# REPORTS

# Emergency Management Information Development Plan (EMIDP)

*Nicolopoulos, Damcevski, Tomlinson & Lye report on the new Emergency Management Information Development Plan*

For some years the emergency management sector has seen the need to establish consistent and comparable national emergency management information to provide greater cohesion across emergency management data sources. The release of the 2002 Council of Australian Government (COAG) Report *Natural Disasters in Australia: Reforming mitigation, relief and recovery arrangements*, coupled with the increasing emphasis on the development of emergency management plans and policy in relation to counter terrorism, has added to this impetus for greater cohesion across and within jurisdictions.

Beginning in 2004 a series of consultative workshops involving key emergency management stakeholders provided the opportunity to develop a framework to assist with the capture of information needs of the emergency management sector, to identify gaps and key priority areas for action. The end result, the Emergency Management Information Development Plan (EMIDP), a national information framework for improving the information available to support policy, planning and accountability within the Australian emergency management sector.

This paper provides an overview of some key drivers that led to the development of the EMIDP and outlines the priority areas for improving the relevance, coverage, comparability and quality of emergency management information.

## Introduction

Changes to social, economic, environmental landscapes, the current global security environment, and the paradigm shift from response-only emergency management to one that includes mitigation, are placing increasing demands on emergency management stakeholders to improve the availability of relevant and quality emergency management information to facilitate informed discussion and decision making within government and the community.

Quality statistical information is important to effective government. Confidence in official statistics allows debate to focus on what the data have to say, rather than on how they were produced. *One of the things you find in government is that no amount of goodwill is enough, no amount of good policy direction is enough, unless you have accurate information at your disposal. And the use of taxpayer resources to achieve particular goals can be very frustrating if in fact the database on which these policies are based and the objectives pursued are inadequate, or worse inaccurate* (Prime Minister, Hon. John Howard at the launch of the Australia Research Alliance for Children and Youth, July 2002).

The EMIDP, endorsed by the Australian Emergency Management Committee (AEMC) in September 2006, outlines an information framework of agreed priorities and plans for improving relevance, coverage, comparability and quality of information for the emergency management sector over the next three to five years.

The remainder of this paper has been reproduced from the EMIDP released by the Australian Bureau (ABS) of Statistics in October 2006 (ABS cat. no. 1385.0).

## The purpose of the EMIDP

Information Development Plans (IDP) are being developed by the Australian Bureau of Statistics (ABS) in consultation with key users and providers of data across a number of fields of statistics including health, justice, education and training, rural and regional statistics, and children and youth. An IDP represents agreed actions to

improve the availability and quality of data within the broader policy and research context of the demand in a particular field of statistics.

Specific to emergency management, the IDP is designed to reflect the suite of information required to support policy, planning and accountability within the sector. Recognising the diversity of arrangements for the collection and dissemination of emergency management information, the EMIDP:

- identifies key information management issues and data gaps for consideration,
- presents agreed priorities and plans for improving relevance, coverage, comparability and quality of information, and
- identifies responsibilities for individual strands of work, and for monitoring overall progress.

## The Emergency Management Working Group

The EMIDP has been developed by a Working Group (EMIDPWG) of agencies and organisations working within emergency services/management. The EMIDP working Group consists of members from jurisdictional emergencies services agencies, representatives from federal agencies (Emergency Management Australia, Bureau of Meteorology, Australian Bureau of Statistics,

Department of Transport and Regional Services) and peak emergency management bodies such as the Australasian Fire Authorities Council (AFAC).
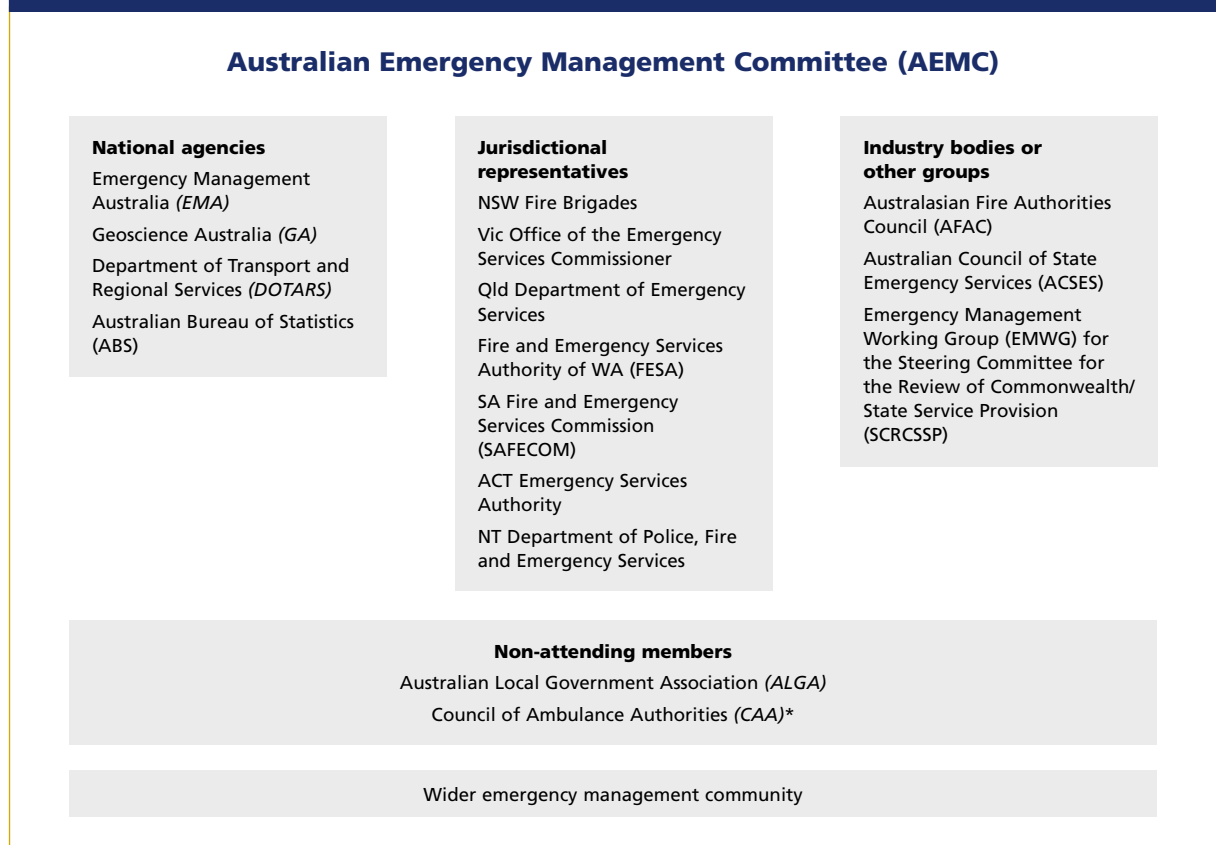
While many of the EMIDPWG members are from traditional emergency service agencies, ownership of the EMIDP resides with the emergency management community. The EMIDP, particularly the accompanying data needs matrix, has been designed with the flexibility to encompass the needs and to benefit the wider sphere of the emergency management community which has a broader range of information needs than that of responding emergency service agencies.

It is envisaged that the membership of the EMIDPWG will change to reflect the priorities of the working group over time including participation of subject matter experts. Since the release of the EMIDP the focus of the working group has moved from one of strategy to implementation and monitoring.

## Scope of Emergency Management

The range of event types addressed by emergency management includes fires, medical transport and emergencies, rescues, other natural events (such as floods, earthquakes, tsunamis, landslides, heatwaves, cyclones and other storms), consequences of acts of terrorism, technological and hazardous material

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**Diagram 1: EMIDP stakeholders to date**

### Australian Emergency Management Committee (AEMC)

**National agencies**

Emergency Management Australia *(EMA)*

Geoscience Australia *(GA)*

Department of Transport and Regional Services *(DOTARS)*

Australian Bureau of Statistics *(ABS)*

**Jurisdictional representatives**

NSW Fire Brigades

Vic Office of the Emergency Services Commissioner

Qld Department of Emergency Services

Fire and Emergency Services Authority of WA (FESA)

SA Fire and Emergency Services Commission (SAFECOM)

ACT Emergency Services Authority

NT Department of Police, Fire and Emergency Services

**Industry bodies or other groups**

Australasian Fire Authorities Council (AFAC)

Australian Council of State Emergency Services (ACSES)

Emergency Management Working Group (EMWG) for the Steering Committee for the Review of Commonwealth/ State Service Provision (SCRCSSP)

**Non-attending members**

Australian Local Government Association *(ALGA)*

Council of Ambulance Authorities *(CAA)*\*

Wider emergency management community

\* The CAA representative is also the Tasmanian jurisdictional representative.

incidents (such as chemical spills, harmful gas leaks, radiological contamination, explosions and spills of petroleum and petroleum products), and the quarantine and control of diseases and biological contaminants (Report on Government Services, 2006, pp 8.1-8.2).

Emergency Management Australia (EMA) defines emergency management as 'a range of measures to manage risks to communities and the environment' (EMA 2003). Emergency management has been considered to be a broad concept encompassing the four elements of Prevention (mitigation), Preparedness, Response and Recovery (PPRR) in relation to such emergencies.

State and Territory governments and local governments provide emergency management services to the community through a range of emergency service organisations. The objectives of emergency service organisations are to provide highly effective, efficient and accessible services that:

- reduce the adverse effects of emergencies and disasters on the Australian community;
- contribute to the management of risks to the Australian community; and
- enhance public safety (Report on Government Services, 2006, p 8.10)

The events that are attended by emergency services tend to be frequently occurring, smaller scale incidents. However, emergency services also attend the larger scale emergencies.

It should be noted that the same objectives of emergency service agencies are also held by many other agencies within the broader emergency management community and that therefore their information needs may be similar.

The term 'emergency management' has been employed in this paper as a general term intended to include emergency services. The term 'emergency' is intended to include emergencies, events and incidents; and discussion of emergency management information includes reference to both emergency management and emergency services information.

## The key drivers of the EMIDP

A number of drivers led to the development of the EMIDP. These included:

### (a) Better information for better decision making

The global security environment, climate change and global warming, the rising complexity of hazards, changes in regional and coastal population, land use and hazard levels and a greater emphasis on community safety, is placing increasing demands on emergency management stakeholders for relevant, accessible and quality information to support evidence based planning and decision-making, in turn delivering more responsive and cost effective services to businesses and the community.

Emergency management stakeholders need information to provide them with an understanding of the emergency management problem and policy options including:

- risk of damage arising from particular types of emergencies,
- possible costs to the community and to the Government, and
- options for investment in reducing risk/damage.

The availability of comprehensive data on the full costs of emergencies and emergency risk management services will enable governments and communities to identify the most cost effective mix of risk based emergency management investment in Prevention, Preparedness, Response and Recovery (PPRR) interventions across all hazards. At present, collating all the available data necessary to identify the total costs of emergency risk management within a community is extremely difficult and beyond the capacity of most researchers. Some of the key data required is currently not collected or not accessed by emergency services at all. Case studies tend to focus on one disaster or type of emergency rather than allow an 'all hazards' view of the cost benefit of emergency risk management investment.

Changes to social, economic and environmental landscapes also mean that emergency managers must provide frontline operations with relevant, timely and quality information to ensure occupational health and safety (OH&S) and to enable them to manage operations efficiently and effectively. Duty of care and OH&S obligations are also in part driving the need the interoperability of systems, especially during emergencies.

### (b) Significant reports

There have been a number of significant reports and findings recommending a more unified and comprehensive approach to emergency management and reducing risks. Central to the new approach is a systematic and widespread national process of disaster risk assessments and, most importantly, a fundamental shift in focus towards cost-effective, evidence-based disaster mitigation.

Some of these reports include:

- The COAG Report *Natural Disasters in Australia*, in particular, Reform Commitments 1 and 2 from this report which respectively state: "develop and implement a five-year national programme of systematic and rigorous disaster risk assessments" and "establish a nationally consistent system of data

collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation" (COAG, 2002, p 14). While the report's focus was on natural disasters, with an emphasis on mitigation, the EMIDP is, in part, a response to that commitment, applying however, the wider all-agencies, all-hazards approach;

- The *Report of the ANZLIC Counter Terrorism Project* (or Conybeare Report) (2003),
- The COAG Report *National Inquiry on Bushfire Mitigation and Management* (2002),
- The Parliamentary report *A Nation Charred* (2003),
- OECD's Report *Emerging Risks in the 21st Century: An Agenda for Action* (2003),
- Management Advisory Committee Report *Connecting Government: Whole of government responses to Australia's challenges* (2004), and
- Catastrophic Disasters Working Group Recommendations.

### (c) Improved governance and coordination of information management

The increased level of activity within emergency management has generated an increased level of planning and investment to improve the availability and quality of information needed for cost-effective emergency management. This has led to multiple fragmented and parallel projects with overlapping priorities and an increased potential for duplication.

There are currently a number of other cross-jurisdictional departmental data management processes underway within the emergency management sector. Some of these processes include:

- Disaster Mitigation Program (DMAP),
- Steering Committee for the Review of Government Service Provision,
- National Information Management Advisory Group (NIMAG),
- The Australian and New Zealand Land Information Council Emergency Management/Counter Terrorism (ANZLIC EM/CT) Working Group,
- Critical Infrastructure Protection (CIP), and
- National Spatial Information for National Security (NSINS).

The aim of the EMIDP has been to complement these processes. The overlaps that occur between the EMIDP and other processes are in the nature of identifying data needs and assigning a priority to these needs, whether it be a format for data (e.g. spatial) or in the identification of consistent and comparable performance indicators across jurisdictions. The EMIDP assists in providing details on the need and its priority to an existing group, agency or organisation which is already responsible for this area of work within the emergency management sector.

### (d) Changing models and approaches to managing emergencies

The move from response-only emergency management to one that includes mitigation represents a paradigm shift in Australia. The increasing interaction between 'natural' and 'human-caused' events, as well as the regular occurrence of disasters in recent times, and the focus on their cost, both socially and economically, have brought about changes in the way in which emergency events need to be considered. It has been recognised that emergency management is a 'whole-of-government' issue, encompassing Federal, State and Local Government agencies, and including industry and the community. This approach to emergency management is driving the need for integration of many data bases and their interfacing in multiple contexts to support 'whole–of–government' approaches to service delivery and inter-agency interoperability.

Emergency management agencies recognise that they need to spend more effort on prevention and mitigation, that is, emergency risk management, coupled with the need to adopt a community centred approach. Research into the effects of disasters on communities has highlighted significant gaps in knowledge on what is really meant by 'community safety'. Further research could contribute to enhanced knowledge and mutual understanding of constructs such as community centred and community safety.

## Governance

The EMIDP was endorsed by the Australian Emergency Management Committee (AEMC) in September 2006. At that meeting, AEMC tasked the National Information Management Advisory Group (NIMAG) with monitoring implementation and regular reporting on progress.

Since the release of the EMIDP in October 2006, a number of emergency service organisations have submitted applications seeking funding from DOTARS' Natural Disaster Mitigation Program to progress individual strands of work within the IDP. The proposals that have been prepared to progress the EMIDP have the intent and potential to result in nationally (and regionally) consistent standards for data capture and information requirements.

The development of the EMIDP has identified the need for the emergency management sector to formalize a regular funding stream for information projects of national significance. Formalising funding will also improve the governance and monitoring of progress of the information initiatives.

# Key priority areas

A data needs matrix was developed to assist in identifying the priority information areas of work for the emergency management sector. The Matrix is a complex data needs analysis of the emergency management sector which underpins the EMIDP. For each of the five domains of emergency management (Risk Assessment, Risk Reduction, Readiness, Response, and Recovery), the matrix provides information on the characteristics of the data needs and development requirements. It contains information on existing data and data gaps and their data characteristics, cross-classified by the environmental characteristics, the hazard or risk types and the business processes that constitute the different organisational and operational procedures within the service agencies.

While not in official use, the '5R' framework has been used in the EMIDP and the matrix as it specifically examines risk through the analysis and synthesis of baseline data on communities, the built and natural environments and the economy, as well as the service operational business processes, to measure exposure and vulnerability.

Six broad categories were identified as priority areas of information gaps within emergency management. The listed priority areas are:

• Overarching costs: social, economic and environmental,

• Theoretical issues: methodologies, tools, standards, definitions, systems,

• Agency/industry issues: return on investment, risk based resource allocation and performance management, prevention/mitigation versus response and recovery,

• Community issues; volunteers, community networks,

• Specific hazards, and

• Emerging issues: water and climate change.

These priorities reflect cross-jurisdictional needs, gaps, deficiencies with existing data and the need for improved coverage, comparability, access to, and quality of, emergency management statistics.

While these priorities may initially reflect the needs of the more traditional emergency services agencies involved on the Working Group, many of these priorities have a broad scope (e.g. the theoretical issues) and have the potential to be of interest and use to many of the wider emergency management community. However, the data needs matrix has been designed to include the information needs and potential development work of the wider emergency management community and will be circulated widely and updated regularly to reflect these changing needs. It is hoped that the next iteration of the EMIDP will contain additional priorities raised by the wider emergency management community.

Table 1 provides a summary from the EMIDP of the identified outcomes sought and user context for each of the six priority areas.

| Table 1: Key information priority areas, outcomes sought and user context | | | |
|---|---|---|---|
| **Priority Headline – Overarching costs: social, economic and environmental** | | | |
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| Understanding the full impact of costs (economic, social and environmental) of emergencies | The provision of detailed cost/benefit data to support informed decision-making and enable the most efficient distribution of emergency management resources between mitigation and response activities. These data will provide a fuller understanding of the impact of all costs associated with emergency management and allow more effective targeting of service delivery leading to safer communities. New data standards would be created for the emergency management sector. | Recent COAG reviews (including Natural Disasters Reform Commitment 2) have highlighted the need for more comprehensive data on the full costs of emergencies and emergency risk management services to enable governments and communities to identify the most cost effective mix of risk based emergency management investment in PPRR interventions across all hazards. At present, collating all the available data necessary to identify the total costs of emergency risk management within a community is extremely difficult and beyond the capacity of most researchers. Some of the key data required is currently not collected or not accessed by emergency services at all. Case studies tend to focus on one disaster or type of emergency rather than allow an 'all hazards' view of the cost benefit of emergency risk management investment. | To understand more about the full costs of emergencies to enable the most efficient distribution of emergency management resources between mitigation and response activities as well as providing models for effective recovery management. |

| Priority Headline – Theoretical issues: methodologies, tools, standards, definitions, systems | | | |
|---|---|---|---|
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| Assessing the impact of emergencies on the community | A common framework for assessing the impact of emergencies on communities, including standards and definitions, to ensure consistent and comparable data. Ensuring consistency and comparability across jurisdictions, agencies and other organisations involved in emergency management will provide a better rationale or basis for requests for support before, during and after emergencies. A consistent set of national data and indicators to assess community recovery from emergencies to provide better recovery outcomes. | Strong needs were identified by COAG in both policy and data areas, particularly in the recommendations from the 2002 Natural Disasters in Australia Report regarding the need for nationally consistent data collection research and analysis (Reform Commitment 2). There is a need to develop a consistent set of national data and indicators to improve understanding of the contribution of social and community networks before, during and after emergencies. At present, variable approaches are used across and within national agencies, state/territory jurisdictions, local councils, insurance agencies and other organisations regarding the comprehensive quantification of the impact of emergencies. A framework is needed to improve data consistency before and during emergencies and for the short, medium and long term after emergencies.<br><br>There are currently inconsistencies in information available on post-emergency recovery support programs and community outcomes. There is a need to quantify the demand for services by consistent definitions of type, duration cost and provider; a need to choose between models of service delivery; a need to report on coordinated case management approaches and to assess the success of support services, including counselling. | To have a common framework for emergency impact assessment on communities. This would include standards and definitions to ensure consistent and comparable national data and to provide better recovery outcomes. |
| Priority Headline – Agency/industry issues: return on investment, risk based resource allocation and performance management, prevention/mitigation versus response and recovery | | | |
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| Better models and tools to allocate investment across PPRR | There is a need for a methodology for assessing resource needs and priorities within emergency management, tools to facilitate emergency management policy exploration and decision support, options for performance management and productivity and a framework for evaluating the effectiveness of emergency service investment to optimise community risk treatment. These improved models and tools would lower the economic, financial and social costs of emergencies through more cost-effective emergency management service delivery. | The current level of research in developing models and tools to optimise resource allocation across the emergency management spectrum (PPRR) to improve community safety is inadequate and uncoordinated. COAG's Natural Disasters' Reform Commitment 2 requires the 'establishment of a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation'. This priority project will contribute to this reform commitment and will provide information to agencies on the most effective way of allocating investment across the PPRR spectrum to increase community safety and reduce the costs and social effects of emergencies and disasters. | To have a methodology for assessing resource needs and priorities within emergency management, tools to facilitate emergency management policy exploration and decision support, and a framework for evaluating the effectiveness of emergency service investment to optimise community risk treatment. |

| Priority Headline – Community issues: volunteers, community networks | | | |
|---|---|---|---|
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| Volunteers in the community | Quantification of the contribution of volunteers to national emergency services to enable a better basis for management of volunteers within the sector. This would provide a rationale for community building by providing appropriate support for volunteers within the community. | No consolidated national data exists to assess the profile and contribution of emergency services volunteers or the impact of structural change and other socio-economic factors. There is therefore a need for information on emergency services volunteers to understand the contribution of volunteers within emergency management for effective performance measurement and data interpretation. Better data is also needed to improve the management of volunteers and their work within the community. | Quantification of the contribution of volunteers to national emergency services. |

| Priority Headline – Specific hazards | | | |
|---|---|---|---|
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| Information on specific hazards | Better understanding of the risks and vulnerabilities of Australian communities to specific hazards such as cyclones, storm tides/storm surges, severe winds and floods. This better understanding would inform and enhance the emergency management response and recovery systems in Australia to these disasters and lead to a better basis for preparation, mitigation and recovery. It will also help inform the process of addressing COAG Reform Commitment 1. | Understanding of, and information on, the risk reduction, readiness and response to specific hazards could serve to reduce the impact of these hazards and reduce recovery time and costs. There is also a need for more information on multi-agency events and how these are coordinated by emergency service agencies. | To have data to fill information gaps to better understand specific hazards such as cyclones, storm tides/storm surges, severe winds and floods. |

| Priority Headline – Emerging issues: water and climate change | | | |
|---|---|---|---|
| **Priority area** | **Outcomes sought** | **User context** | **Three year target** |
| A greater understanding of the influence of our environment on the management of emergencies | Broader, evidence-based knowledge on the influence of environmental factors on the probability, frequency and consequence of natural hazard events are needed. In particular, a better understanding of: Water Resources: The availability of water for emergency management planning is essential to reducing hazards and responding to emergencies; and Climate Change: The impact of environmental changes on emergency management is essential to planning for preparedness, in Australia and throughout the Asia-Pacific region. The emergency management sector needs to contribute to an informed debate on options for Australia associated with climate change. | Water is a scarce resource, but also a key component of Australia's emergency management capacity. No national data exists for the impact of emergency services on water supply and quality (e.g. volume of water used, including overuse, extent the water table is contaminated by run-off, re-use, grey water, etc). Global and local forces are changing the environment with effects including global warming, increase/decrease in rain and more extreme weather events. Investigation of our 'Greenhouse vulnerability' has produced computer models and data, but there needs to be better application of research data to the emergency management sector (planning, mitigation, etc.). | The emergency management sector to: (a) influence the debate in Australia on environmental change; and (b) understand more about water supply, use, reuse and quality and to influence debate in this area as well. |

## Conclusion

The EMIDP process has been successful in raising awareness of the importance of information for the emergency management sector, and in identifying agreed priorities and plans for improving relevance, coverage, comparability and quality of information to support policy, planning and accountability within the emergency management sector.

With a number of parallel information projects and cross-jurisdictional departmental data management processes underway within the emergency management sector, the EMIDP provides a framework for improved governance, transparency and coordination supporting both the development and use of information for the emergency management sector in Australia.

The EMIDP will facilitate informed decision making within government and the community to better meet the needs of the community by improving the availability of relevant, high quality emergency information for the sector.

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Jill and Peter performed the roles of Secretariat and Chair respectively in the development and endorsement of the Emergency Management Information Development Plan.

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