



DISASTER
RESILIENT
AUSTRALIA



NATIONAL STRATEGY FOR DISASTER RESILIENCE: IMPLEMENTATION REVIEW

Progress to date



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Introduction

Like many nations across the world, extreme weather is a fact of life in Australia. Our risk exposure continues to be a consequence of many drivers, ranging from urbanisation, accelerated economic growth and demographic changes, to changing climate patterns. To enhance Australia's capacity to withstand and recover from emergencies and disasters the Council of Australian Governments (COAG) endorsed the National Strategy for Disaster Resilience (the Strategy) in February 2011. The Strategy represents a whole-of-nation resilience based approach to disaster management, which recognises that our resilience is the shared responsibility of governments, communities, business and individuals. The Strategy provides high-level guidance on disaster management across identified priority areas to build disaster resilient communities.

In 2014, the Law, Crime and Community Safety Council (LCCSC) tasked the Australia-New Zealand Emergency Management Committee (ANZEMC) to review the implementation of the Strategy to undertake a critical evaluation of progress and identify future priority areas of focus. The Review has found that while we are still at the beginning of a long term journey to build Australia's resilience to disasters, a significant body of work has occurred since the Strategy's endorsement that delivers against the Strategy's priority outcomes. This work includes the development of national best-practice overseen directly by the ANZEMC, a range of activities progressed by state, territory, and local governments specific to their jurisdictions' needs, as well as work undertaken by non-government bodies, communities and individuals.

This document describes the significant progress that has been made over recent years under the priority areas of the Strategy, drawing on case studies from all jurisdictions. This work has assisted Australia to deliver against its international obligations under the United Nations' *Hyogo Framework for Action 2005-2015, Building Resilience of Nations and Communities to Disasters*.

As the Strategy continues to provide the high-level strategic direction and guidance for all stakeholders to drive new and existing disaster resilience work, the future provides the opportunity to re-focus efforts to ensure that the priority outcomes of the Strategy are continuing to be achieved. We will focus on:

- Measurement, Evaluation and Strategic Priority Setting
- Improving Cross-Sectoral Partnerships
- Improved Community Engagement
- Enhanced Resilience in the Built Environment
- Better Risk Awareness and Risk Mitigation, and
- Improved Capabilities for Disaster Resilience.

All governments will continue to work together with all stakeholders and play a significant role in strengthening the nation's resilience to disasters. This work will also ensure that Australia fulfils its commitments under the newly agreed United Nations Sendai Framework for Disaster Risk Reduction: 2015-2030.

Priority One: Leading change and coordinating effort

Leadership is needed to drive improvements in disaster resilience. The responsibility for leadership should be taken by all partners within their sphere of influence in a coordinated manner, so as to maximise the benefits from limited resources. (The Strategy, page 6)

What has been done?

The ongoing commitment of Ministers and senior officials nationally, through LCCSC and its precursors, ANZEMC and its sub committees has been central to driving implementation of the Strategy.¹ Leadership has been shown across a variety of jurisdictions and sectors, and with business. Many jurisdictions have developed and implemented local resilience strategies tailored to the specific needs of their jurisdictions and in some cases mirrored national governance structures at the state level. These governance mechanisms have supported strong networks and facilitated coordinated effort.

Case Study: Community Engagement Framework

The Community Engagement Framework (the Framework) provides guidance for state, territory and local government agencies with a role in emergency management, as well as non-government emergency management practitioners to effectively engage with the community. It outlines a shared understanding of community engagement values, principles and practice in Australia.

The Framework incorporates an engagement model that is circular to show that one engagement approach is not necessarily better than any other, and that different approaches are legitimate depending on the purpose and context of a particular situation.

Case Study: Australian Red Cross – Community Recovery Information Series

The Australian Red Cross Community Recovery Information Series aims to empower communities to drive their own disaster recovery by providing relevant and accurate information to communities. It comprises modular based information sessions aimed at those affected by, or those working in, communities affected by emergencies. The series includes modules that cover the basics of recovery, self-care, communicating in recovery and harnessing goodwill.

A facilitator guide also encourages facilitators to adapt the modules for the needs of communities. Facilitators can tailor the information for different audiences and can adapt sessions for a variety of settings.

The series is presented in a flexible and adaptive format to allow for information to be shared in a variety of ways and at different times to reflect the differing needs and resources of communities.

¹ See Appendix 1 for the ANZEMC Governance Structure and relevant information on ANZEMC Sub-Committees

Case Study: Community Disaster Resilience Scorecard Toolkit

The Community Disaster Resilience Scorecard was developed by the Torrens Resilience Institute with funding provided by the Australian Government's Attorney-General's Department National Emergency Management Projects (NEMP) grants program. The project conducted an international review of existing community resilience models to develop a definition and model of community resilience and the Scorecard Toolkit.

The Scorecard identifies four components of disaster resilience: community connectedness, risk and vulnerability, planning and procedures and available resources. Each of these components has several parts, with each part scored from one to five, with five being the highest level of resilience.

Some of the information needed to complete the Scorecard will come from official census or similar information. The majority of decision-making for the Scorecard should be an interactive process that involves a working group with representatives of the local government and individuals from the community, including some who may not see issues through the same lens.

The completed Scorecard provides a point-in-time snapshot of some key measures important to resilience. Using the Scorecard at regular intervals (12, 18, 24 months) can track progress on selected areas of action, and identify any new areas needing attention.

The Community Disaster Scorecard Toolkit is available at <http://torrensresilience.org/community-resilience-toolkit>

Priority Two: Understanding risks

Australia's vast and diverse regions, landscapes and climatic variations mean we will continue to be at risk from the damaging impacts of disasters. Underpinning a disaster resilient community is knowledge and understanding of local disaster risks. We all share responsibility to understand these risks, and how they might affect us. By understanding the nature and extent of risks, we can seek to control their impacts, and inform the way we prepare for and recover from them. (The Strategy, page 6)

What has been done?

Significant progress has been made in building our understanding of natural disaster risk. States and territories are developing updated state-level risk assessments. The *National Emergency Risk Assessment Guidelines* (NERAG) have been developed to provide a consistent methodology for governments to assess and prioritise disaster risks and hazards. The Risk Assessment, Measurement and Mitigation Sub-committee (RAMMS) has developed a strategic framework, known as the Mitigation Value Chain, to understand the information, tools and processes that support mitigation investment decision-making. A significant body of work has also been progressed to address knowledge gaps in flood risk, under the *National Work Program for Flood Mapping*.

Case Study: National Emergency Risk Assessment Guidelines

NERAG provides a contextualised, emergency-related risk assessment method to assess emergency-related risks from all hazards and is principally concerned with enabling the consistent application of emergency-related risk assessment practices across Australia. The NERAG is consistent with the Australian Standard AS/NZS ISO 31000:2009 Risk Management—principles and guidelines.

NERAG's aim is to provide a risk assessment method that :

- can be used for assessing emergency-related risks at a range of scales
- examines historical and/or modelled (synthetic/scenario) emergency events across a range of likelihood and consequence levels
- identifies current risk levels under existing controls and can be used to assess effectiveness of proposed treatments (which may include new controls or control improvements)
- allows the use of various forms of evidence to inform the understanding and assessment of risks, including quantitative data, expert evidence and stakeholder consultation
- allows risk evaluation at varying levels of confidence, and
- provides outputs that allow for risks to be prioritised, and suggests either treatment planning, further investigation, or ongoing monitoring and review for each risk.

The outputs from NERAG risk assessments are intended to improve decision making when allocating scarce resources for risk treatment and emergency prevention and preparedness measures.

Case Study: Victoria's State Emergency Risk Assessment

Victoria published its first state emergency risk assessment in February 2014. It reported on fifteen significant emergency risks that are capable of causing significant emergencies. The report showed that the highest priority emergency risks to the State are bushfire, flood and pandemic influenza. Following these are a group of risks that are technological in origin, such as transport infrastructure emergency, mine failure (specifically coal mine fires supporting electricity generation), marine pollution, major hazardous materials incidents (such as spills or other uncontrolled releases) and electricity supply disruptions. In that group also are several risks that arise from natural processes, such as heatwave, plant disease epidemic, insect pest incursions and emergency animal diseases. The lowest group of these significant risks includes severe storms, liquid fuel shortage and earthquake.

The risks were assessed using a standard methodology enabling comparisons between them. Based on the AS/NZS 31000:2009, the NERAG have been customised into the emergency management context.

The assessment project was undertaken by teams of people with expert knowledge, drawn from government, the private sector and universities, facilitated by risk assessment experts. The process involved each team, in a workshop setting, identifying four plausible emergency scenarios (minor impact, moderate, major and extreme/worst case) and describing a range of their consequences on such things as human life, the economy and the environment. Each of the scenarios was then assessed for likelihood of occurrence.

A standard risk assessment process focusing on consequence and likelihood was used to derive risk levels for each of the four scenarios. Using mathematical valid processes, the results were portrayed on a chart in the report, showing the relative priority of each risk in relation to the others.

The main value of the report, which is aimed at a professional audience, is as a reference that provides a picture of emergency risks that the government has assessed. It can be used to inform strategic expenditure decision-making where resources are being allocated across risks to reflect their relative importance.

Case Study: South Australia Regional Emergency Risk Assessment

To improve the quality and accessibility of risk information South Australia has developed the Zone Emergency Risk Management System (ZERMS) Program to assess emergency risk from multiple hazards. The ZERMS Project is led by the South Australian Fire and Emergency Services Commission (SAFECOM).

A key objective of the program is to better understand the risks South Australian communities face by conducting regional based (zone) risk assessment workshops across ten different hazards, including bushfire, heatwave, earthquake and flood. The ZERMS Project uses the NERAG that is the nationally agreed methodology for conducting emergency risk assessments.

The program has significantly improved the understanding of hazards and risks within zones by engaging a broad range of stakeholders including state and local Government, industry, business and non-government organisations. These sectors have come together in workshops to identify regional emergency risks and also potential treatment options to address the risks. The risk assessments and treatment options are then documented in a Zone Emergency Management Plan that is maintained and progressed by the Zone Emergency Management Committee. The input and outputs of the risk assessment and treatment workshops are also provided to local government for inclusion in their risk management and planning process.

This process of bringing together community leaders and specialists to identify and treat local emergency risks has also proven invaluable during response and recovery operations with these new or strengthened regional relationships.

Case Study: State Risk Project WA

The State Risk Project is enabling Western Australia (WA) to gain an understanding of the risks the State faces from natural and man-made hazards which will inform the State on resource allocation and investment decisions in emergency risk management (ERM).

The State Risk Project is an initiative of the State Government of WA and is jointly-funded under the Australian Government's National Partnership Agreement on Natural Disaster Resilience.

The State Emergency Management Committee (SEMC) Secretariat is working towards identifying the significant risks posed to the State by 27 hazards that are prescribed in WA legislation. The risk assessment process uses the NERAG criteria and examines the impact of these hazards to six areas of importance to the State: people, economy, infrastructure, social, government and environment.

Multi-agency workshops are the primary mechanism for risk assessment and all workshops are based on a credible worst case scenario. An emergency risk assessment guide tailored to the WA context, as well as hazard videos, a macro-enabled risk assessment tool and a number of other accompanying materials have also been developed to aid the ERM process.

This risk assessment data will be shared between key agencies, enabling the State to better evaluate mitigation activities (including cost-benefit analysis) and to support risk management strategies. A treatment decision framework is also under development to help decision-making around treatment options for the top risks in each district. The State Risk Project will also result in an improved basis for the development of local emergency management arrangements, state emergency management plans (Westplans) and capability planning.

Case Study: Arson Reduction Program

Suspicious fires make up a high percentage of fire cause in the ACT, in line with many other jurisdictions across Australia.

The ACT Rural Fire Service and ACT Fire & Rescue have specialist, trained bushfire investigators who are deployed with ACT Police to investigate the cause of bushfires. Through cooperative arrangements, information on fire events and specific fire event intelligence is exchanged, fire scenes are examined for evidence, and the public is engaged through Crime Stoppers to provide information to detect and prosecute offenders.

This approach aligns with the Australian Government Attorney-General's Department initiative to adopt a consistent approach to bushfire arson prevention and is based around the methodologies identified in the Wildfire Arson Investigation Management Course. This course, provided at a national level to police and fire service investigators across Australia and New Zealand, was developed as an initiative of the ACT Rural Fire Service.

Case Study: Mapping Bushfire Prone Areas in Queensland

Queensland is implementing a state-wide program to map bushfire prone areas that will assist local governments and fire management groups to identify locations at risk from future severe bushfires. The new methodology, developed by CSIRO, makes practical use of spatial information and scientific knowledge of forest fire behaviour. The methodology scales bushfire hazard according to the potential fire-line intensity of a severe bushfire in areas of hazardous vegetation. It incorporates information on long term estimates of fire weather severity, potential fuel load and landscape slope. Potential fuel load mapping is derived from annual updates of satellite-based tree vegetation maps, regional ecosystem maps, land use maps, and expert interpretations of over 12,000 site records. The mapping also identifies land that may be subject to significant bushfire attack in areas adjacent to potentially hazardous vegetation.

The mapping is being incorporated into planning schemes by over half of local governments in Queensland, and is publically accessible via the Queensland Governments' State Planning Policy Interactive Mapping System. The mapping inputs and methodology is subject to continuous improvement, with the release of an updated map product for South east Queensland in July 2015.

Priority Three: Communicating with and educating people about risks

Knowledge is fundamental to enabling everyone in the community to determine their hazards and risks, and to inform preparation and mitigation measures. It is also crucial to communicate all relevant and available information during the response and recovery phases of a disaster. Sharing knowledge, including lessons learned from previous events, is also important in promoting innovation and best practice. (The Strategy, page 8)

What has been done?

The Disaster Resilience Australia 'Get Ready' branding and the Emergency Alert national telephone warning capability have built an understanding of a new resilience-based, shared responsibility model. The principle of community engagement is also well entrenched in national disaster management practice, supported by the Community Engagement Framework. The Australian Emergency Management Institute's School Education Program has developed a number of successful disaster education resources for students and teachers. A number of more targeted initiatives have focused on improving the resilience of vulnerable sections of society, culturally and linguistically diverse communities and strategies for managing volunteers.

Case Study: Triple Zero Kids' Challenge

In Australia, children make up a significant number of the callers to the Triple Zero emergency call service and it is recognised by emergency authorities that a greater effort should be made to help the young ones be able to report incidents that could be life-threatening. This game was originally designed by the National Triple Zero Awareness Working Group with the software developer, 360 Entertainment.

The Triple Zero Kids' Challenge consists of 12 scenarios, four of each based on Police, Fire and Ambulance incidents. The player learns valuable safety lessons through the 'no fail' game play. It's also an engaging educational tool for parents and teachers to help children understand the importance of planning for emergencies and learning how to call Triple Zero (000).

Since the game's initial launch in 2010, the game has been played to completion more than 1.04 million times, with users spending an average 10 minutes on-line each session. The game teaches children how to describe where an accident has happened and helps reinforce the message that the Triple Zero (000) number should only be used if there is an actual emergency. The game and website helps children provide better information to emergency dispatch centres, which means faster responses to emergencies.

The website and game are widely accessible, and have been developed to meet the needs of those users who are physically and cognitively impaired. The games are available in English and six other languages, and feature closed captions in English. The Kids' Challenge game is also available as an app from the Apple iTunes store and Google Play for Android, as well as a stand-alone version downloadable through the game's website.

An exciting addition to the Triple Zero Kids' Challenge is the development of a Teachers' Guide and Resource Pack for use in primary schools. Lesson plans and learning activities based on the game are aligned to the National Curriculum so that the Triple Zero Kids' Challenge is available as a mainstream teaching resource.

Relevant resources:

- Triple Zero Kids' Challenge website: <http://kids.triplezero.gov.au/>.
- Triple Zero (000) website: www.triplezero.gov.au

Case Study: Emergency Alert

In 2009, the loss of 173 lives during the Victorian Bushfires identified the limitations of existing capabilities to warn the vast majority of the community quickly and effectively of life-threatening emergencies.

The Australian Government invested in a national program, led by the state of Victoria, to develop a single integrated system involving the three mobile telephone carriers to provide a desktop application available to all the emergency services, enabling them to send location specific warning messages by telephone to communities at risk.

Phase 1 (Registered Service Address), introduced in October 2009, provides the ongoing capability to send text-to-voice messages to fixed line telephones and SMS text messages to mobile telephones based on the customer's registered service address when this is within the emergency warning area.

Phase 2 (Location Based Solution), implemented in October 2013, provides the enhanced capability to send SMS text messages to mobile phones based on its last recorded location on the network within the emergency warning area.

Emergency Alert has the capacity to send a high volume of SMS messages per second to mobiles and text to voice messages to fixed lines. Emergency services can use the system for multiple simultaneous warning campaigns anywhere in Australia.

The system is fully accountable, so that the emergency services can monitor and measure its performance in real-time. The operator can see the total number of telephones within the warning area and then the number actually reached by the system when the message goes out.

The system is also evaluated regularly with operators and the community affected by a campaign canvassed for their views on the success of the system and necessary improvements to practice, procedures and technical capability. The Government also continues to work with the mobile telephone carriers to incorporate new technologies.

Case Study: TrackMi

Developed by the Darwin-based National Critical Care and Trauma Response Centre (NCCTRC) with funding from the Australian Government, TrackMi (Tracking System for Major Incidents) is an innovative system for the tracking of patients from large-scale disasters and incidents. TrackMi allows emergency responders to use a handheld device to rapidly and accurately record critical information about patients. Information can be securely transmitted to incident command centres in real time to assist decision makers during a disaster.

TrackMi has been designed for use across a number of different types of incidents including mass casualty incidents, health facility evacuations, evacuation centre management, the mass transport of people, and the repatriation of citizens from overseas. These incident types are aligned with several of Australia's national disaster response plans and the system has been designed from the ground up to be fully flexible to encourage adoption of the system.

TrackMi has a range of helpful, easy-to-manage features including:

- GPS tagging to allow location awareness with all scans
- patients can be tagged onto vehicles and aircraft to allow for real time location tracking
- a full audit trail is recorded automatically, including tracking of location, date, time, and user information
- a facility to create 'apps' to suit an organisation's workflows, or meet requirements for different types of incidents
- progressive updating of devices, where changes can be made mid-incident and sent to devices while they are in the field, and
- capability to use the system on a range of desktop and mobile hardware devices.

Official website: www.Trackmi.gov.au

Case Study: My Fire Plan app

The MyFirePlan is a smartphone application developed by the New South Wales (NSW) Rural Fire Service.

The application was developed following research which showed that many people saw that completing a written Bush Fire Survival Plan was a complex and difficult task.

By breaking down the planning process into easy steps, the application walks people through the process of making a bush fire plan, identifying the tasks they need to complete, and giving them the ability to print or share their completed plan.

As bush fire planning can take some time, the application also allows people to set reminders for certain tasks. It also provides the user with links to important information such as fire activity in their area, and the current fire danger. It can also operate without a data connection, meaning users can access it easily during an emergency. The application has also given the NSW RFS the ability to gain valuable information and metrics about levels of planning and preparation, including data on completion rates and hurdles in completing the plan.

The application has improved the takeup of Bush Fire Survival Plans in NSW, and presented the complex issue of bush fire planning and preparation in an engaging format.

MyFirePlan is available for iOS and Android devices and is free of charge.

Case Study: SPOT

The single point of truth (SPOT) is part process and part technology. The SPOT process is a streamlined channeling of all information during an emergency to disseminate emergency alerts, updates and warnings to multiple platforms, including the ACT Emergency Services Agency (ESA) website, Twitter, Facebook, RSS and Geo RSS feeds, personal email accounts and SMS distribution groups.

This allows each emergency alert, update and warning to be distributed at the same time, within seconds to multiple audiences such as the general public, Canberra Connect call centre, ministers and senior ACT Government executives. The SPOT app, developed internally by the ESA, has gained national and international interest from emergency services and was awarded the overall top national prize in the Resilient Australian Awards in December 2012.

The ESA website is a key component of the SPOT. This site was developed using open-source software, and features all emergency alerts, updates and warnings on the homepage, as well as a live incidents feed, a fire danger meter and a range of preparedness information and advice. The site has recorded more than 2 million unique visits and more than 4.3 million page views since it went live in September 2011.

Spikes have been recorded during major emergency situations, with 150 000 unique visits in less than 24 hours during the elevated fire danger conditions in January 2013. In the context of the ACT's population of approximately 370 000 people, this represents an outstanding success, delivering the message of a shared responsibility for bushfires in the ACT.

Priority Four: Partnering with those who effect change

Working together and drawing on the expertise and capacity of various partners produces far greater results than do individual efforts alone. Partnerships across and within governments, businesses, the not-for-profit sector and the community will create a well-informed, integrated and coordinated approach to increasing disaster resilience. The result will be a more resilient nation. (The Strategy, page 9)

What has been done?

The ANZEMC structure has been successful in driving partnerships across governments, enabling high levels of cross-jurisdictional engagement. Partnerships are also emerging between state government agencies and with the not-for-profit sector. Projects such as the development of the *Disaster Resilience and Response Program and Benchmarking System for the Australian Community Services Sector* are fostering better partnerships with communities. At the federal level, the revised *Critical Infrastructure Resilience Strategy* recognises the essential role that the private sector plays in ensuring the resilience of critical infrastructure. The private sector is also increasingly engaged in the disaster resilience agenda, with the advocacy work of Australian Business Roundtable for Disaster Resilience and Safer Communities, as well as the work of the Rockefeller Foundation and the 100 Resilient Cities challenge providing great examples.

Case Study: Australian Business Roundtable for Disaster Resilience and Safer Communities

The *Australian Business Roundtable for Disaster Resilience & Safer Communities* was formed by the Chief Executive Officers of Australian Red Cross, Insurance Australia Group, Investa Property Group, Munich Re, Optus and Westpac Group.

Recognising that governments acting alone cannot address the challenge of how best to manage the impact of natural disasters, the Australian Business Roundtable for Disaster Resilience & Safer Communities was formed with the aim of supporting the development of a more sustainable, coordinated national approach to making our communities more resilient and Australian people safer. Combining each organisations expertise and information in finance and insurance, telecommunications, property infrastructure and humanitarian knowledge and by working together with government the Roundtable believes that it is possible to save lives, reduce damage to property and vital national infrastructure and free up taxpayer money to spend on essential public services and community.

Through its research program, the Roundtable fills an important information gap, both here in Australia and internationally, on the potential outcome of mitigation activities at an aggregate, or national level. It calls for effective and prioritised pre-disaster investment across the country and highlights the importance of integrated information and activity across government, business and community.

Case Study: Get Ready Campaign – Shire of Augusta Margaret River

Stemming from the 2011 Margaret River bushfires, in August 2013 the Augusta Margaret River Shire (the Shire) and the Australian Red Cross secured funding from the Natural Disaster Resilience Program for a multi-hazard emergency preparedness project. This joint partnership capitalised on the Australian Red Cross' emergency preparedness expertise and the Shire's community development skills and local knowledge to build community resilience to future emergencies.

With a strong focus on 'shared responsibility', a multi-agency steering committee was formed with representatives from the Shire, Australian Red Cross, Department of Fire and Emergency Services, State Emergency Services, Department for Child Protection and Family Support, State Emergency Management Committee Secretariat, Bushfire Brigades, Bushfire Ready volunteers and the community. Regular meetings provided a forum to share expertise, guide project direction and collaborate on innovative preparedness strategies.

A community centred approach was embraced, using local people and local knowledge to increase risk awareness, empower individuals to be prepared, build social capital and develop and enhance sustainable volunteer and community networks. Local volunteer facilitators were recruited and supported to conduct Get Ready! sessions with target groups. Sessions were tailored and held within existing group settings, enhancing community as well as developing sustainable volunteer networks. Participants benefit by multi-agency content and resources and the sessions encapsulated local community knowledge and experiences from the 2011 bushfires. Results show the majority of participants took steps to prepare themselves, increasing resilience by minimising potential physical, economic and social losses.

Case Study: Community Resilience Innovation Program

The Community Resilience Innovation Program (CRIP) is a NSW grants scheme under the Natural Disaster Resilience Program, funded by the New South Wales and Australian Governments through the National Partnership Agreement on Natural Disaster Resilience.

The CRIP aims to support a broad range of locally based projects that aim to increase community disaster preparedness from an all-hazards perspective, and assist local communities in building and revitalising partnerships between local emergency management agencies, community organisations and groups and the not-for profit and private sectors. The objectives of the CRIP are to:

- Encourage local communities to engage in creative, community-focussed activities that will enhance disaster resilience
- Develop effective partnerships and build networks between local community organisations, councils and emergency services agencies
- Foster ways to effectively engage the local community in emergency management and resilience building
- Share knowledge and lessons learnt about new approaches and models through project evaluation, and
- Support initiatives that can be integrated into current business and maintained in the longer term

Since the program was initiated in 2013-14, over \$2.5 million has been provided to 30 projects across NSW. Funded projects include: Blackheath Neighbourhood Centre–Heads Up for Fire; Northern Settlement Services Ltd–Disaster Resilience for CALD communities in Hunter and Central Coast; the University of Sydney–Disability Inclusive Disaster Preparedness, and the Australian Red Cross (NSW)–Beyond the Assembly Point–Building Disaster Resilience of Childcare Services.

Case Study: Monash University Disaster Resilience Initiative

The Monash University Disaster Resilience Initiative (MUDRI) harnesses expertise relating to disaster resilience across Monash University, the emergency management sector and the general community—with the primary goal of strengthening community-based disaster resilience.

A major strategy directed towards achieving this goal is the *Monash University Disaster Resilience Forums* conducted by MUDRI. Commencing in 2011, their purpose is to:

- Promote and influence the National Strategy for Disaster Resilience
- Strengthen the ability of the emergency management sector to access research information regarding resilience, and
- Provide a forum for the widest range of emergency managers to hear leaders in the field discuss the issues of the day and to interact in sharing ideas and questions around the interests of the sector.

Four one-day Forums are now conducted each year, each involving up to 90 participants. The typical breakdown of participants is: emergency service organisations (18%), tertiary institutions (17%), health-related (14%), private organisations (14%), local government (10%), humanitarian (9%), community members (9%), government (8%) and NGOs (2%). They are richly interdisciplinary.

The themes for the four Forums on an annual cycle relate to: Recent advances, challenges, current issues, or professionalization in the sector (March); Community resilience initiatives (mid-year); Risk/Reform/Resilience (October); and, Recent research in the field (November). These are all designed to support and inform the *National Strategy for Disaster Resilience*.

A typical Forum program is structured on formal invited presentations, including intrastate and international presenters, supplemented by facilitated discussions with session notes made available to participants. The unique community resilience Forums feature series of community-led initiatives as short showcase presentations. Eighty-six community-based presentations have been presented over the past four years.

Post Forum evaluations indicate a 96% highly satisfied or satisfied rating from participants. Feedback comments include: 'Chance to hear of interesting research we otherwise would not come across'; 'This was the best one yet. The diversity of people that attended illustrated that MUDRI is attracting the right people—the doers—to the Forums'; and, 'The audience was a nice blend of professionals and community which you don't often see. The audience was engaged. Overall I truly enjoy this forum'.

Case Study: Community based emergency management in Victoria

The Victorian Emergency Management Sector is supporting the development of a community based planning and engagement approach, to achieve the vision of building safer and more resilient communities.

This collaborative approach aims to assist communities, emergency management organisations, government, business, industry and non-government organisations to connect and support each other before, during and after emergencies.

The design reflects research and key learnings from a range of people and projects from within and outside the sector. This includes feedback and advice from locally piloted projects with a range of communities throughout Victoria in different settings.

Each pilot community was provided with the opportunity to work with a host organisation and facilitator, to develop locally tailored discussion and activities relevant to their community. With a view to identify and build on combined strengths, efforts were made to identify and better understand:

- The people who live, work and visit the community
- The assets, values and support systems of these people, including what they see as important
- The priority hazards and risks including the likely emergency scenarios that may affect the community
- What can be done, including what is already in place, what is considered acceptable and what can be improved
- The goals and actions to be completed by organisations, communities and organisations together, and the community themselves, and
- Opportunities to learn and work with others before, during and after times of need.

Evolving discussion and activities occurred in many different ways, at a pace that was reflective of changing community needs, competing priorities and sustained energy levels. This often stretched the typical organisational project management deadlines and outputs, toward being more flexible in achieving positive community based outcomes. It is therefore recognised that the development 'community based plans' through this approach may still be achieved as an output of the process, but not be reason to come together in the first place.

Coming together to build relationships and respectfully challenge each other to better connect and build on strengths, provides opportunities to create a deeper understanding of priorities and local partnerships to appropriately share responsibilities.

The development of a community planning and engagement approach in Victoria is therefore being designed to support communities and organisations to develop mutual goals that consider:

- Connecting people
- Gathering local knowledge
- Understanding hazards and risks
- Developing goals and solutions, and
- Ongoing learning, sharing responsibilities and continual improvement.

It is accepted that some of the benefits may only be realised after being tested in emergency situations. That said, it is also realised that this approach provides significant opportunities to integrate with broader community based processes and programs, as part of building a modern emergency management system in Victoria.

Priority Five: Empowering individuals and communities to exercise choice and take responsibility

Fundamental to the concept of disaster resilience, is that individuals and communities should be more self-reliant and prepared to take responsibility for the risks they live with. For a resilient nation, all members of the community need to understand their role in minimising the impacts of disasters, and have the relevant knowledge, skills and abilities to take appropriate action. A resilient community will understand and have the ability to use local networks and resources to support actions required during an emergency and to support recovery efforts. (The Strategy, page 10)

What has been done?

Work is underway between governments and local communities which seeks to ensure that individuals and communities are actively involved in decision making across the disaster resilience spectrum. This has included initiatives which have focused on improving the resilience of vulnerable sections of society, including Indigenous Australians, culturally and linguistically diverse communities, children and youth, the elderly and people with disabilities, as well as strategies for managing our volunteers.

Case Study: Tasmanian Fire Service – Community Protection Planning Unit

Community Protection Planning (CPP) is an innovative emergency management planning initiative which aims to improve community bushfire safety through addressing key elements of the Prevention, Preparedness, Response and Recovery spectrum.

The planning approach adopted by the CPP unit is a shift from the traditional doctrine of internal agency focus (i.e. simply building agency capacity to respond to emergency events) to a more community-centred focus. It undertakes emergency management planning as a consultative process that reflects local community values, builds community capacity and resilience, and better equips response agencies to effectively manage and prepare for emergency events. The initiative applies a risk assessment methodology to critically analyse community bushfire risk, and tailor risk treatments through protection plans, response plans and mitigation plans.

Community engagement is an ongoing and fundamental component of the planning process. For each protection plan, the local community is surveyed to ascertain what assets the community values the most and where community members are likely to shelter in a bushfire.

The survey sample size is carefully measured to ensure that results are statistically representative for the community. This quantitative data is analysed with local government, local brigades and community groups.

Case Study: Emergency Management Volunteer Leadership Training Project

Leadership at any level requires innovation, creativity, negotiation, improvisation and strategic vision. Today's volunteer leaders must negotiate a maze of relationships, networks and expectations to effectively lead in the volunteer environment. Leadership training for senior volunteers has historically focused on tactical and operational responses to emergency situations. More attention to prepare volunteers for leadership is a significant support to their volunteer roles.

In 2009, a project under the Australian Government's NEMP program was undertaken to identify and deliver appropriate training to meet the leadership needs of volunteers. A four-day Emergency Management Volunteer Leadership Training Program (VLP) was developed to focus on volunteer leadership skills in a multi-agency cross-jurisdictional environment. A pilot program with 25 volunteers from a range of emergency response and recovery organisations highlighted that a greater emphasis on learning in the work environment and setting goals for organisational change was required. Following the pilot program two courses were delivered by the former Australian Emergency Management Institute (AEMI) in 2009-10 and three in 2010-11.

In 2011, an off-campus module was tailored to build leadership skills for emergency management volunteers in rural and remote areas. Further training package enhancements were then developed through a train-the-trainer course. One of the great successes of the off-campus courses was that all volunteers accepted the challenge of delivering unfamiliar sessions such as 'emotional intelligence', 'dealing with conflict', and 'communicating in a crisis'. As a result, several went on to deliver this type of education within their own organisations as well as assisting in regular presentations at AEMI.

Case Study: Disaster Resilience in Multicultural Australia

Six Community Safety Action Guides have also been developed for culturally and linguistically diverse communities as pictorial alternatives to the existing English text Emergency Action Guides. The guides aim to help communities understand the risks associated with natural hazards that may occur in Australia and how best to be prepared to minimise any adverse effects. The guides cover: Storm, Flood, Earthquake, Cyclone, Lightning and Heatwave.

In March 2013, the pictorial guides received the 2013 Emergency Management Resilience Award at the Association of Public-Safety Communications Officials Australasia conference and expo in Adelaide. The award acknowledges projects and systems that build community resilience for dealing with emergency situations.

Through recognising differences in language and cultures, and designing appropriate communication tools, significant achievements have been made, ultimately creating new relationships, partnerships and increased engagement between the emergency management sector and our new citizens.

To view the Pictorial Action Guides please follow this link: www.em.gov.au/Emergencymanagement/communityengagement/Pages/Communitysafetyactionguides.aspx.

Case Study: Join, Learn, Be Ready

Join, Learn, Be Ready is a multi-agency volunteer recruitment and public awareness campaign designed to counteract the trend towards spontaneous volunteering by encouraging members of the Tasmanian community to volunteer for an emergency service agency now rather than during/after a disaster. The campaign presents a unified approach to volunteer recruitment across six of Tasmania's main emergency response and disaster recovery agencies, allowing members of the community to learn about the role different volunteers can play in emergency response and disaster management and request further information on those of particular interest.

The campaign includes posters, brochures, as well as two public service announcements for radio and two television commercials which have been aired regularly and continue to be promoted through social media. If people are unable to find a role that suits them, Volunteering Tasmania will attempt to find suitable roles in other community agencies using their Volunteer Connect matching and referral service.

Website: www.emergencyvolunteers.tas.gov.au

Case Study: ACT Multilingual Emergency Preparedness Guides

On 4 July 2015, the ACT Emergency Preparedness Guide was launched in multiple languages (ten) by the Minister for Multicultural Affairs, Yvette Berry MLA. The Guide was launched in conjunction with a special breaking of the fast event held across three prominent Islamic venues in Canberra as part of Ramadan.

Launching the Emergency Preparedness Guide simultaneously with the Ramadan event gave recognition that language barriers can impose an additional level of vulnerability in emergencies, and encouraged community solidarity in emergency situations.

Hard copies of the multilingual Emergency Preparedness Guide are available to migrant families on arrival in the ACT as part of a settlement pack. It provides vital information on the range of natural hazards that can impact the ACT and region, and what to do in an emergency situation.

The Guides are available in either hardcopy booklets or they can be downloaded from the following link: http://www.communityservices.act.gov.au/wac/community_recovery/grab-n-go-kits-languages

Case Study: CBR Bushfire Ready campaign

The CBR Bushfire Ready campaign piloted the doorknocking of residents in high risk bushfire prone areas in Canberra. From November 2014 to February 2015 the CBR Bushfire Ready campaign engaged over 4,000 persons face-to-face to help them understand their bushfire risk and encourage them to make informed decisions to prepare for bushfire.

The program brought together the strategic planning aspects of emergency management (as outlined by the ACT Strategic Bushfire Management Plan) and operational response areas within emergency service agencies to effectively work collaboratively to identify those most at risk to bushfire and build community resilience through targeted education.

An evaluation of the campaign indicated delivering preparedness messages face-to-face by a trusted source i.e. emergency service volunteers, has a positive impact on motivating people to prepare their homes and families for bushfire, and promotes a better understanding of bushfire risk.

When comparing those who were engaged face-to-face to those who weren't, the group engaged had a better understanding of their level of risk to bushfire. They felt more prepared, and their preparations were more in line with the advice provided by volunteer members.

Case Study: Port Neill Emergency Ready Committee

Port Neill is a small coastal town on the Eyre Peninsula in South Australia. A Bushfire Awareness Session was held in Port Neill during the summer of 2010/11. The session reminded residents that the local CFS Brigade has limited capacity, and other emergency support services are 40kms away in Tumby Bay. This concerned many residents who reflected on the devastating Eyre Peninsula bushfires of 2005. The town's relative isolation combined with an ageing population makes it particularly vulnerable to emergency hazards.

In 2011, the community based Port Neill Emergency Ready Committee was established, with many 'hands-on' strategies implemented. The committee worked with the local primary school to discuss evacuation plans that are now assisted by local residents. The local fire siren was reinstated to provide an early warning system. The Port Neill Hall was nominated as the emergency evacuation point and equipped with a fire protection system through the Premier's Community Initiative Fund. The Committee has also undertaken a desktop exercise with the emergency services.

The town is now also equipped with sandbags to enable an expedient local response during a flood event. It has established a telephone contact tree, and a roster to assist the evacuation of residents with a disability. The Committee has raised awareness of the town's emergency management plans with local organisations, and produced the 'Dunny Door' poster for all households with information and contacts for local emergencies.

Case Study: Be Ready, Cairns!

The Cairns region is vulnerable to natural disasters for many reasons. These include location, geography, high populations in low-lying areas, a transient resident base, high tourist visitation and the number of residents particularly at risk through age, disability, country of origin and income level. These most at risk communities have been the priority in a targeted public engagement program to grow disaster resilience by working together to share knowledge, raise awareness and develop self-management response strategies.

Specialised resources have been developed that are free and are available in hard and e-versions (except the Braille guide) from a wide variety of sources, such as all the region's libraries. Resources include:

- Auslan DVDs and YouTube clips for our two key cyclone publications
- Braille and talking book cyclone guide and talking book storm tide cyclone shelter guide
- Cyclone brochure in large print: 10 different languages tailored to local CALD communities and an easy-read version for people with communication difficulties. There have been several requests from other councils to adapt this for their own use
- Storm tide surge individual property search (internet) and maps (hard copy)
- One-one text messaging to identified individual residents with a hearing impairment/deafness to ensure they are aware of disaster events and information
- Multi-lingual radio warning messages on ABC, Cairns Community Radio and Bumma Bipperra Media (indigenous radio), and
- Billboard and regional bus advertising.

The success of the program was fully demonstrated through community preparation for and response to Tropical Cyclone Ita.

Case Study: Emergency Volunteering and Community Response to Extreme Weather (QLD)

The Emergency Volunteering and Community Response to Extreme Weather (EV CREW) service provides a tried, tested and innovative solution to the challenging area of managing and coordinating offers of assistance from spontaneous and pre-registered unaffiliated volunteers in disasters, to successfully support communities where there is most need. This service enables individuals and groups to participate in their local community's disaster prevention, response and recovery activities, fostering increased involvement and connectedness, resulting in increased participation as well as mass mobilisation efforts.

Volunteering Queensland in consultation and collaboration with many disaster agencies highlighted the need for an overarching system to manage the mass peaking of interest during disasters, resulting in the development of this service. EV CREW operates 365 days a year, has embraced real time technologies and maintains ongoing engagement with the tens of thousands of potential volunteers prepared to assist if needed in a disaster.

The service, an Australian first, registers the skills, availability, location and interest of spontaneous and preregistered volunteers to connect them with the needs of disaster agencies. Managing more than 120,000 offers of assistance and referring more than 30,000 potential volunteers to more than 70 agencies across Queensland, Volunteering Queensland's unique service has contributed to community response and recovery efforts. However, this has only been possible by strategic partnering, embracing adaptive technologies and maximising the use of willing, skilled volunteers.

This coordinated solution to the mobilisation and distribution of matched and briefed volunteers provides a central overarching system that allows the tracking of referred volunteers as well as a 365 day a year service where potential volunteers can:

- learn about the roles agencies perform in emergencies
- search for and view emergency volunteering opportunities
- view and apply for these compelling volunteering opportunities online and register with EV CREW

- learn about issues related to climate change and the impact disasters on local communities, and
- support the requests of key disaster management agencies and community groups which rely on volunteers

By supporting agencies to ensure they provide rewarding, safer and thoughtfully coordinated volunteering activities, they are able to accommodate the influxes of new volunteers, often with many volunteers choosing to repeat their experience and develop and affiliation with that organisation or they find a renewed interest community involvement, increasing civic engagement more broadly.

<http://emergencyvolunteering.com.au/home/volunteering/menu/what-does-the-emergency-volunteering-register-do>

Case Study: Volunteering Queensland – Step Up (Qld)

Volunteering Queensland’s Step Up program is a suite of separate but related projects that target a range of different communities. The program provides tailored information, education tools, and pathways to engagement and support mechanisms for individuals, leaders of community groups and organisations, business owners, young people and people who identify as Aboriginal or Torres Strait Islanders. The projects which make up the ‘Step Up’ program are:

- Business Roundtable Extend
- Aboriginal and Torres Strait Islander Community Resilience Building Project
- Emergency Volunteering Portal
- Youth Communications and Resilience Project
- Emergency Volunteering Community Workshops
- Natural Disaster Resilience Leadership Project, and
- Building Community Resilience and Volunteer Capacity for Disasters

National Disaster Resilience Program finance triggered the roll out of the Step Up—Building Queensland’s Resilience program back in 2010. Step Up has been widely regarded as Australia’s largest, dedicated community resilience building program led by a small non-government organisation. A strategic and programmatic approach, developed on a range of best practice community capacity building activities was a natural extension of the community resilience building work that Volunteering Queensland has been engaged in for decades, but also leveraged the learnings and expertise gained through Volunteering Queensland’s Emergency Volunteering—Community Response to Extreme Weather service (EV CREW).

Business leaders participate in capacity building, community engagement and resilience workshops throughout Queensland, thus strengthening economic development and increasing social capital, acknowledging business being an integral element of community, as employers as well as economic value adding entities. The project increases awareness of risk, the need for planning and preparation to better manage business interruption and has increased understanding, collaboration and connectedness with traditional business networks. In partnership with Telstra, Councils, Chambers of Commerce and many more, more than 70 local business leaders participated in capacity building and resilience workshops throughout Queensland. More than 800 participants have already been engaged throughout Queensland.

Priority Six: Reducing risks in the built environment

Having knowledge and understanding of hazards and risks is of little use unless the information can be translated into relevant controls and mechanisms for dealing with them. Planning approaches that anticipate likely risk factors and the vulnerability of the population can reduce future possible impact of disasters. Responsible land use planning can prevent or reduce the likelihood of hazards impacting communities. Building standards can mitigate the likelihood of loss of life, as well as damage to and/or destruction of property and infrastructure. (The Strategy, page 11)

What has been done?

Changes to building codes and improved building standards have been important control systems which have reduced risks in the built environment. The need to integrate natural disaster risk management into all aspects of the land use planning process is also widely acknowledged in the Enhancing Disaster Resilience in the Built Environment Roadmap. Jurisdictions are developing 'capability and investment plans' to assist in implementing the priorities set out within the roadmap, and are actively undertaking projects to progress the Roadmap's improvement areas.

Case Study: Building Resilience of Victoria's Critical Infrastructure

New arrangements to build resilience of Victoria's Critical Infrastructure came into effect on 1 July 2015. Victoria's Critical Infrastructure includes the assets, systems and networks necessary to maintain social and economic wellbeing. The new arrangements include:

- Changes to the Emergency Services Act 2013, which now includes Critical Infrastructure Resilience
- Regulations and Ministerial Guidelines to support implementation of the legislation
- Release of The Critical Infrastructure Resilience Strategy which details the vision, principles and strategic priorities
- Establishment of the Victorian Critical Infrastructure Register which lists all infrastructure assessed as vital, significant or major
- Transfer of responsibility for Critical Infrastructure to the Minister for Emergency Services and Emergency Management Victoria, and
- The establishment of a new Victorian Critical Infrastructure Model

Government and Industry Partnership

Building resilience requires partnership between government and industry and this is a key focus of the new arrangements. Formal engagement mechanisms are enshrined in legislation and the Strategy, and roles and responsibilities are clearly defined.

All Hazards Resilience Model

Victoria's Critical Infrastructure has moved from a focus on terrorism, to an 'All Hazards' resilience model including terrorism. This acknowledges that different hazards have similar consequences, and that Critical Infrastructure is frequently interconnected and interdependent.

Assessment of Critical Infrastructure

Victoria has recently developed the VicCat tool. This is a standardised criticality assessment methodology, assisting industry and government to assess the criticality of Victoria's infrastructure. Critical Infrastructure is assessed as either 'local', 'major', 'significant' or the highest category of 'vital', the latter three comprising the Victorian Critical Infrastructure Register.

Continuous Improvement

Critical Infrastructure assessed as 'vital' places mandatory obligations on owners and/or operators to complete a 'Resilience Improvement Cycle'. In addition, working together, industry and government will develop 'Sector Resilience Plans' which will provide the Victorian Government with the status of, and continuous improvement arrangements for each Critical Infrastructure sector's overall resilience.

Case Study: Supporting post disaster planning in flood affected communities Project

In Australia, floods cause an estimated \$377 million in damage each year. A project administered by the Planning Institute of Australia (PIA) under the NEMP grants program has now provided online on-demand access to information for local planners, particularly in rural and regional areas, that relate to flood effects and planning. Key components of the project were to develop and deliver web-based information and resources, seminars, video presentations from mentors, and easy access to other associated information. The program delivered four key elements: the online reference resource, a professional development seminar program, a networking and mentoring program, and outreach services.

The program is a valuable resource for planners looking for the latest concepts and tools to build community resilience to natural disaster events through mitigating the hazards of flooding. Content includes presentations by leading industry professionals who deal with building and planning in the fields of flood plain management.

The online resource base is on the PIA website (www.planning.org.au/policy/resilience) and links to a range of key national and international post-disaster planning resources.

Case Study: Flood Standard for National Construction Code

The Queensland Floods in 2010/11 resulted in 38 lives lost, 70 towns and 200,000 people affected, and a damage cost of around \$2.4 billion. In Brisbane alone around 20,000 houses were inundated. The Victoria floods in 2011 resulted in around 50 communities affected and 1700 properties inundated. NSW also experienced extensive flooding between 2010 and 2012. These terrible events reinforced the need for the Australian Building Codes Board (ABCB) to introduce appropriate provisions within the National Construction Code (NCC) to address the flood risk and minimise loss of life and destruction of buildings.

Australia's NCC sets out the minimum standards for building, plumbing and construction in Australia. With the implementation of the new requirements, the NCC now includes the improvement of the resilience of buildings and the safety of building occupants in flood hazard areas. While a Regulation Impact Statement (RIS) identified that the initiative would increase construction costs by \$216 million (present value over 10 years), the benefits of improved building resilience and occupant safety was estimated to be \$352 million (present value over 10 years); a net benefit to society of around \$136 million.

Relevant weblink: <http://www.abcb.gov.au/en/major-initiatives/building-in-flood-prone-areas>

Case Study: Floodengage

Floodengage is a new, innovative, online engagement focused decision support system that empowers the public (i.e. everyone including councillors, planners, engineers and the community) to learn about, prioritise and make considered decisions about floodplain management options for their local catchment.

The astutely designed interactive website operates by prompting the user to rate their importance of 10 value based questions encompassing social, safety, environmental, economic and political considerations. The system then utilises expert knowledge (organisational, heuristic and researched) within a corresponding matrix to order the most suitable flood risk management options based on the user's inputs. The user can then explore each options' pros and cons, re-order options (hopefully informed about their trade-offs) and then provide a submission to government. Application of the system in three NSW catchments generated 100 additional submissions, with these submissions more closely reflecting choices of learned flood managers.

The system has shown it can advance traditional consultation practice, effectively bridging the gap between decision makers (typically engineers in floodplain management) and the community.

Floodengage and its system is providing a foundation for the future development of numerous engagement focused decision systems in a range of engineering and non-engineering fields (including bushfire, landslide, coastal, tsunami, cyclone) that require collaborative, transparent and informed decisions in the realm of competing social, safety, environmental, economic, and political trade-offs.

Case Study: Corin Dam and Stockyard Spur Greenbreak

The 2003 Canberra fires burned all of the Cotter Catchment in a single event that, in combination with a significant rainfall event shortly after the fires, had a major impact on Canberra's water supply. Reducing the chance of the whole Cotter Catchment burning in a single wildfire event was identified as a priority in the ACT's Strategic Bushfire Management Plan (SBMP) version 2.

Constructing a new road in the Stockyard Spur area was originally seen as the preferred strategy for reducing the chances of fires that were burning in the Bendora Dam sub catchment from spreading to the Corin Dam sub catchment. However, an environmental impact statement prepared for the construction of this road identified that, if constructed, the road would have a significant environmental and social impact.

Upgrading an existing informal walking track in the area was identified as an alternative. This walking track, along with an adjacent 5-metre-wide zone in which shrubs were removed, was constructed in 2012 by ACT Territory and Municipal Services Directorate staff.

In 2013, this walking track was subsequently used as a control line for a prescribed burn that created a fuel-reduced area separating the Bendora Dam and Corin Dam sub catchments. In this way, the combination of upgrading the walking track and the subsequent prescribed burn can provide control lines for future suppression and back-burning operations and reduce the chance of both the Bendora Dam and Corin Dam sub catchments burning in a single bushfire event. This strategy is also important to help protect Canberra's water supply from bushfires.

Case Study: Prescribed burning in Namadgi National Park

Both the McLeod and Coronial inquiries into the 2003 Canberra fires recommended the creation of a 'fuel age mosaic' across the bush land areas of the ACT, which was incorporated into the previous Strategic Bushfire Management Plan (SBMP version 2). In 2013, the ACT Territory and Municipal Services Directorate (TAMSD) implemented the Smokers Trail burn, which at approximately 6000 hectares was the largest prescribed burn conducted in the ACT for more than 30 years. This burn contained a large number of fire-sensitive environmental assets, including alpine ash forest that was regenerating following the 2003 fires, sphagnum bogs, smoky mouse habitat, and the riparian zones of the upper Cotter River and Corin Dam.

Extensive planning by TAMSD and the ACT Environment and Planning Directorate (EPD) identified a comprehensive range of strategies to best protect these values. Burning under the right weather parameters provided differentials in fuel

moisture, which enabled surrounding vegetation to be burned at a time when the alpine ash and sphagnum bogs were too wet to burn. Remote area fire crews were available to suppress fires in the vicinity of environmental assets and construct firebreaks around some fire-sensitive environmental assets. Water bombing from helicopters suppressed fires that were threatening fire-sensitive environmental assets. These strategies protected the natural assets while continuing to implement the strategy of a fuel age mosaic across the bushland areas of the ACT.

Case Study: The Queensland Betterment Fund

The Queensland Betterment Fund funded jointly by the Queensland and Australian Governments under Natural Disaster Relief and Recovery Arrangements (NDRRA), was established in 2013 following Tropical Cyclone Oswald. This disaster event caused \$2.1 billion damage to many public assets that had been repeatedly impacted and restored following earlier disasters in 2011 and 2012.

Under the Fund, \$80 million was approved to allow assets to be built back better and to a standard that would be more disaster resilient, reducing risk to the community and reconstruction costs from future events. The Betterment framework significantly streamlined the process of eligibility, submission, assessment criteria for funding and distribution of betterment funds. Local governments around the State have been empowered to assess, plan and implement disaster recovery at the grass-roots level. This enables the facilitation of betterment works to begin as soon as possible following a natural disaster, therefore mitigating the impact on their local communities.

The \$80 million Queensland Betterment Fund has seen more than 230 projects with a total project value of more than \$170 million delivered. This included council contributions and NDRRA funding. A key test for the Betterment program is whether it leaves infrastructure and communities less vulnerable to the natural hazards of Queensland's climate. Already Betterment projects have withstood disasters in 2014 and 2015, including cyclones Ita and Marcia.

Gayndah Mundubbera Road

Gayndah Mundubbera Road was damaged in 2011 and rebuilt only to be damaged again in 2013.

The road is an essential freight and transport link for the North Burnett region, connecting the highly productive agricultural towns of Gayndah and Mundubbera. It also provides access for approximately 100 residents and local farmers including primary producers in the beef cattle, citrus, mango and grape industries. The road is used to freight produce from local fruit orchards to packaging sheds in Gayndah and for beef cattle primary producers to send their produce to market. It is also an important school bus route.

The Betterment project rebuilt and increased the resilience of the two-kilometre section of road adjacent to the Burnett River by relocating it uphill by up to 11 metres. New stormwater drainage works including concrete lined channels, culverts and scour protection were also utilised, improving functionality of the entire Gayndah-Mundubbera Road. The road was re-opened within three hours of the flood waters receding after Tropical Cyclone Marcia, with minor expenditure required in emergent works to clean up and remove debris. This compares with the road's closure for more than three months in 2013.

Case Study: Bushfire Attack Level (BAL) calculator

In conjunction with CSIRO, Queensland is developing a Bushfire Attack Level (BAL) calculator to assist in assessing development sites for bushfire hazard. The calculator forms part of the State's guidance material for bushfire hazards which aims to improve disaster resilience in land use planning. The guidance material includes a model development code and guidance for site assessments and bushfire protection plans.

The State guidance material requires BAL calculation in accordance with Method 2 of AS3959 (Australian Standard for construction in bushfire-prone areas). Presently there is no tool available that is user friendly, low cost for users, and that can be operated accurately by non-experts.

Via a web based platform accessed through a web browser, including on a hand-held device, the BAL calculator will allow non-experts to calculate BALs in accordance with AS3959 Method 2 at low or no cost. Inputs will be determined by the State Wide Bushfire Hazard mapping, and BAL outputs will be in line with the State's model code and guidance for bushfire site assessment.

Priority Seven: Supporting capabilities for disaster resilience

Disasters can stretch the capacity of our emergency services agencies and overwhelm communities. Development of remote community and industrial centres, extent of isolation, and reliance on emergency service volunteers all present challenges. We should, therefore, pursue greater flexibility and adaptability within our emergency services agencies and communities to increase our capacity to deal with disasters. (The Strategy, page 12)

What has been done?

All states and territories have benefitted from cost-effective capabilities built at the national level, as well as lessons learned and formal inquiries. Responses to disaster events have also assisted in evaluating capability levels. Each state and territory is responsible for emergency management capability development within its jurisdiction and have recently described and shared an overview of their jurisdiction operational capability through the National Capability Statement. *Exercise Apollo*, an element of ANZEMC's rolling three year exercise program, has also been undertaken to examine the role of senior decision makers involved in a mass casualty event with significant health consequences.

Case Study: Tasmanian Bushfire Recovery Taskforce

In January 2013, Tasmania experienced its worst bushfires in over 40 years. In South East Tasmania, over 300 properties were damaged or destroyed, and over 100 000 hectares of land were devastated. In order to respond to the bushfires, the Bushfire Recovery Unit (BRU) was established within the Tasmanian Government to support the Taskforce in its role of coordinating and supporting the recovery of the community. The primary role of the BRU was to support the impacted communities to recover by utilising a range of community development and engagement initiatives to ensure that they were informed about the range of support measures to assist their recovery and build resilience, and had ownership of their recovery.

Community engagement methods included:

- the establishment of a service hub in the community, staffed by locals, that provided a direct link between the community and the BRU
- the celebration of recovery milestones
- the use of newsletters, websites, and other channels for the distribution of information, and
- the establishment of local information sources.

The success of the recovery effort was assessed through a free form survey that asked community members to identify, in their own view, what they considered to be the most important aspect of the recovery process. Responses were categorized according to themes, with the sense of community and information availability highlighted by the community as the most important contributors to success. A survey of a representative sample of 302 directly and indirectly affected community members showed that 'community spirit—assistance and support' rated highest in terms of positive aspects of the recovery process, while 'information availability' rated second highest.

Further information is available from

<http://www.bushfirerecovery.tas.gov.au> and http://www.dpac.tas.gov.au/divisions/osem/transition_report

Case Study: Kingborough Council

Community Resilience Kingborough is an initiative that has shifted Kingborough Council from planning for the community to an organisation that now plans with the community. In 12 months the initiative has seen the Council:

- form a restructured emergency management committee (with the majority of members being from the community)
- implement a community resilience and emergency management policy
- implement a photography competition
- create a temporary emergency management drop-in site
- collaborate with the University of Tasmania, and
- undertake a suite of successful engagement practices.

Kingborough is the only Tasmanian council to have a majority community representation on the emergency management committee (EMC) and adopt a specific 'Community Emergency Management Policy'. Kingborough Council also created the Resilient Kingborough website, which is intentionally separate from the Kingborough Council website to promote community ownership.

A number of resources about risk and resilience were generated throughout the project and made available in numerous locations including the library, council buildings, online, during the community drop-in site and at the Love Living Locally Expo. Examples of emergency kits were also displayed at the expo, library, council building and drop-in centre.

Case Study: City of Bunbury, Western Australia – 'Are U ready- 4-72 hours'

In 2004, the City of Bunbury secured a funding grant to undertake an extensive, community-based ERM project that involved a broad range of agencies, groups and individuals from the community. Bunbury's ERM project won national acclaim when it converted good theory to practice and returned an extremely usable product at a local community level that worked to reduce risks to the community.

Through the U-4-72 project, the City has built an understanding of, and responsibility for, emergency management within Bunbury's population so that all people in the diverse community can confidently participate in emergency management planning and decision-making processes.

U-4-72 aims to:

- "switch people on" to the reality that they could conceivably have to rely on themselves for up to 72 hours in the event of a major disaster or emergency
- encourage people to take responsibility for their own preparedness and take real steps to be ready, regardless of the hazard
- engage local people to create a groundswell of local action that builds the capacity of people to act independently, and
- create a culture in the community that makes emergency preparedness the norm.

The City hopes to encourage people to become "switched on" to preparedness. Most significantly, the City maintains it makes the community more resilient to adverse events because they are more connected and prepared physically, socially and psychologically. U-4-72 will increase the resilience of people so that they have the ability to rebound from a disaster with a new focus on recovery.

Case Study: The Common Operating Procedure

With advancements in mobile computing abilities and faster mobile data communications, the ACT ESA has been able to embark on several technology solutions to assist the mobile workforce.

An example of such work is the state-of-the-art ESA Common Operating Picture (COP), developed in-house by the ESA Spatial Services section. Situational awareness of on-ground commanders has been enhanced by overlaying real-time, dynamic data layers of emergency vehicle fleet locations, detailed incident information and weather observations into a live Google Map.

This capability can be deployed in the field and uses wherever possible 'off the shelf' technology. This internal ESA system is available to frontline ESA personnel depending on their role in managing incidents.

Looking Ahead: Future areas of focus

Looking ahead, to ensure that we continue to achieve the priority outcomes of the Strategy, more targeted effort is required. The Review of Implementation of the Strategy not only identified where work has been done, but it also identified a number of key themes that would benefit from a more targeted effort.

Measurement, Evaluation and Strategic Priority Setting

Measuring and evaluating the impact of disaster resilience projects, programs and policies is key to better understanding their utility and impact, to identify impediments to implementation, and for establishing future priorities. There is a need to undertake more systematic evaluation and performance measurement to determine whether individual bodies of work and overall implementation of the Strategy is contributing to improved disaster resilience, and to use this information to inform future priority setting and decision making.

Improving Cross-Sectoral Partnerships

Sustained and effective partnerships are essential in realising the principal of 'shared responsibility'—that all sectors of society, including individuals, all levels of government, business and the non-government sector take collective responsibility for understanding and managing disaster risks. Future focus will be on developing meaningful partnerships between governments and stakeholders outside the traditional emergency management governance structure, such as with local government, the private sector and non-government organisations.

Improved Community Engagement

Localised, grass roots initiatives that are targeted and tailored for specific communities have proven to have the most positive impact and are effective at building community resilience. Acknowledging that no one community is the same, focus will be to build on successful community engagement initiatives and use lessons learned to explore how to implement more broadly.

Enhanced Resilience in the Built Environment

Enhancing resilience in the built environment can reduce the likelihood of hazards impacting communities by decreasing our exposure and vulnerability. There is a need to continue to promote and drive a level of momentum in implementing the Enhancing Disaster Resilience in the Built Environment Roadmap. This should be done through building on existing relationships, forging new relationships, sharing best-practice approaches across jurisdictions and facilitating regular and constructive engagement between emergency management, planning, building and infrastructure agencies.

Better Risk Awareness and Mitigation

Access to transparent, accurate and trusted sources of information about disaster risk is essential to inform robust risk assessments. Making sure that those risk assessments are easily accessible and understood, in particular by decision makers, is also crucial to ensure that stakeholders make informed judgements and act in the face of extreme weather and natural disasters. Future focus will be on identifying the information needs of different stakeholders, tailoring risk information to different end users and making a stronger case for mitigation investment with key decision makers.

Improved Capabilities for Disaster Resilience

All states and territories have benefitted from cost-effective capabilities built at the national level, as well as lessons learned from exercises and formal inquiries. Responses to disaster events have also assisted in evaluating capability levels. However it will be important to reduce the ad-hoc nature of capability development, and build an understanding of capabilities that can be drawn-upon across jurisdictions and from other countries. It is also important to consider capability needs for those less likely events that have catastrophic consequences, and stretch our normal systems, processes and capacity. There is an opportunity to better link jurisdictional risk assessments to capability development to ensure that we have the capabilities to adequately address the disaster risks identified.

Glossary of Acronyms and Terms

ANZEMC	Australia-New Zealand Emergency Management Committee
CALD	Culturally and Linguistically Diverse
CDSC	Capability Development Sub-Committee
CESC	Community Engagement Sub-Committee
COAG	Council of Australian Governments
CPP	Community Protection Planning
CRIP	Community Resilience Innovation Program
ERM	Emergency Risk Management
ESA	Emergency Service Agency
LCCSC	Law Crime and Community Safety Council
LUPBC	Land Use Planning and Building Codes Taskforce
NCCTRC	National Critical Care and Trauma Response Centre
NERAG	National Emergency Risk Assessment Guidelines
PIA	Planning Institute of Australia
PPRR	Prevention, preparedness, response and recovery
RAMMS	Risk Assessment, Measurement and Mitigation Sub-Committee
RSC	Recovery Sub-Committee
SEMC	State Emergency Management Committee
SPOT	Single Point of Truth
TrackMi	Tracking System for Major Incidents
U-4-72	Are U ready—4-72 hours
VLP	Volunteer Leadership Program
ZERMS	Zone Emergency Risk Management System

Appendix 1



Australia-New Zealand Emergency Management Committee (ANZEMC)

The ANZEMC works to strengthen disaster resilience by providing strategic leadership on emergency management policy through supporting related capability and capacity development activities. It is a high-level body comprising representatives from the Commonwealth of Australia, State and Territory Governments, the Australian Local Government Association and New Zealand, and reports to the Law, Crime, and Community Safety Council. A number of sub-committees sit within the ANZEMC and these are outlined below.

Capability Development Sub-Committee (CDSC)

The role of CDSC is to support ANZEMC by fostering and focusing strategic nation-wide whole-of-governments emergency management capability development. Its functions are to:

- Set annual strategic focus areas for national emergency management capability development, in collaboration with ANZEMC Sub-Committee Chairs and Deputy Chairs, to provide a whole-of-nation focus.
- Identify gaps and develop recommendations on whole-of-governments emergency management capability for ANZEMC consideration and/or endorsement.
- Facilitate the effective exchange of best practice, research, policy and information on national and international issues relating to national emergency management capability.
- Engage with other national Sub-Committees, working groups, reference groups and other stakeholders, including the private sector and non-government organisations, as required.
- Undertake activities as directed by the ANZEMC.

Community Engagement Sub-Committee (CESC)

The role of the CESC is to support ANZEMC by fostering and focusing strategic nation-wide whole-of-governments emergency management community engagement. Its functions are to:

- Set annual strategic priorities for national emergency management community engagement, in collaboration with ANZEMC Sub-committee Chairs and Deputy Chairs, to provide a whole-of-nation focus.
- Develop the CESC work plan.
- Identify gaps and develop recommendations on whole-of-governments emergency management community engagement for ANZEMC consideration and/or endorsement.
- Facilitate the effective exchange of best practice, research, policy and information on national and international issues relating to national emergency management community engagement.
- Engage with other national Sub-committees, working groups, reference groups and other stakeholders, including the private sector and non-government organisations, as required.
- Undertake activities as directed by the ANZEMC.

Recovery Sub-committee (RSC)

The role of the RSC is to support ANZEMC through the development and promotion of holistic disaster recovery policy and planning consistent with the National Principles for Disaster Recovery. Its functions are to:

- Provide advice to the ANZEMC on national disaster recovery issues and priorities and undertake activities as directed by the ANZEMC.
- Develop a two year national work plan that identifies priority projects and programs to be approved by the ANZEMC.
- Facilitate the effective exchange of practice, research and information on national and international issues relating to disaster recovery.
- Where appropriate develop national policy on disaster recovery, including financial arrangements, for ANZEMC consideration and/or endorsement.
- Ensure alignment with, and engage other sub-committees, working groups, reference groups and other stakeholders dealing in national recovery issues as required.

Risk Assessment, Measurement and Mitigation subcommittee (RAMMS)

The role of RAMMS is to support ANZEMC through the management and understanding of disaster risk by developing national approaches to risk assessment, measurement and mitigation. Its functions are to:

- Advising the ANZEMC on disaster risk assessment, measurement and mitigation issues and priorities relating to disasters in Australia.
- Progressing relevant priorities and actions identified under the National Strategy for Disaster Resilience.
- Undertaking activities as directed by the ANZEMC.
- Where appropriate develop national policy on risk assessment, measurement and mitigation for ANZEMC consideration and/or endorsement.
- Engage with other ANZEMC sub-committees, working groups, reference groups and other stakeholders, particularly the National Flood Risk Advisory Group, to ensure consistency in approach, efficient application of resources and appropriate collaboration on national initiatives.
- Facilitating the effective exchange of practice, research and information on national and international issues relating to risk assessment, measurement and mitigation.

Land Use Planning and Building Codes Taskforce

The Land Use Planning and Building Codes Taskforce support ANZEMC through continued implementation of the *Enhancing Disaster Resilience in the Built Environment Roadmap*.