

# Improving our capability to better plan for, respond to, and recover from severe-to-catastrophic level disasters

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## Introduction

Catastrophic disasters present a substantial challenge for governments and emergency managers. Better understanding of the 'problems' they present before attempting to improve our ability to mitigate their consequences is critical. To address this, Emergency Management Australia held a Thought Leadership Workshop. The workshop provided a high level, initial assessment of gaps identified in our national approach to manage severe-to-catastrophic events, and to alert key decision-makers to the issues. The workshop investigated strategies and opportunities to improve Australia's capacity to better plan, respond to, and recover from severe-to-catastrophic disasters. This included whether arrangements for catastrophic should be progressed, the key issues that need to be considered, and how we might move this issue forward. The workshop is an important step in understanding how Australia might improve its ability to deal with the consequences of events with a severity beyond our existing individual knowledge, skills, experience, imagination and, collectively, beyond our existing resources, practices and preparations.

## Overview

Two of the most detailed, recent and relevant reviews of international catastrophic disaster effectiveness have taken place in the United States following the 9/11 terrorist attacks and *Hurricane Katrina*. The 9/11 analysis has been characterised as a 'failure of imagination', and the *Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*<sup>1</sup> was billed as 'a failure of initiative'. Its Preface states:

'Government failed because it did not learn from past experiences, or because lessons thought to be learned were somehow not implemented. If 9/11 was a failure of imagination, then Katrina was a failure of initiative. It was a failure of leadership.'

Key characteristics of the 9/11 event that inform our thinking about catastrophic events are those where simply applying more of the same is either not possible, not enough, may make little impact or wholly unavailable; more people, more vehicles, more information, and more command and control is *not* more effective. The usual 'requests for assistance' are no longer of benefit. In fact, more of the same may well be counter-productive to actual needs. Success in these events will be characterised by more effectively dealing with high degrees of complexity; understanding and managing new, competing and rapidly-emerging priorities and overcoming unanticipated blockages.

Catastrophic events demand new thinking and approaches to meet the needs of affected communities and the expectations of a watching world. They will be events where the trust and confidence vested in us by communities will be rigorously tested and intensely monitored. Success requires leadership, imagination, creativity, innovation, initiative and compassion before, during and after these inevitable events. Delivering a practical and productive outcome requires honesty and humility in our assessments of capability; in our determination of what is possible; and in our community engagement as we collectively determine how to best deal with adversity.

While it is important that Australian governments continue to invest in enhancing operational capability and capacity in emergency and disaster management, it is also vital that more effort be directed toward how we deal – as a nation – with catastrophic events. When capacity is overwhelmed, when systems and processes become ineffective, as is likely in a catastrophic event, the solution relies on leadership capability and initiative – through collective imagination – to heighten awareness and enact creativity and innovation.

Australia should enhance its leadership capacity, foster all means for innovation, create the frameworks and culture to nurture that thinking, and support subsequent initiatives that improve capability to plan, respond and recover from severe-to-catastrophic disasters. Building Australia's disaster resilience is not only the *responsibility* of governments and emergency managers, but the responsibility of each member of the community. It is vital to remember this collective responsibility when an inevitable inquiry to a future

<sup>1</sup> *Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*. At: [www.uscg.mil/history/katrina/docs/USHouseOfRepKatrina2006MainR1eport.pdf](http://www.uscg.mil/history/katrina/docs/USHouseOfRepKatrina2006MainR1eport.pdf).

catastrophic event concludes so that Australia is not found wanting through a failure of leadership, imagination or initiative!

## General observations from workshop participants

### Defining 'catastrophic'

Workshop participants identified that significant confusion and subjectivity surround the term 'catastrophic'. Many definitions and measurement criteria are used across the emergency management (EM) sector to suit needs and responsibilities. What may be catastrophic for one community may not be for others. Measures to define the term 'catastrophic' should not only be about death toll or the cost of damage, but should capture the impact on the affected community.

### Leadership

Agencies spend significant time, energy and resources preparing, responding and recovering from low-to-medium impact events. Rarely do they invest sufficient time in preparing for a severe-to-catastrophic event that appears to be improbable. This history of performance falsely suggests that success will be achieved by scaling up current arrangements.

Progressing our capacity to better prepare, respond to, and recover from severe-to-catastrophic disasters is about initiative, imagination, creativity and innovation, as well as developing frameworks and practices for support, collaboration and co-ordination. Improving resilience is *not* about increasing operational capability, but about developing leadership that recognises and delivers on this change of narrative to meet unimaginable challenges. Initiatives to improve capability must extend beyond current plans and thinking. It should engage all levels of government and be grounded in reality. We must highlight the need and responsibility to *explicitly* acknowledge and *address* improvements in capability. We must learn from previous failures to progress. Emergency managers, correctly, seek to exert control over the impacted environment. However, catastrophic disasters remove us from the comfort of what we know, control and are able to surely communicate, shifting the narrative to the uncontrollable. This is often an anathema to emergency managers and requires strong leadership to overcome. Catastrophic disaster recovery may benefit from an enhanced command-and-control approach. However, the complex multidimensional environment requires leadership to navigate the high levels of agency co-ordination required for a response.

### Education

Most leaders will only experience one truly catastrophic event in their career. Therefore, they will not have any experiential benefit to assist them with their decisions and responsibilities. While previous experience is important, what might be applicable at the lower end of

the disaster scale does not automatically translate to severe-to-catastrophic disasters. The rules change.

Therefore, the challenge is how we can train and educate leaders *and* create applicable 'experiences' for them to draw from. Many educational institutions address elements of catastrophic disasters, yet none proffer a holistic program to manage catastrophic events.

### Governance

While current systems, plans and approaches have evolved to meet the requirements of frequent return-period events, they insufficiently meet the more complex, flexible, and dynamic processes necessary to address severe-to-catastrophic disasters. Therefore, plans must address not only what is likely, but also what is possible, and should address what to do when the plan fails or is inadequate. They also need to anticipate with greater clarity how a community might respond to disasters.

Creating a structural connection to the Australia–New Zealand Emergency Management Committee and its national resilience agenda is important to improve capacity and capability. This relationship enables emergency managers to better manage severe-to-catastrophic disasters, as it provides a framework for accountability and governance across any agreed initiatives.

### Consequence management

Catastrophic disasters are typically defined as 'least likely' to occur but have the highest consequences. Least likely implies *not* needing to spend too much time thinking about the problem. Most consequential, however, implies the opposite. The cost of completely mitigating consequences of catastrophic events is generally unacceptable. Therefore, when a risk management process is applied to any given community where a severe-to-catastrophic risk is identified, we should commit more time and effort in trying to understand how to manage the consequences; keeping in mind that we have only mitigated at a lower end of the scale where results are more affordable and achievable.

Consequence management differs from other elements of disaster management as an event's impact is accepted as certain. The focus is to ensure that response and recovery efforts not only deliver positive outcomes but that action – or inaction – does not exacerbate adverse consequences.

Workshop delegates generally felt that 'structured consequence management' was a poorly-understood concept in Australia, although extremely relevant to catastrophic disaster management. Leadership must conceptually foster and exercise decision-making far more often than currently occurs. Consequence management is based on the well-established EM principles of prevention, preparedness, response and recovery. Consequence management is the framework for managing the residual risk of any

potential hazard, including measures to protect public health and safety and restoration of essential services. It also provides emergency relief to governments, businesses and individuals affected by consequences of a natural or human-caused hazard. Initiatives must positively 'close the gap of surprise' that all too often occurs during large and complex disaster events. To some extent this is driven by the limitations of enacting a risk management *only* approach to planning and preparation. Being ready for catastrophic disasters is about both risk management *and* consequence management.

The U.S.A's experience has raised practical concerns in relation to the distinctions between separate functions of crisis and consequence management. Evidence exists that these concerns have created artificial barriers, inefficiency, confusion and inertia in responding to events. Changes have seen a consolidation of the previously separate functions into a single approach. Drawing on the experience of others, Australian work in risk management (i.e. via *National Emergency Risk Assessment Guidelines*) must be connected to any work proposed in consequence management. Communities must accept that they cannot adequately avoid, treat or transfer risks. Catastrophic events *will* happen, and those accountable *must* be ready to address the consequences. True consequence management is not just an EM function, it is also a function of leadership, overlapping the usual EM plans, arrangements, responsibilities and even borders. Consequence management must be sufficiently flexible and robust to operate when 'business as usual' is not sufficient, and when the 'rules of the game' have fundamentally changed. Planning and arrangements must account for this need. Operational agencies – police, fire and emergency services – interpret consequence management as their responsibility. However, the medium to long term challenges associated with catastrophic events recovery go well beyond agency responsibilities.

To effectively manage the consequences of a catastrophic event, no matter its cause, it is essential that input and resources from operational, policy and service agencies is provided. It may also require co-ordination with humanitarian, not-for-profit and private sector organisations, and even foreign entities.

### Resource management

Agencies and governments tend to be subjective about their capacity and capability. Overly optimistic views of ability to manage severe-to-catastrophic events (based on performance during less intense events) become dangerous assumptions. While states and territories are aware of their emergency services capability profiles, there is little understanding of the 'national picture' those capabilities add up to. Knowing what each jurisdiction *has* does not constitute national capability. It only becomes 'national' when it can be released and used outside a home jurisdiction. In addition, knowing what capabilities exist does not necessarily translate into an understanding of inherent limitations in the face of a severe-to-catastrophic event.

Without understanding limitation, an organisation cannot innovatively surpass that limitation. The result? A significant gap between the efficacy of capability and the expectation of those receiving its benefit.

Identifying national capability also requires some level of operational governance to manage and oversee that capability. Rather than saddle this duty onto the Commonwealth from the outset, it should be viewed as a role for the emergency services collectively that *may* or *may not* involve the Commonwealth.

### Communication

While there is a legitimate concern to not unnecessarily alarm the public, we do need to be honest with stakeholders about the potential consequences major events can have on respective communities. There are clear political and operational communication risks in exploring uncertainties of the unknown (or at least the difficult to define unknowns) but that is precisely the task and expectation generating this initiative.

A number of additional entities must be directly involved in the new narrative. Non-government organisations (NGOs), not-for-profits, scientific agencies and private sector organisations must be directly involved in the new narrative. It is critical that we strengthen engagement between external agencies and the EM sector, and that we genuinely explore limitations and opportunities of capacity and capability as a national asset.

Narrative is a powerful tool in establishing and maintaining the trust and confidence of affected communities; imparting critical information, leading and guiding the actions of those in the path of disasters. Leaders must articulate a clear, honest, open and beneficial narrative to communities.

### Intelligence

Situational awareness remains problematic for most severe-to-catastrophic disasters. Technological advances are progressing rapidly but are yet to be consistently mainstreamed into disaster operations. Advanced modelling of fire behaviour and weather effects has improved significantly over recent years. The outcomes of this modelling could be used to forecast impact and more effectively direct resources than in the past. Rapid impact assessment is increasingly important for response and recovery intelligence. While some jurisdictions are progressing well, they would benefit from a more unified and consistent approach. National situational awareness of incidents has progressed with the development of the National Situational Awareness Tool. Further development of this tool would add value to strategic decisions regarding national resource deployments.

## Key insights

### Leadership

**Improve adaptive, creative and innovative thinking in senior leadership.** Severe-to-catastrophic disasters present complex challenges that require different responses to more routine operations. Up-skilling leaders to think more contingently about problems and solutions is critical in improving leadership capability.

Help leaders to 'imagine the unimaginable' and act accordingly. Failed operational outcomes can nearly always be traced back, at least in part, to a failure of imagination and initiative. Seen in hindsight, those missed opportunities *could have been* envisaged beforehand had leaders invested time and effort to trust in an imaginative approach and mustered the courage to act accordingly.

**Encourage greater integration of operational and non-operational leaders.** Long periods between severe-to-catastrophic disasters, a transient workplace, or both, tend to allow unnecessary division to flourish between policy-makers and operational leaders. This produces policies that are too altruistic and 'perfection oriented', and hampers operational effectiveness. Bringing together senior operational leaders and policymakers inherently fosters 'collective wisdom' about the 'problems' and 'solutions' *prior* to an event and can further aid in the management of severe-to-catastrophic events.

**Assess whether the command, control and co-ordination (3C) model of leadership adequately supports and enhances consequence management in a disaster.** The threshold between response and recovery is usually blurred. Arguably, they both commence simultaneously, albeit a response initially takes precedence over recovery until the incident ground is rendered 'safe' for recovery to take precedence.

Exploring the benefits and constraints of 3C leadership across response and recovery will identify beneficial attributes to both. It will also identify other attributes that may be absent but critical in ensuring a holistic management of consequences of these disasters.

**Explore the notion of ethics in leadership and how it fosters public trust and confidence.** Ethics in leadership is critical to secure public trust and confidence throughout adversity especially in acknowledging the inherent limitations (due to the nature, size and complexity) when confronting the consequences of severe-to-catastrophic disasters. Establishing and maintaining trust and confidence must be better understood and enshrined into leadership thinking and behaviour.

**Explore the idea of leadership communication.** This is how leaders develop skills to narrate a tragically unfolding story and inspire trust and confidence in helping communities survive and recover from them. Critical to the success of any disaster outcome is the capacity for a leader to 'connect' with their community

and inspire them to undertake individual and collective actions to benefit them in the short and longer terms. The narrative that a leader forms before, during and after an event is critical to achieve this outcome and cannot be overstated in its importance.

### Education

**Target education and training for severe-to-catastrophic level of disasters** (e.g. leadership, governance, planning, analysis, policy, communication and intelligence). A greater provision of education and training to specifically address challenges created by severe-to-catastrophic disasters must be enacted. The Australian Emergency Management Institute transition from Mt Macedon in Victoria to Canberra presents opportunities to establish a new education and professional development agenda that addresses many key areas of capability.

**Better understand how science can support capability and capacity improvement for severe-to-catastrophic disasters.** Research from the former Bushfire CRC and the current research agenda for the Bushfire and Natural Hazards CRC need to be properly articulated into educational institutions across the nation. Long-term strategy and supporting governance must take account for this knowledge transfer, and educational and training pathways should absorb the research into their doctrinal base.

**Develop initiatives to improve capability that are grounded in reality, but extend beyond current plans and current thinking.** Based on work in the U.S.A. it would be sensible to look at the disaster history of a given community (long term); understand what science is saying about these disasters in terms of future frequency and intensity; identify the current land use of that community; bring together the history, science and land-use and paint a picture of current potential (the 'scenario'); expedite current policies and operational doctrine and test them against the 'scenario'; apply imagination to identify where gaps in capability might exist; and develop mechanisms to action those initiatives.

### Governance

**Improve frameworks that establish co-ordination with the humanitarian and NGO sectors.** Ties to the humanitarian and NGO sectors are well established in Australia, but a review of extant relationships – regarding potentiality of severe-to-catastrophic disasters and ensuring foreseeable gaps are appropriately addressed – could strengthen them.

**Improve planning frameworks to develop strategies and plans for both the most likely and the most dangerous.** Planning frameworks – local through to state and up to national level plans – should properly consider not only disasters considered most likely, but also those disasters most consequential. Though a return period for a catastrophic level disaster within a known hazard profile may be long (even up to 500 years and beyond), it is still sensible to envisage such

events and properly plan for them. Failure to improve will lead to a significant capability gap. What could have otherwise been reduced will now be apparent had planners, policy makers and operational leaders considered and worked through key challenges that such events pose.

**Extend operational planning frameworks to identify and use private sector capability and capacity.** It is widely recognised that the private sector has much to offer in consequence management, however the contributions to date remain largely superficial. Enhancing operational planning to incorporate private sector capability will require agencies to think much more contingently about how to usefully deploy such capability. Courage to 'let go' of perceived controls that tend to exclude private sector participation will be imperative.

**Work to define capacity and capability and make limitations explicit.** Without understanding capability limitations, agencies cannot adequately apply the required imagination and innovation to improve performance and severe-to-catastrophic event outcomes. It is only by comprehending limitations that an organisation or community can evolve to move beyond them. In addition, any notion of limitless capability establishes a false expectation from those who are the beneficiaries of its application, resulting in an expectation much higher than feasible. The result? Disappointment, a loss of trust and confidence, and missed opportunities for innovative solutions ensues.

### Resource management

**Review the manner in which operational resources are deployed during severe-to-catastrophic events to maximise their effectiveness.** Deploying resources in a traditional manner during severe-to-catastrophic events quickly exposes limitations. However, by contingently thinking about how those resources could be better used in the protection of life, property and the environment in circumstances *prior to* the event leads to a more efficient utilisation of those resources.

**Ensure that the nation's fire and emergency services capabilities are appropriately optimised.** This can be achieved by addressing, over time, an understanding of 'national capability' across fire and emergency services. How can those capabilities be best used during times of nationally significant disaster events? What capabilities are needed in the future to further improve the effectiveness of fire and emergency services during times of nationally significant disaster events? This work is already underway between the Attorney-General's Department and the Australasian Fire Authorities Council.

### Communication

**Develop opportunities to be open and honest about severe-to-catastrophic event potential and our collective limitation in dealing with them.** Enlightening communities to a hazard's full potential, along with the limitations that all resources experience when combating them, greatly assists communities to set realistic expectations. This includes what is likely to happen (the intensity of the event), what can be

reasonably done about it (the extent and limitation of capability), and what effects are likely to occur (the extent of the consequences). Reducing the gap between expectations and eventualities contributes to minimising trauma and disappointment and assists in upholding public confidence.

**Broaden the stakeholder group to test assumptions about a community's capacity and capability to withstand consequences of severe-to-catastrophic disasters.** Once a community fully appreciates the potential of a severe-to-catastrophic event, it is important for that community to make decisions about how they will deal with the consequences.

### Intelligence

**Improve intelligence capability across the EM sector.** This is done by establishing and maintaining links between the Commonwealth and states and territories and developing products and services of mutual benefit and accessibility. Significant technological advances are being made in systems, processes and datasets across all levels of government, as well as the private and NGO sectors. Communities must be aware of the potential hazards that exist in their region and every avenue to ensure this awareness must be explored. Emergency managers *should be* able to mitigate as many risks as is reasonably possible (potential consequences), and properly plan for residual risks (resulting consequences) where mitigation is inadequate.

### The way forward

The difficulty for decision-makers is that management of major disasters is a latent and relatively low frequency issue. Keeping their threat at the forefront of thinking when there are higher frequency events and pressing issues vying for time is problematic ... until something occurs 'on your watch'. The real risk lies in a failure to envision, and then address, the consequence management issues flowing on from severe-to-catastrophic events, inevitable yet unpredictable in their arrival though they are.

The way forward must establish a national dialogue on how to best progress the development of our thinking and capability. Our objective must be to serve the community well, and avoid findings by inquiry that policy makers and practitioners lacked either imagination, initiative or both.

Insight gleaned from this workshop will refine the thinking that surrounds severe-to-catastrophic event response and will prompt leaders, decision makers and practitioners to continue developing initiatives to improve our collective mitigation.