1. Background and purpose

One of the Strategies defined in the National Emergency Management Strategic Plan 2000-2005 is to: ‘Facilitate and Set Priorities for Directed Emergency Management Research’. In April 2000 the National Emergency Management Executive Group...
(NEMEG) endorsed the development of a collaborative research program based on a centre incorporating RMIT, ANU and EMA. The Risk and Community Safety Research Initiative has been established to develop that program. Research is seen as an essential part of a move in emergency management towards “evidence based practice” and away from tradition and untested assumptions.

One of the first tasks of the Risk and Community Safety Research Initiative has been to establish an agenda of strategic research needs for Australian emergency management. This document is the third draft to emerge from a process designed to ensure that the needs of emergency managers set the agenda. It is based on the results of a Workshop of state officials and others held at AEMI in April 2001. The Workshop drew on the earlier drafts and written submissions from around Australia, as set out in a draft research agenda prepared for that meeting.

This document sets out the final Research Agenda (in Sections 3 and 4) and summarises the process used to develop the Agenda (in Section 6). It also contains in summary form the priorities listed in the initial “Options paper” developed in November 2000, and the priorities suggested by consultants and academics.

Consultation could have been much wider with more time and resources. However, as there is reasonable agreement on the Agenda across a wide range of state and Commonwealth officials we are confident that the list is fairly robust. We are now publicising the priorities and encouraging research groups, and those that fund them, to work on the topics listed here.

The next step is to develop a formal strategy to implement the Agenda.

2. The meeting at AEMI, April 2001

The meeting participants were senior state representatives, members of EMA and John Handmer. The meeting was chaired by Dudley McArdle, Director of AEMI.

Recommendations and suggestions relevant to research emerged in three general areas:

1. **Research priorities for the research agenda.** There was agreement on the seven substantive areas set out below. A large number of specific research questions and problems were also identified but time precluded discussion. These are listed in an appendix along with specific questions sent by those who commented on the initial list of research priorities – if not listed elsewhere.

2. **Cross-cutting research issues.** Some issues came up repeatedly in different contexts, although they were not themselves ranked as high research priorities. A number of these which cut across many of the seven substantive areas have been identified. They are set out below in Section 4.
3. **Research promotion.** The meeting spent time identifying ways in which the value of research and relevant research results could be promoted. These are set out in Section 5.

### 3. Research priorities identified at AEMI, April 2001

Seven areas were identified. Time precluded any attempt to rank the areas by importance. However, it was clear from the discussion that the first two areas listed were seen as particularly important. These two areas were also consistently ranked first or second by those who submitted comments in response to the initial options paper. Rankings of issues within each of the areas was undertaken by the AEMI meeting in a few cases only.

**1. Understanding communities.**
Emergency management exists largely to assist communities in the face of hazards. Beyond this simple statement there is however much uncertainty about the idea of “community”, and what form assistance should take and how it might best occur. The situation is becoming more urgent as emergency management becomes increasingly community centred - although not everyone agrees that it is the appropriate focus for emergency management - in the absence of a clear concept of community.

(i) Defining and understanding communities within an emergency management context. Exploring the culture of diverse communities including those that are isolated, rural, defined by ethnicity, an industry etc. What do communities understand to be their own needs? What about communities that reject outside assistance?

(ii) Defining the concepts of risk, sustainability, vulnerability, resilience, security, coping capacity, and community safety – and defining these concepts from a range of stakeholder viewpoints.

(iii) Do we need our own research tools and methodological frameworks?

(iv) There is a need to link with relevant research in other fields, such as that on community well-being, and sustainable and healthy communities.

**2. Emergency management capability.**
Emergency management is evolving rapidly. And there is concern and some confusion over what it should be and do – as well as over what it should or could be doing in the near future. Improved understanding is needed at the conceptual and implementation levels. There is also concern by many who support change that the long established response culture continues to dominate.

(i) What should be the fundamental business model for emergency management – does response dominate inappropriately (eg investment in a fire truck versus other investments in community safety)? Are current models used simply because they always have been? What is needed now is a much more adaptable approach. What is the impact of variations within an agency due to “cultural” differences? What impact does this variation have on capability and well being?
(ii) What is the real impact of changes to training approaches, eg competency based training? Aspects of this include self perceptions and the impact on organisations. There is a clear link to volunteer issues.

(iii) What are the driving forces, and most appropriate models, for successful partnerships? Partnerships here including services working together.

(iv) More appropriate indicators of capability need to be identified.

3. Mitigation
Mitigation is seen as part of core business by most emergency management groups. But there is much debate over almost every dimension of the concept.

(i) Issues of definition, values and marketing. Defining and conceptualising mitigation. How is mitigation seen in the community? Is there potential for “mitigation credits”?

(ii) How much do disasters cost? How much is mitigation worth?

(iii) Making mitigation normal and mainstream – getting it onto the COAG agenda is a very important step. Developing assessment criteria for government funding programs.

Other issues:
Improved decision-making framework for mitigation.
More focus on the private sector.
Improved knowledge of disasters.
Personal versus institutional mitigation.
Managing competing interests (particularly land/environment interests), duty of care, legal liability, compensation.
Conflicts at different levels of community.
How can mitigation become part of post-disaster reconstruction?

4. Information management and modern information technology
Sound information underpins, or should underpin, emergency management. Information here refers to both information needed in an emergency as well as that required for longer term planning. Modern information technology has much to offer, but its value needs to be demonstrated. Immediate challenges are about finding appropriate information, making use of it, disseminating it effectively to all who need or might need it.

(i) Put effort into dissemination of research findings. Adding value to practice through analytical case studies.

(ii) Warning systems – is it always crisis that drives development? How to undertake both product and process evaluation? Are public education/awareness campaigns effective?

(iii) Development of standard approaches to information collection, including the issue of how agencies collect data for other users in emergency management. Tools are also needed for archival incident analysis.

(iv) Local knowledge (developing systems to recognise, value and maintain it).

5. Volunteerism
Australian emergency management depends on volunteers. Yet there was a feeling that we know little about them, that their roles were poorly defined, and that there was probably much that could be learned from other volunteer sectors.

(i) Who are our volunteers? And why do they volunteer?
(ii) What lessons can be learned from other volunteer sectors?
(iii) Where does a volunteer’s role stop and the paid professional’s role start? Are expectations (of government, communities, insurance companies and the volunteer organisations themselves) realistic?
(iv) How do we retain those we want – and how can skills acquisition be organised - is accreditation a disincentive?

Other issues:
Concern over potential litigation by volunteers. How should knowledge and skill be managed? Are volunteers carrying too large an organisational load (admin, quality management, equal opportunity requirements, etc)? Do significant role conflicts exist?

6. Value of the emergency services
This has clear links to the emerging demands of the productivity commission for performance indicators in all areas, and is related to a concern that if the sector is not proactive about this, inappropriate indicators may be imposed from outside. There was a feeling among some that emergency service work was currently undervalued and this had implications for budgets, status and survival.

(i) The funding future of funding for emergency management is unsure. The area faces possible marginalisation or fragmentation. There is a need to prove the worth of emergency management or it is in danger of being unable to fulfil its charter of building resilience, reducing vulnerability and enhancing safety.

(ii) There is also a need to establish the opportunity costs of not providing emergency management in all sectors and for all groups.

(iii) A standard model should be established for this purpose.

7. Economic costs of disasters.
It was acknowledged that much work was underway in Australia on this topic, and that reliable costing was an important part of developing a comprehensive policy on mitigation. However, much more was needed in certain areas. Efforts should be made to ensure that the various research projects are linked in some way.

(i) Further development of a standard framework for this purpose, paying attention to different spatial scales especially local.

(ii) An improved list of indicators is needed, including: damage by sector, loss of local production and contracts, recoverability, costs of restoring infrastructure, local business disruption.

(iii) A standard approach is needed to record damages.
4. Cross cutting issues

A number of issues which cut across most of the seven substantive areas have been identified. These issues came up repeatedly in different contexts, although they did not occupy much discussion time. In three categories, but otherwise in no particular order, they are:

**Concepts and government:**
- coming to grips with the concepts and tasks underlying emergency management – this is seen as important in its own right as well as being an essential pre-requisite for developing performance indicators;
- defining, developing and implementing a “culture of prevention” and/or a “culture of safety”;
- mainstreaming, moving emergency management from the fringe of thinking – whether we are concerned with government, commerce or households – to the centre;
- integrating activity across all aspects of emergency management;
- what is the role of the non-government sector - including the role of commerce, and all informal activity?
- managing the impacts of marketisation;

**Legal and auditing issues:**
- liability and other related legal issues, such as conflicting laws, the absence of uniform legislation, and the increasing propensity to sue;
- performance indicators in every area. There is a desire to work towards evidence based practice and to where possible have indicators or tangible performance measures for internal (eg. monitoring "progress" and resource allocation), and external (eg. Productivity Commission and resource allocation) use;
- showing value for money in all areas;

**Long running divisive problems:**
- ways of identifying and handling uncertainty;
- harnessing the promises of modern information technology;
- being more inclusive by ensuring that programs reach vulnerable or neglected groups.

5. Research promotion

Throughout the consultative process a range of suggestions have been received about improving the awareness of research and relevant research results. These focus on ways of ensuring awareness of the value of research and on ensuring that research addresses needs. It was also felt that the sector needed mechanisms to help it be pro-active about change.
• the development of **research interest groups** or networks to work collaboratively on specialist areas - and to share expertise across states/territories and between researchers and practitioners;
• the conduct of **think tank** meetings to consider the directions and needs of emergency management.
• there may be a need for a “broker” between the end users and their needs and **existing research** results and expertise. Much research is not accessed by those who could benefit from it because it is not part of the professional literature, or because the necessary material is scattered too widely for practitioners to collate.

It was emphasised that good communication – including feedback mechanisms - with the states was essential. Other groups interested in serving the needs of the sector should be included in the Research Initiative’s network, and efforts should be made to develop collaborative linkages with them where appropriate. The Initiative should work to become a focal point for research in emergency management rather than the main operator. To help achieve these ends the Initiative should ensure that it develops a high profile and has a collaborative approach to its work.

### 6. The process of developing the agenda

The draft set of research priorities was drawn up (the “Options paper”) and circulated widely with a request for comments and suggestions. The emphasis was on research priorities that satisfied the following:

• strategic rather than operational;
• national or regional rather than local; and
• cross-sectoral rather than within one sector.

Material received was categorised as being from either practitioners or academics/consultants. This document is concerned with the practitioners’ view. Draft 2, prepared for the AEMI workshop summarises material received from academics/consultants. We intend to hold a research workshop targeting these groups later this year.

How we got to this stage:

1. **Preparation of an options paper** setting out a range of possible strategic research priorities drawn from discussions with stakeholders in Australia, and the November 1999 IDNDR Canberra conference (this is summarised at the end of this document);
2. **Wide circulation of this options paper**;
3. **Ideas and comments were solicited** via mail, fax, phone and email;
4. **Meetings with state/territory representatives and other stakeholders** to discuss research priorities. The options paper formed the starting point of these discussions;
5. **Draft national research priorities** were drawn up at the end of March 2001;
6. A meeting of state/territory/Commonwealth representatives was held to agree to a priority list for wide circulation (at AEMI in early April 2001). Researchers were not part of this meeting, but their written comments on a research agenda formed a resource for the meeting;

Where we are now:

7. Preparation of a revised list of priorities;

Where to next:

8. The list of priorities agreed at the AEMI meeting (and set out here) will be circulated widely for comments before modified as required and adopted as the research priorities for emergency management in Australia (subject to continual updating). We recognise that there will always be many ideas on what should constitute research priorities in the area, and that any list will always be subject to changing circumstances. However, within this reality, much can be achieved;

9. Work to ensure that the top priorities are funded and undertaken by research groups across Australia. The list of priorities will be publicised to ensure that all those with a research interest in the field are aware of them.

We have many responses to the initial paper and ideas from a wide range of government organisations and from research/consulting groups.

7. Priorities in the initial paper circulated for comment

The initial list of priorities drawn up in November 2000, was based on discussions and feedback from a few researchers and policy level practitioners, and on recent Australian literature on the subject including the 1999 Australian disaster conference in Canberra. The list was intended to be a starting point only.

In summary form, the research topics set out in the initial paper “A strategic research agenda for emergency management” were:

1. Emergency management capability: What is it now and what could it consist of? What do emergency services do, and what should they be doing? How do they contribute to community well-being, and to the development of sustainable communities? What sort of arrangements will suit the evolving role(s) of emergency services, for example, will partnerships between organisations become more appropriate?
2. Value: What is the value of emergency services? What sort of performance indicators should be used?
3. Volunteers: How do we best find, motivate, keep and value volunteers? Should emergency management try become more or less dependent on volunteerism?
4. **Understanding communities.** Two elements: conceptualising community safety, vulnerability and resilience; and secondly, issues of community capacity, participation and policy. How should public participation and consultation be undertaken - especially deliberative processes, partnerships and links with commerce? What role should the private sector have?

5. **Information management:** How can an “information culture” be built? How can we ensure that the information needed for risk management is available to those who need it - including those at risk? How can communication networks, both formal and informal, be made more effective?

6. **Risk assessment:** What is needed to help with implementation of the risk assessment process? How to identify and deal with risk “hot spots”? How to cope with the ethical, legal and political considerations of risk assessment?

7. **Uncertainty:** Dealing with uncertainty in risk and emergency management: accepting and communicating uncertainty; and making good strategic and operational decisions with limited information.

8. **Institutional and legal change:** There are at least three distinct aspects of this: making needed changes to emergency management; gaining opportunities from the potential institutional and legal changes ahead, such as privatisation or other changes to the role of government; and the need to clarify legal uncertainty especially where it interferes with information exchange.

9. **Essential services:** Assessing and managing the vulnerability of essential services.

10. **Costs of disasters:** Attempts to capture the true costs of disasters have generally been partial and ignore many important areas of loss. An important issue for the future may be to put in place a framework for ensuring that all the costs of major events are documented.

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**Appendix: The research priorities of researchers and consultants**

Many consultants and academic researchers – defined as not members of government organisations - have yet to respond to our request for suggestions, although many promises have been made. So the notes in this section should be seen as indicative only.

Like practitioners, researchers were concerned about both emergency management capabilities and community issues, but tended to be more specific and varied in their comments.

First priorities in brief were:
• The need to consider the impacts of extreme events affecting an entire region, such as a major earthquake or foot and mouth disease.
• The issue of conflicting laws and the use of local planning powers apparently to facilitate development in known very high hazard areas (the author uses a Queensland example).
• The need to know more about the "public's" risk perception and tolerance.
• How to develop a culture of community safety?
• Emergency management capacity, especially the development of performance indicators and the whole issue of "what should emergency management be doing?"
• Emergency management capacity, especially future strategies and roles within the contexts of community safety and community sustainability.

The second area of priority concerned understanding communities including diversity within communities, risk management of essential services, and volunteerism.

Lower order priorities primarily concerned information management.

**Appendix: specific problems and research issues**

A large number of specific problems and research questions were raised by both those commenting on the initial options paper and by participants at the April AEMI meeting. They are listed here without comment.

• Related to the issue of valuation is the need for tools for effective resource allocation across the many tasks of emergency management.

• Most of those that commented seem to see partnerships as essential - and that these could be with other agencies active in relevant areas as well as with community level groups. This is part of a desire to move emergency management into the mainstream.

• Does global change - economic and environmental - has implications for emergency management? Is Australia ready and capable of handling the sudden development of a serious hazard overseas?

• Understanding communities is also part of answering the question: who is emergency management targeting? It was felt that there is a lack of clarity here;

• Privatisation of emergency management functions is an issue, but the main concern was privatisation or outsourcing of other organisations or functions, and the implications of this for emergency management;

• Legal issues included liability questions surrounding both withholding information and making it public. There was concern that the legislative basis for emergency
management varied across Australia and much could be gained by examining experiences in each jurisdiction with a view to compiling model legislation. A legal issue, which may be a "sleeper" at this stage, is the possibility that "safety" could become a legal right - something that has been canvassed in Europe;

- One official commented that the Emergency Risk Management Guidelines were not very helpful. Another suggested that one problem is the common assumption that the linkages between risk treatment options are linear and that feedback or interactions between options are not ignored. Another issue concerns how to deal with the various sources of uncertainty which emerge during the risk management process;

- Perhaps an interesting research area is to look at how public safety is handled as an activity/objective of government in the different States and at the Local Government level, and to see what model is most effective;

- "Research would be productive, if it moved beyond the 'one big event = emergency' (disaster) mentality and looked at the impact of cumulative emergencies (multiple events at Gisborne schools, Gippsland floods, etc) on individuals and group, and prevention, response and recovery strategies."

- Compile model legislation by examining experiences in each jurisdiction;

- Should "safety" be a legal right?

- Interactions between risk treatment options;

- Identifying and dealing with the sources of uncertainty.

- More effort at quantitative risk modelling is required.