Volcanic Impacts Study Group – 13 February 2004

Subcommittee of the Auckland Engineering Lifelines Group

Objectives:

To facilitate improved knowledge about the impacts of volcanic hazards (e.g. ash) on, and mitigation measures for, lifeline infrastructure.

To facilitate and support research on the impacts of volcanic hazards on lifelines and development of appropriate mitigation measures, including:

- Methods for protecting vulnerable equipment and facilities from volcanic ash.
- Corrosion and abrasion potential of volcanic ash.
- Effective and efficient ash-removal methods for equipment and facilities.
- Management of ash removal.

To provide input into the applicability for lifelines of any research being undertaken.

To facilitate reconnaissance investigations, and/or advocate lifeline representation on reconnaissance investigations, to active volcanic areas where this would add to our knowledge about volcanic impacts on infrastructure.

To provide a national focal point for volcanic impacts work on lifelines (as Wellington currently is for earthquakes).

Expected Benefits:

- Improved knowledge of the impacts of volcanic hazards on infrastructure and mitigation options.
- Better linkages with the research community.

Background:

Project AELG/11 in the AELG's current business plan was intended as follow-up to some of AELG's earlier work on volcanic ash impacts, although the follow-up wasn't specific. This study group seeks to recommend specific projects AELG (or others) may wish to undertake. Any research sponsored by AELG (such as that in AELG/11) would need to meet some agreed criteria (e.g. be of direct benefit to lifelines) and the study group could establish those criteria in the first instance. The study group would be ongoing, with activity levels varying from year to year depending on funding allocated or whether any research was being sponsored etc. The study group would comprise a team of core members (including people external to AELG – see below). It is suggested that the project be low key, interfacing with research institutes, and recommending back to the AELG any projects which might be suitable for AELG funding or part funding. A key function of the project would be to leverage other funding sources for projects. This project would partially fill a gap in volcanic research on lifelines, similar to that currently being provided by the NZ Soc. for Earthquake Engineering for research on earthquakes.

Scope/ Deliverables:

Would vary from year to year, depending on the level of activity.

- First year – develop priorities for research and criteria for assessing research proposals. Develop reconnaissance protocols. An assessment of the vulnerability of Auckland's water supply is also proposed (AELG/11).
- Subsequent years - at least a brief annual report on the activity undertaken (e.g. progress on any sponsored research, proposals for projects for AELG funding, report on sourcing additional funds etc.).
- Subsequent years - at the most, an AELG report on any reconnaissance investigations undertaken by members, copies of research theses made available etc.

Link to other projects:

The study group would link to work being under taken by GNS and New Zealand universities.

Structure and linkages:

- **Champion (AELG Steering Committee Member):** Louise Chick (ARC/AELG).
- **Contact:** Michele Daly (Kestrel Group/AELG), md@kestrel.co.nz
- **Core sub-committee:** Louise Chick (ARC/AELG), David Johnston (GNS/AELG), Michele Daly (Kestrel Group/AELG), Ian Smith (AU), Jim Cole (CU), Terry Boyle (Transit/AELG), John Scott (TDC), Bruce Shephard (EQC), Rob Lorden (Rob Lorden Consulting/AELG).
- **Wider Interest Group:** Vince Neall (Massey University), Brad Scott (GNS), Joy Hovard (GNS), Shane Cronin (Massey University), Geoff Kilgour (GNS), Jan Lindsay
- **AELG utility organisations** to be kept informed through regular reports by Study Group to Steering Committee.
- **Research providers** undertaking FRST-funded research in the area (e.g. GNS, University of Canterbury, University of Auckland, Ian Nairn).
- Other **stakeholder groups** to be engaged through workshops and review of draft reports.
- Other possible **benefactor organisations** that should be kept informed of the project include the Ministry of Civil Defence Emergency Management.

Methodology:

The study group will have three main activities:

1. **Facilitating and promoting research.** This will be done by workshops (proposed one annual workshop), distributing updates on research activities and their outputs (papers, reports).

2. **Reconnaissance investigations**. The core sub-committee would organise and promote reconnaissance investigations in accordance with nationally established reconnaissance investigation protocols.

3. **Special projects.** The sub-committee will develop special projects. Consultants (which may also include sub-committee members) will undertake these. Mixed funding sources are proposed for the projects (depending on the project). In 2003/4 a project to review the vulnerability of the water supply to volcanic ash is proposed.

Resources:

Apart from any special projects, only low levels of funding are required (workshop costs). The cost of reconnaissance will be raised by a separate procedure and will seek funds from other organisations (EQC, GNS, MCDEM etc). Some support maybe sought from AELG to sponsor members.

Risks and Management Measures:

- Considered low risk, high yield.
- Risk of higher cost than expected or takes longer (AELG to approve tender price for special projects).

Reviews & Approvals

- Initial special project approval (AELG Steering Committee).
- Approval of project briefs, consultants and prices (AELG Steering Committee).
- Review of draft reports (AELG Steering Committee).