

# Practice Note

Topics in this edition | Capability | Decision-making | Emergency management | Response

NOVEMBER 2025

## Capability maturity: assessments and targets for severe to catastrophic disasters



Photo: Andrew McCullough, NSW SES

### Why this matters

Organisations with emergency management responsibilities must be capable of preparing and managing severe to catastrophic disasters. This Practice Note presents a capability assessment tool that organisations can use to assess their capability maturity to adequately prepare for and manage severe to catastrophic disasters.

The development of the tool was informed by the outcomes of the [Catastrophic and cascading events: planning and capability](#) project and supports the intended outcomes of the [Australian Disaster Preparedness Framework](#).

It aligns with recommendations of recent inquiries and reviews including the Royal Commission into National Natural Disaster Arrangements and the Independent Review of Commonwealth Disaster Funding. It has already been used to define capability targets for the NSW emergency management sector in partnership with NSW Reconstruction Authority.

**Andrew Gissing**, Natural Hazards Research Australia

# How to use the research

The [Capability Maturity Assessment Tool](#) can be used by organisations to assess their capability maturity. It uses criteria that align with the [National Disaster Preparedness Framework](#) and provides an overview of how to strengthen coordinated preparedness for severe to catastrophic disasters, especially when facing numerous concurrent or sequential disasters that result in resource conflicts.

The tool is easy to use, can be tailored to specific needs and be used on a longitudinal basis to help organisations measure and report on their preparedness.

A [Capability Maturity Assessment Facilitator's Guide](#) was developed to support the implementation of the tool.

## Summary

Capability is the ability and power to deliver and sustain an effect within a specific context and timeframe. Capability consists of the elements of people, resources, governance, systems and processes (Department of Home Affairs 2018).

Severe to catastrophic disasters threaten to overwhelm the capability of the states and territories. Therefore, a national, all-hazards, whole-of-community approach is required to capability assessment. The Capability Maturity Assessment Tool presented in this Practice Note provides such an approach and can be used to inform capability development.

## STATEMENT OF PURPOSE

This research forms part of the *Planning and capability requirements for catastrophic and cascading events* project, initially undertaken through the former Bushfire and Natural Hazards CRC. Resilience NSW (now the NSW Reconstruction Authority), on behalf of the New South Wales (NSW) emergency management sector, partnered with Natural Hazards Research Australia (the Centre) to further explore how the research outcomes can be used to support capability maturity assessment.

## Background

In 2021, the *Developing capability targets for the NSW emergency management sector* project through the previous Bushfire and Natural Hazards CRC partnered with Resilience NSW (now NSW Reconstruction Authority) to advance the NSW Capability Development Framework by including a series of capability targets.

Developed in partnership with the Centre, Risk Frontiers, Macquarie University and the Australian National University, these targets help support capability, capacity and preparedness to meet the needs of a climate changed Australia.

## A national approach

The [Royal Commission into National Natural Disaster Arrangements](#) found the need for a national approach to capability planning across states and territories and that states and territories should have a structured process to regularly assess capability and capacity requirements (Binskin, Bennett, & Macintosh 2020).

Developed by the Australian Government in conjunction with states and territories, the Australian Disaster Preparedness Framework supports efforts to develop the national capabilities necessary to prepare for, respond to and recover from severe to catastrophic disasters. The Framework highlights the need to identify the suite of essential capability requirements to ensure capabilities are sustainable and gaps are identified and filled (Department of Home Affairs 2018).



Photo: Castlemaine Unit, Victorian State Emergency Service

## A holistic approach

The Australian Disaster Preparedness Framework states that a nationally consistent approach to capability maturity assessment that accounts for the unique Australian context is needed.

A national approach should comprise the following elements.

- **Risk scenarios** – all capability maturity assessments should be based upon likely severe to catastrophic disaster risk scenarios.
- **Capability targets** – the target for each core capability is informed by an area's, or region's risk profile. Targets represent the capability required to effectively prepare for and respond to a severe to catastrophic disaster.
- **Capability maturity assessment** – measurement against capability targets, using, for example, the [Capability Maturity Assessment Tool](#), ensures transparency and knowledge exchange between agencies to better understand and adjust for capability strengths and weaknesses.
- **Validation and review** – annual review and validation of capability assessment should take place using data from real-world incidents. Exercises and modelling can assist to validate assessments but should be supported by real-world data and subject matter expertise.
- **Emergency planning** – the results of the capability maturity assessment should inform emergency planning and capability investment decisions.



Photo: Andrew McCullough, NSW SES

## Defining capability targets

Each capability element links to capability targets that provide benchmarks for expected delivery in a severe to catastrophic disaster. In the United States, capability targets are a fundamental way to measure capability maturity as part of the Threat and Hazard Identification and Risk Assessment (THIRA) and Stakeholder Preparedness Review processes (Department of Homeland Security 2018).

Each target assists in measuring the capability available to respond to a severe to catastrophic disaster, indicating an overall level of preparedness.

Targets were developed for each of the core capabilities outlined in the NSW Capability Development Framework

(NSW Government 2020), while planning and preparedness-related targets were informed by existing emergency management policy objectives. Response and recovery targets comprise three components:

- an impact which represents the size of the capability requirement
- a critical task which represents a specific action required to achieve a capability target
- a timeframe metric representing the time taken to perform each action.

An example is illustrated in Figure 1.



**Figure 1:** Capability target format for storm damage critical task

The process of developing these capability targets included:

- development of realistic severe to catastrophic disaster scenarios using risk-based evidence
- stakeholder consultation to establish the capability narratives that describe a critical task, represent a specific action required to achieve a specific capability, and define the impact and timeframe or policy measures consistent with the chosen disaster scenario
- testing and validation of capability targets by subject matter experts.

Examples of capability targets suggested by this process include:

- organisational resilience – all government departments, agencies and key partners have business continuity plans that are tested and reviewed annually
- operations management and coordination – within 6 hours of a potential or actual incident, a state-wide Level 3 integrated and coordinated incident control structure is established and maintained, supporting the emergency operations for 6 months
- evacuation support – within 12 hours' notice of a major incident, evacuation facilities are ready to receive 25,000 people and companion animals (5,000 animals) and this capability is sustainable for 2 weeks
- mass care – within 12 hours of an incident there is capability to triage 2,000 injured people, commence treatment and transfer to appropriate facilities.

## Capability Maturity Assessment Tool

Capability maturity assessments identify and prioritise capability gaps. Where gaps are identified, opportunities to bridge them should be explored; for example, developing partnerships, integrating spontaneous volunteering in emergency plans, investing in new capacity or altering operating models.

Developed in collaboration with subject matter experts, the Capability Maturity Assessment Tool uses a series of criteria to measure capability maturity, providing separate insights into potential capability gaps related to people, resources, governance, systems and processes. The tool ranks individual capability elements with a maturity score of *informal*, *developing*, *established* or *self-sustaining*. A selection of criteria and a rubric for maturity scores are shown in Table 1.

**Table 1:** Capability Maturity Assessment Tool criteria and scoring

| 1 = Informal                                                                                 | 2 = Developing                                                                                                                                                                   | 3 = Established                                                                                             | 4 = Self-sustaining                                                                                                                               |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Trained, exercised and skilled personnel</b>                                              |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Insufficient trained, exercised and skilled personnel. Capability targets are not understood | Insufficient trained, exercised and skilled personnel available, however capability targets are established and understood with pathways in place to achieve sufficient capacity | Sufficient trained, exercised and skilled personnel readily available when compared with capability targets | Number of trained, exercised and skilled personnel readily available exceeds capability targets.                                                  |
| <b>Consideration of personnel surge capacity arrangements</b>                                |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Arrangements for surge capacity have not been considered                                     | Arrangements for surge capacity are informal, reactive and untested in major emergencies                                                                                         | Arrangements for surge capacity are documented in plans but untested in major emergencies                   | Arrangements for surge capacity are documented in plans, regularly exercised and operate effectively when tested under major emergency conditions |
| <b>Personnel capacity-building pathways</b>                                                  |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Capacity-building pathways are informal                                                      | Capacity-building pathways are organisation-specific                                                                                                                             | Collective capacity-building pathways exist but are reactive. Culture of working as one is maturing         | Collective capacity-building pathways are strategic, proactive and operating effectively. Culture of working as one is embedded                   |
| <b>Sufficiency of physical resources</b>                                                     |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Insufficient resources                                                                       | Insufficient resources available; however, capability targets are established and understood with pathways in place to achieve sufficient capacity                               | Sufficient resources readily available when compared with capability targets                                | Available resources readily exceed capability targets                                                                                             |
| <b>Consideration of physical resource surge capacity arrangements</b>                        |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Arrangements for surge capacity have not been considered                                     | Arrangements for surge capacity are informal, reactive and untested in major emergencies                                                                                         | Arrangements for surge capacity are documented in plans but untested in major emergencies                   | Arrangements for surge capacity are documented in plans, regularly exercised and operate effectively when tested under major emergency conditions |
| <b>Physical resource capacity-building pathways</b>                                          |                                                                                                                                                                                  |                                                                                                             |                                                                                                                                                   |
| Resource capacity-building pathways are informal                                             | Resource capacity-building pathways are organisation-specific                                                                                                                    | Collective resource capacity building pathways exist but are reactive                                       | Collective resource capacity building pathways are strategic, risk-based, proactive and/or operating effectively                                  |

(Continues over page)

| 1 = Informal                                                                                         | 2 = Developing                                                                                                                                                               | 3 = Established                                                                                                                                                           | 4 = Self-sustaining                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Definition of roles and responsibilities</b>                                                      |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Roles and responsibilities are not defined                                                           | Roles and responsibilities are inconsistently defined                                                                                                                        | Roles and responsibilities are mostly well defined                                                                                                                        | Roles and responsibilities are consistently well defined                                                                                                                                            |
| <b>Governance, strategy, monitoring, risk management and reporting</b>                               |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| No systematic governance, strategy, monitoring, risk management or reporting                         | Specific project/single agency-based governance, capability planning, monitoring, risk management and reporting. Collective governance largely inconsistent and disconnected | Collective governance, risk management, capability planning, monitoring and reporting processes are established                                                           | Collective governance, monitoring, risk management, capability planning and reporting is actively connected and exercised. Governance enables flexibility, adaptability and transformational change |
| <b>Assurance and lessons learnt</b>                                                                  |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Assurance activities are limited and inconsistent<br>Poor lessons learnt culture                     | Assurance activities are organisation specific and lack independence<br>Lessons learnt culture is emerging                                                                   | Assurance activities are sector wide and collaborative but lack independence<br>Lessons learnt culture and systems exist                                                  | Independent sector wide risk-based assurance is provided<br>Strong lessons learnt culture and management system                                                                                     |
| <b>Systems</b>                                                                                       |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Systems are insufficient, operate in isolation and have suffered from previous failures              | Systems are one-off, project-specific or not well embedded. Systems might be connected and interoperable at an organisation level, but not across organisations              | Systems are user-friendly, fit for collective purpose and interoperable across organisations. Limited ongoing resourcing for systems enhancement to meet changing purpose | Systems are user-friendly, fit for collective purpose and interoperable across organisations. Active connection with system users to enhance systems with sustainable resourcing                    |
| <b>Business continuity</b>                                                                           |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Business continuity and information technology (IT) recovery plans are not developed or are outdated | Business continuity and IT recovery plans are being developed or reviewed                                                                                                    | Business continuity and IT recovery plans are established                                                                                                                 | Business continuity and IT recovery plans are established, tested and proven to be robust                                                                                                           |
| <b>Process maturity</b>                                                                              |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Processes are informal and organisation- and hazard-specific                                         | Collective processes exist but with limited collective adoption across agencies/organisations. Reactive refinement occurs when a problem emerges                             | Collective processes documented and clearly visible. Limited appetite or capacity to refine in a proactive manner                                                         | Collective processes fully embedded, tested and regularly updated with feedback loops across organisations. Proactive anticipation and resolution of problems not yet established                   |
| <b>Process understanding</b>                                                                         |                                                                                                                                                                              |                                                                                                                                                                           |                                                                                                                                                                                                     |
| Processes are not well understood by personnel                                                       | Processes partially understood by personnel, though efforts are underway to improve understanding                                                                            | Processes are understood by personnel                                                                                                                                     | Processes are well understood by personnel and have been exercised/tested and proven to be robust                                                                                                   |

The tool uses a risk-based approach to assess states and territories' capability to effectively prepare for and manage severe to catastrophic disaster scenarios, as well as test future scenarios within the context of a warming climate and growing exposure to natural hazards.



## Impact case study

### Capability to respond to catastrophic disasters

The previous BNHCRC planning and capability requirements for catastrophic and cascading disasters project developed and implemented a process for capability maturity assessment. In 2019–20, this approach was utilised by the NSW Office of Emergency Management on behalf of the NSW State Emergency Management Committee to undertake a state-level capability maturity assessment consistent with the Capability Development Framework for the NSW Emergency Management Sector.

In 2025, the NSW State Emergency Management Committee again used the approach, developed through the BNHCRC, to undertake a state-wide regional level assessment.

The project, led by the NSW Premier's Department and NSW Reconstruction Authority, will assist the NSW State Emergency Management Committee understand opportunities to enhance capabilities across people, resources, governance, systems and processes. Staff from Natural Hazards Research Australia have supported the upskilling of NSW Government facilitators, delivering training sessions and providing expert advice.

*"The capability maturity assessment methodology provides an evidenced-based approach to identifying capability improvement opportunities to build safe, resilient and sustainable communities."*

**Danielle Meggos**, Director of Capability Development, The Premiers Department, New South Wales Government

## References and further reading

Binskin M, Bennett A & Macintosh A (2020) Royal Commission into national natural disaster arrangements. <https://www.royalcommission.gov.au/natural-disasters>

Department of Home Affairs (2018) Australian disaster preparedness framework. <https://www.homeaffairs.gov.au/about-us/our-portfolios/emergency-management/resources#content-index-11>

Department of Homeland Security (2018) Threat and hazard identification and risk assessment (THIRA) and stakeholder preparedness review guide. <https://www.govinfo.gov/app/details/GOVPUB-HS-PURL-gpo146632>

Natural Hazards Research Australia (2023) Development of capability targets for the NSW emergency management sector. <https://www.naturalhazards.com.au/research/research-projects/catastrophic-and-cascading-events-planning-and-capability>

National Emergency Management Agency (2024) Independent review of Commonwealth disaster funding. <https://www.nema.gov.au/about-us/governance-and-reporting/reviews/independent-review-of-commonwealth-disaster-funding>

NSW Government (2020) A capability development framework for NSW emergency management sector. <https://emtraining.nsw.gov.au/assets/Uploads/Emergency-Management-Capability-Development-Framework.pdf>

## SUBSCRIBE

Get the latest research delivered to your inbox.

**Natural Hazards Research Australia is the national centre for natural hazard resilience and disaster risk reduction, funded by the Australian Government and Participants.**

Practice Notes are prepared from available research at the time of publication to encourage discussion and debate. The contents of Practice Notes do not necessarily represent the views, policies, practices or positions of any of the individual agencies or organisations who are Participants of Natural Hazards Research Australia.

All material in this document, except as identified here, is licensed under the Creative Commons Attribution-Non-Commercial 4.0 International Licence.

Material not licensed under the Creative Commons licence:

- All logos
- All photographs.

All rights are reserved in content not licensed under the Creative Commons licence. Permission must be sought from the copyright owner to use this material.