Alternative Commonwealth Capabilities for Crisis Response 2023

ENGINEERS
AUSTRALIA

Contents

Alternative Commonwealth Capabilities for Crisis Response

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About Engineers Australia

Engineers Australia is the peak body of the engineering profession representing the collective voice of over 115,000 individual members. Constituted by Royal Charter, our mission is to advance the science and practice of engineering for the benefit of the community.

Engineers and engineering are indispensable contributors to Australian prosperity and lifestyles. Engineering services are embodied in almost every good or service consumed, used or traded by Australians, now and in the future. Engineers are the enablers of productivity growth because they convert "brilliant ideas" into new commercial products, processes and services. Engineers also ensure society gets the most out of existing facilities by optimising their operations and maintenance.

As Australia's signatory to the International Engineering Alliance, Engineers Australia maintains national professional standards benchmarked against international norms. This includes accreditation of undergraduate university engineering programs.

Under the Migration Regulations 1994, Engineers Australia is the designated assessing authority to assess potential migrant engineering professionals' skills, qualifications, and work experience to ensure they meet the occupational standards needed for employment in Australia.

Engineers are passionate participants in public discourse, contributing to meaningful community and policy discussions that impact the economy and society. Engineers Australia formulates its policy positions through engagement with members and non-member engineers, industry, educators, government officials, and other experts across Australia and internationally. By synthesising these diverse perspectives, we develop evidence-based policy aligned with the highest professional standards.

Engineers Australia is a strong supporter of developing new industries that can grow the workforce, increase trade, strengthen domestic fuel security, reduce emissions, and build resilience to climate change and extreme weather events.

We welcome the opportunity to provide input as part of the public consultation on *Alternative Commonwealth Capabilities for Crisis Response* discussion paper.

Key Recommendations

Engineers Australia has a number of key recommendations, outlined below. This feedback has been gathered from our members during the consultation period and via feedback from the engineering round table event recently hosted by the Department of Home Affairs.

Further information on these recommendations is provided in the Discussion Paper Responses section.

Recommendation 1

Establish greater coordination potential across jurisdictions. This includes establishing a Commonwealth-led approach for multi-jurisdiction natural disasters. Although it is understood that states are the primary responders, when the scale and severity of a natural disaster escalates across states and territories, then a Commonwealth-led response should be provided. Criteria and triggers for Commonwealth engagement in this regard can be further developed.

Recommendation 2

Develop a National Registry of suitably qualified persons, including engineers as a means of aiding crisis response and rallying individuals across jurisdictions with specific skills and experience.

Recommendation 3

Develop a nationally recognised micro-credential for emergency preparedness and crisis response for both engineers and non-engineers.

Recommendation 4

Immediately establish senior engineering roles within government to enable greater 'in-house' technical support in all areas of natural disaster management. This includes in both the Department of Home Affairs and the National Emergency Management Agency. Engineers Australia strongly supports the establishment of a Chief Engineer role nationally, with comparable roles in states and territories.

Discussion Paper Responses

Question 1: Acknowledging the primary role of state and territories in emergency response, what longer-term capacities and capabilities does the Commonwealth need to develop to meet the challenges of the evolving strategic environment?

It will be critical to enhance and embed the role of engineers in state, territory, and Commonwealth processes as a measure of improving Australia's capacity and capability to prepare for and recover from natural disasters. Specifically, engineering is critical to:

- Establishing national emergency preparedness frameworks particularly for infrastructure, built environments, and communities. Activities should focus on investing in improved sustainable and resilient systems, adopting new standards, and development of adaptive technologies.
- Revisiting risk control measures: Typically, risk management processes follow the repeating process of identify hazards, assess risks, control risks and review control measures. While risks themselves are often well understood, the control measures can be historically ineffective. An analysis of a control measure hierarchy can provide insights into more effective strategies for emergency preparedness. For example, the hierarchy of control measures is:

    1. Elimination.
    2. Substitution, isolation, and engineering controls.
    3. Administrative controls.
    4. Personal protective equipment.

    - The most effective control is elimination and the least effective is personal protective equipment.
    - In most cases, administrative controls are used, such as ordering people to leave an area of crisis.
    - There is also a high reliance on engineering controls such as levees, firebreaks and building standards.
    - The control measure that is most effective, which should be prioritised, is elimination.
    - Eliminating risk through no-build zones and banning the practice of replacing like for like in known high risk areas should be established.
- Enhancing recovery timeframes: The first objective in disaster response is to protect and sustain life, and during recovery the focus is returning communities to normal. Engineering expertise allows timely responses to recovery processes.
- Providing safe recovery coordination: Engineers are proficient at assessing damage, providing clean-up advice, coordinating infrastructure repairs, and designing future resilience measures.

Question 2: At a national level, what are likely to be the key pressure points or challenges for the Commonwealth responding to competing and concurrent crises?

As per Recommendation 2, a key challenge is the identification of an available engineering workforce that:

- Understands emergency preparedness and crisis response processes for natural disasters.

- Has the necessary disciplinary (often multi-disciplinary) and leadership skills.
- Has the necessary experience working with emergency management teams, and multi-jurisdictional teams in high pressure and contested environments.
- Is available to be present in times of crisis and not subject to conflicting day-job pressures. The government may consider incentivising either the individual or company that supports crisis response participation.

Engineers Australia further notes that the coverage of Professional Indemnity and Public Liability insurance also needs to be examined in a crisis response situation and support given to engineers making decisions based on uncertain and/or incomplete data within critical time constraints.

Question 3: How could the Commonwealth build community resilience and capability so they are better able to respond to and recover from national-level crises?

Engineers Australia considers the following measures would build community resilience and capability:

- Commonwealth oversight of engineering capability by discipline and jurisdiction as a means of facilitating deployment during times of crisis.
- Improved lessons learned capacity and improved data capture. This will allow improved and better risk management informed by previous disasters. Risk assessments must be continually updated, with a focus on eliminating risks.
- Improved methods of forecasting and use of foresight and systems thinking that explore uncertainty and impacts of change. This will facilitate an adaptive response to the effects of climate change.
- Greater focus on planning and disaster response exercises, which should include all aspects of disaster management.

Question 4: What changes in the current system are necessary to help Australia have the right capabilities and capacity to handle concurrent crises?

As per Recommendation 4, Engineers Australia strongly encourages all levels of Government to establish (where appropriate) a Chief Engineer role. Engineers in jurisdictions should be represented in all serious disaster management activities as they are able to provide key advice during all phases of disaster management.

Establishing engineering capacity within government will further create accountability for engineering actions rather than shifting engineering risk to industry, which has the unintended outcome of simply increasing project costs.

Question 5: What models could the Commonwealth explore to replace or supplement support currently provided by the ADF during domestic crisis?

- *What does the right mix of Commonwealth capabilities look like?*
- *How could a Commonwealth workforce surge capacity be replicated in a scalable, efficient, and effective way?*
- *How could we harness the critical role of volunteers and civilian groups under this model?*
- *How do these models supplement, but not replicate, existing models operating at a state and territory and local level?*
- *What role could industry / the private sector play? How can the Government attract increased investment in emergency management from the private sector?*
- *What gaps currently exist in state and territory emergency management capability?*

There are a number of models the Commonwealth can improve to support the ADF:

- As per Recommendation 3, develop micro-credentials for emergency preparedness and crisis response/recovery.
    - Engineers Australia is ideally positioned to collaborate with the Commonwealth government in developing a suite of micro-credentials for both engineers and non-engineers.

    - Micro-credentialing will work towards developing a national, consistent approach to ensuring relevant skills are standardised and verified across Australia.
    - Micro-credentials can be digitally badged with metadata containing information about skill level, experience, jurisdiction, and discipline area.
    - Micro-credentials may be expanded to recognise existing training and qualifications from multiple jurisdictions.
    - Participants in micro-credentialing could be nominated to be included in a National Registry of suitably qualified individuals able to be called upon for both planning and response scenarios across jurisdictions or nationally.
- Expand the Trusted Information Sharing Network (TISN) to include all forms natural disaster management, including the built environment. Disaster management relies on honesty between players, and because of devolved engineering services and construction activities, honesty cannot necessarily be relied upon.
    - The TISN is a good platform to alleviate this while maintaining competitive advantage.
    - The TISN and the Critical Infrastructure Advisory Council can provide a better understanding of what critical infrastructure is and how the systems of criticality either assist or hinder disaster management.
- Engineers could make better use of research and development in new technologies. For example,
    - Improved deployable infrastructure in crisis response, with a focus on new materials and designs, and
    - Crisis response mechanisms, particularly for at-risk communities, evaluate a range of failure options based on current and new technologies.

Question 6: Are there sectors that could replicate the capabilities provided by the ADF?

The ADF is uniquely qualified to operate and deploy in difficult to reach places. The capacity for quick response times in potentially geographically challenging locations cannot be replaced by any other sector.

This, however, needs to be coupled with specialist engineering expertise.

The intersection of response time, crisis location and engineering expertise needs to be guided by a governance and leadership model that fosters a smooth transition from first responder (ADF) to ongoing and recovery responder (engineers and other suitably qualified personnel).

Question 7: What are the critical functions the Commonwealth Government should continue to perform in disaster relief and recovery, in support of local, state and territory governments?

As per Recommendation 1, Greater coordination of state and territory activities during large scale natural disasters. This should include:

- National emergency preparedness which should include planning, exercising and recovery procedures.
- A National Alert System to reach communities via text or phone in harm's way during times of crisis. Websites offering alerts are often ignored or not viewed.
- Establishing a National Chief Engineer role, with a view to encouraging states and territories to similarly establish similar roles.
- Data registry of key individuals who are suitably qualified and experienced in developing emergency preparedness and responding to crisis situations.

Question 8: What legislative, regulatory or policy changes could be undertaken to make it financially viable for other sectors to contribute to a Commonwealth crisis response capability?

- Funding made available for micro-credentialing.
- Incentivised participation for suitably qualified personnel in all forms of disaster planning and response.

Ongoing Engagement and Contact

Engineers Australia stands ready to participate in future opportunities to discuss any of the issues and recommendations raised in this submission. Please do not hesitate to reach out if you would like clarification or to discuss anything further.

[redacted]

Sincerely yours

[redacted]

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