volcanic Ash Impacts on Auckland's Water Supply.

AELG-11a: Poster for Water Supply Managers

AELG-13: Ash Impacts of Lifelines, Collection/ Disposal Issues

AELG-14: Poster for Wastewater Managers

AELG-18: Poster for Rooding Managers

AELG-19: Impact of Ash on Electricity, Telecommunications, Broadcasting Networks.

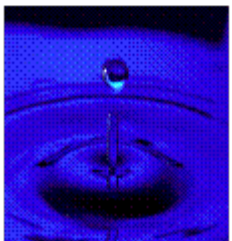


Emergency Management Exercise Reports

AELG-4: Exercise Marconi

Exercise Ruaumoko

Exercise Jaffa




Other Miscellaneous Reports

AELG-6: Resources Available for Response and Recovery

AELG-10: Guidance on Business Continuity Mgt and Plans

AELG-17: Review of Regional Generator Resources

AELG Projects




“AELG-20” (ii) – Project Brief

What do we want to achieve?

- 
- Updated maps of critical infrastructure in the region (in line with the revised criteria developed by AELG).
 - Updated hazard maps and data where available.



Through workshops supported by map overlays of the hazard and utility maps....

- 
- An assessment of the impact of each hazard scenario on the critical infrastructure, both in terms of physical damage and service impacts.
 - An assessment of the broader economic and community impact of the infrastructure failure arising from each hazard (generally qualitative).
 - Identification of steps that can be taken by utilities, community organisations and government agencies to mitigate the economic impacts.

Activity	Complete by:
Collation of utility data into ARC GIS on an 'as available' basis (coordinates, criticality, name, installation date, fragility risk, capacity)	30 Nov.
Develop report outline/structure and folders.	20 Dec.
Workshop to develop methodology for assessing inter-dependencies and community impacts (social, environmental, economic) arising from utility failures.	20 Dec
Review/distil key information from all AeLG volcanic impact projects and Exercise Ruauumoko into new volcanic impact section of AELP report.	
AELG workshop to confirm utility impacts from volcanic hazard and content of AELP 2 volcanic hazard sections.	30 Mar '10
Update 'lifelines' section in AELP report based on latest utility data provided.	30 Mar
Review 'hotspots' analysis taking into account updated asset criticality information. Include in AELP-2.	30 May
Prepare maps overlaying utilities with tsunami inundation maps.	30 May
Workshop to assess utility impacts, interdependencies and community impacts.	30 June