



2018

STRATEGIC DIRECTIONS
ACHIEVEMENT REPORT

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AFAC Limited (ABN 52 060 049 327)

Level 1, 340 Albert Street
East Melbourne Victoria 3002

Telephone: 03 9419 2388

Facsimile: 03 9419 2389

Email: afac@afac.com.au

Internet: www.afac.com.au

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| From the CEO

It is my pleasure to provide the annual Australasian Fire and Emergency Services Authority Council (AFAC) Strategic Directions Achievement Report for 2017-18.

The Strategic Directions provide guidance to fire and emergency services to ensure activities focus on supporting resilient communities, trusted response, credible and timely information, effective governance and research utilisation. They ensure emergency management agencies are positioned to better meet the challenges of changing community needs and expectations, an ageing, growing and diverse population, climate change, natural disasters, national security and organisational change. Effective management of fire and emergency services to address these challenges will lead to greater community confidence, trust and support.

This 2017-18 Report delivers in the same format as last year. Through case studies, it demonstrates the work that has been completed in the last 12 months by all jurisdictions in conjunction with AFAC members and our partner agencies. Included is just a sample of initiatives that have been undertaken and is not an exhaustive list of all work relating to the Strategic Directions. Together these initiatives support a more disaster resilient Australia by demonstrating a level of national capability based on operational readiness, lessons management, research utilisation and underpinned by the most current qualifications and standards available.

The work undertaken by AFAC and its members goes to the heart of the overarching principles articulated in the Strategic Directions (Primacy of Life, Trust and Confidence, Interoperability and Accountability).

The Strategic Directions have become fundamental to the work of fire and emergency services. A shared commitment, a unified vision and focus in achieving the Strategic Directions will ensure our sector is well placed to serve our communities as we progress forward.

I extend my thanks and gratitude to all AFAC members and other emergency management agencies across the industry for their commitment and collective achievements during the year.



Stuart Ellis, AM
CEO AFAC 2018

Background

Strategic Directions for Fire and Emergency Services in Australia and New Zealand 2017–2021 was endorsed by the Australia-New Zealand Emergency Management Committee (ANZEMC) and the Law, Crime and Community Safety Council (LCCSC) in 2016.

The Strategic Directions consist of five priority areas that reflect a shared vision and joint commitment to safe and secure communities in Australia and New Zealand.

The five strategic directions are:



1. Supporting resilient communities through risk reduction



2. Providing trusted response and facilitating the transition to relief and recovery



3. The source of credible and timely information



4. Effective governance and resource management



5. Informed by knowledge and research

The expectation within the AFAC National Council is that the Strategic Directions will be considered in the development of each agency's strategic plan. Together with states and territories and the Australian and New Zealand Governments, the priorities are shaping the future of emergency management.

AFAC is proud to present the Strategic Directions Achievement Report 2018 to Ministers who have responsibility for law, policing and emergency services. This report provides examples of industry and jurisdictional activities in support of the Strategic Directions.

AFAC expresses gratitude to all members and affiliate members for their commitment to delivering the 2018 Strategic Directions Achievement Report.

AFAC acknowledges the staff within agencies who shared their own case studies. In our first report, this included examples from South Australian Country Fire Service, Department of Fire and Emergency Services, WA, NSW State Emergency Service and Tasmania Fire Service. These contributions have ensured the results are wide-ranging and reflective of the work undertaken by the fire and emergency services industry.



QFES increases trust and engagement with new arrivals to the Toowoomba region by hosting and attending community events.
Credit: QFES

DIRECTION 1:

Supporting resilient communities through risk reduction



The *National Strategy for Disaster Resilience* highlights the collective responsibility of all sectors of society including governments, business, communities and individuals.

The industry is well aware of the inherent disaster risks and the need to provide advice, education and information to communities to mitigate those risks. Once policy, planning decisions, construction options, compliance requirements and individual choice have been determined, the focus turns to preparedness and risk reduction with and for the community. At the same time the industry has a standing capability for response to any residual risk, should an emergency still occur.

The industry is not solely responsible for reducing risk or creating resilient communities, but it does share the collective responsibility for supporting the achievement of these goals. This is delivered through a range of risk management and mitigation services specifically designed to help communities better understand risk, empowering them to take appropriate action to mitigate and manage it.

A range of approaches and strategies are utilised to enhance public safety. These include community education, community engagement, community development, partnership development, legislation, Codes and Standards, influence and advocacy for innovation and improvements and broader risk mitigation activities and initiatives.

A fundamental goal of this work is to build a sense of shared responsibility with the community by encouraging individuals to exercise choice and take responsibility, thereby reducing their reliance on fire and emergency services.

Fire and emergency services contribute to resilient communities through:

Non-conforming Building Products

Initiative Driver: Fires internationally and in Australia involving non-conforming building products, including combustible cladding, have a significant impact on fire and emergency services. The 2014 Lacrosse fire in Melbourne, fires in the Middle East and the 2017 Grenfell Tower disaster in London have prompted widespread action across multiple sectors.

Aim: Together with member agencies, AFAC has been addressing the issue of non-conforming building products by:

- lobbying for better regulation and greater awareness
- influencing Standards and Building Codes for greater community and firefighter safety
- actively collaborating on jurisdictional taskforces, research projects and initiatives to assess and mitigate the risk in buildings.

Features: Proactive steps are being taken by AFAC, its members and the wider fire safety sector to address current risks related

to non-conforming building products and reduce the risk on future building stock.

AFAC provided a submission to the Senate Inquiry into Non-Conforming Building Products and called on Senators to recommend greater clarity, simplicity and consistency across all States and Territories regarding building material certification, compliance and regulatory enforcement.

In addition, AFAC and its members influence the National Construction Code and relevant building Standards for improved fire safety outcomes. Fire agencies participate on jurisdictional cladding taskforces, providing expert advice and input into risk assessments and mitigation opportunities.

Outcomes: The impact of this initiative is ongoing and will deliver improved safety outcomes for all Australian and New Zealanders living and interacting with the built environment, as well as firefighter safety through the development of shared doctrine.

Residential Fire Sprinklers (Home Fire Sprinkler Coalition)

Initiative Driver: Residential fires are burning faster and creating increasingly toxic smoke due to modern furnishing materials. The 2012 Bankstown Fire Coronial Report recommended fire agencies find a solution to introduce fit-for-purpose and cost-effective residential fire sprinklers for Class 2 and Class 3 buildings under 25 meters.

Aim: The aim of the residential fire sprinklers initiative is to increase the uptake of sprinklers to reduce risk and improve life safety for both the community and firefighters.

Features: Research led by Fire and Rescue NSW in partnership with AFAC, Fire Protection Association (PFA) Australia and CSIRO demonstrated the effectiveness of residential fire sprinklers fed from domestic and installed hydrant water supplies. With

sprinklers operating, the rooms did not reach flashover and had significantly increased time for safe egress. When no sprinklers were used, the room reached a peak temperature of 918°C in just two minutes and 45 seconds.

The research allowed the partnership to develop a Proposal for Change (PFC) to the National Construction Code (NCC) 2019 draft. AFAC and FPA Australia have partnered to create the Home Fire Sprinkler Coalition, a national advocate to promote the life-saving value of home fire sprinkler protection.

Outcomes: By advocating for fire sprinklers to be installed in residential homes, this initiative will have a significant impact on the life safety of the community and fire agencies.

Smoke Alarm Research

Initiative Driver: Functioning smoke alarms in homes remain the primary means of alerting people to fire, but their effectiveness in the modern home has been questioned concerning the type and location of smoke alarms used.

Aim: To review the effectiveness and role of smoke alarms in modern homes.

Features: The research was led by Fire and Rescue NSW and supported by CSIRO, AFAC and the Australian Building Codes Board.

The research determined that fires in modern homes spread in less than five minutes compared to fires in older homes (built between 1950-70) which took around 29 minutes to spread. This demonstrates that modern residential buildings and furniture are more flammable and leave less time for

people to evacuate safely in the event of a fire. The life safety of occupants would benefit significantly from the installation of residential fire sprinklers and smoke alarm systems.

The research found that there is not one clear type of smoke alarm technology that performs better in all situations. The effectiveness of smoke alarms is less reliant on technology, and instead determined by the number of smoke alarms used, their location and the interconnection between units. Alarms in all bedrooms, living spaces and hallways ensures that if one alarm detects smoke, all alarms will activate.

Outcomes: This research allows AFAC and its members to review and contemporise their position on residential smoke alarms based on research and evidence. AFAC is currently updating its Residential Fire Safety Doctrine together with the Smoke Alarm Guidelines.

Targeted and Focused Engagement Strategy

Initiative Driver: The communities of Toowoomba and surrounding areas are very diverse and comprise of a considerable number of refugees and migrants from around the world.

Aim: Encourage the building of relationships between Queensland Fire and Emergency Services (QFES) staff, new arrivals and the broader multicultural community by increasing understanding of the roles of QFES and other emergency services, including the Queensland Police Service (QPS), and how they support their communities.

Features: A Memorandum of Understanding is in place between QFES and Multicultural Development Australia to formalise and commit to the ongoing relationships and activities.

The initiatives undertaken in conjunction with QPS are a targeted approach to build and maintain relationships between emergency services, multicultural and family support agencies and culturally diverse community members.

QFES is committed to participating in regular community activities including the Toowoomba Refugee and Migrant Support Group, the Toowoomba TAFE English as a Second Language Class, Cultural Diversity Network Meetings and youth soccer games to share messages around storm season and fire season, fire safety and career paths. SafeHome visits have also been tailored for migrants and refugees when they first settle in the Toowoomba area. The activities aim to break down perception barriers about uniformed services and personnel by building trust between community members and services.

Outcomes: There is clear evidence that staff and volunteers actively support diversity initiatives and events to minimise the impact of identified barriers. Community members who have engaged previously with emergency services continue to engage at other events by bringing along family and friends.



5 Minute Fire Chat

Initiative Driver: Having a plan of what to do in the event of a bushfire remains important, but research has found that of the 68 per cent of people with a bushfire plan, only nine per cent have written it down and only eight per cent have rehearsed it.

Unwritten plans may involve actions such as a family discussion about what to do in the event of a fire, including decisions on evacuation routes and assigning actions and preparations around the home. These plans may be more achievable than a written plan and could help those who find decisions too difficult and complex.

Aim: The project aims to create planning tools that increase the number of people discussing what to do if a bushfire threatens their area and improving their level of preparedness through easy-to-use tools.

Features: Fire Chat asks three questions: When will you know to leave? Where will you go? Which way will you go? Fire Chat allows families, friends and neighbours to have conversations regarding their plans in the event of a bushfire. Using thought-provoking questions, residents are directed to their bushfire preparation toolkit that groups information in easy to follow steps.

Outcomes: Previous material left residents overwhelmed with the volume and detail of information, resulting in disengagement with the safety information. Fire Chat was well received by volunteers and individuals living in bushfire risk areas and has led to greater engagement with the safety information.

YOU CAN'T OUTRUN IT, OR OUTLAST IT.
SO TAKE 5 MINUTES TO OUTSMART IT.



Government of Western Australia
Department of Fire & Emergency Services



ARE YOU
BUSHFIRE
READY?

DIRECTION 2:

Providing trusted response and facilitating the transition to relief and recovery



The practice of emergency management incorporates the framework of Prevention, Preparedness, Response and Recovery (PPRR), underpinned by the principles of risk management – where the risks to life, property and the environment from a range of hazards are identified and appropriate measures taken to address them.

Fire and emergency service agencies provide the best incident management services. This includes responses before, during and after the event, expert advice and advocacy for community safety outcomes.

Through the shared commitment by the industry to provide a trusted response, practitioners and technical experts are working to review and develop a new operational doctrine outlining the method for the provision of incident and disaster management and interoperability. They foster and promote the sharing of case studies, emanating from the delivery of their services. There is a commitment to undertake analysis of emerging trends and to provide advice and guidance on information and data requirements to best capture agency activities and performance.

There is a strong focus, in this and other Strategic Directions, on incorporating knowledge and research into the practice of emergency management. It is important that such research is available so that practitioners and technical experts can keep pace with contemporary expectations and requirements.

Associated with this Direction, AFAC and several of its member agencies have a long-standing partnership with the fire and emergency service organisations in Pacific Island countries.

Fire and emergency services reliably respond when required by:

National Resource Sharing Centre – Canadian Deployment

Initiative Driver: In July and August 2017, the Canadian Interagency Forest Fire Centre (CIFFC) in Winnipeg, Canada made four formal requests to the National Resource Sharing Centre (NRSC) in Australia to coordinate the deployment of an Australian contingent to support ongoing firefighting operations. This contingent included Inter Agency Resource Representatives (IARR), Agency Representatives (AREPS), Incident Management Team personnel, specialist roles and a large number of Type 1 arduous fire fighters.

The Commissioners and Chief Officers Strategic Committee (CCOSC) authorised the deployment of 235 Australian personnel to Canada over a three-month period to provide support and relief to Canadian crews. The personnel deployed to Canada were resourced from agencies across every State and Territory in Australia through the NRSC.

Aim: That the NRSC provide central coordination support to an Australian contingent of fire and emergency services personnel deployed internationally to Canada.

Features: The NRSC worked closely with the CIFFC to coordinate and manage the deployment. The NRSC was greatly supported by key roles seconded by Australian agencies and the Operational Hubs of NSW Rural Fire Service and Emergency Management Victoria.

Outcomes: The CIFFC expressed strong support and preference for the NRSC approach, supported by the Operational Hubs, as a central point of contact for Canadian and Australian participants. Debrief feedback suggested that a similar approach and support arrangements be recommended for future international deployments.

Night Firebombing Trial using Night Vision Technology – Emergency Management Victoria

Initiative Driver: Night-time aerial firebombing has the potential to significantly improve Victoria's firefighting capability, better protect life, property and significant infrastructure during major bushfires and continue fire containment work carried out during the day.

Aim: To lead an innovative, national trial and better understand how day firebombing operations can be expanded into the night and established as a safe system of work. The trial would test the ability to hover-fill helicopters at night and test the efficiency of night vision technology, including infrared systems and night vision goggles.

Features: The Australian-first trial involved two operators, Coulson Aviation and Kestrel Aviation, who both provide day firebombing services to Victoria. Each demonstrated how helicopters can work at night to hover-fill and ground-fill, before

performing several water drops in the forest and on a series of controlled burns in grassland.

The sequence of night operations tested the use of night vision technology, infrared systems and night vision goggles and was successful in every aspect.

Outcomes: The Civil Aviation Safety Authority has approved operators Coulson Aviation and Kestrel Aviation to undertake night aerial fire suppression operations in Australia.

The approvals mean that Victoria, on behalf of other states and territories, can continue to work through the implementation of night fire suppression, particularly its integration into current firefighting practices in a safe and effective way. Victoria is now focussed on implementing night firebombing ahead of the 2018-19 summer season.

AFAC Urban Search and Rescue (USAR) New Zealand Exercise

Initiative Driver: A report released by the Wellington Region Emergency Management Office in 2017 identified that a major earthquake could split the city into a number of non-interconnected regions. These distinct regions would all require USAR and humanitarian support, most likely requested from Australia and internationally.

Aim: To provide a unique and cost-effective opportunity to engage with key New Zealand stakeholders responsible for the receipt and management of Australian USAR capabilities in the event of a major earthquake in Wellington, New Zealand.

Features: The table top exercise was held over one day, with a further half-day to review discussions and develop recommendations. The scenario was based on an earthquake of significant magnitude impacting Wellington and its surrounds

and causing widespread structural damage and geographical dislocation.

Outcomes: The major benefit of the discussion exercise was the participation of key New Zealand agencies that would be critically involved in the request, receipt and management of Australian USAR capabilities. The exercise built on the recent AFAC National USAR Instructors Workshop (that reports to the AFAC USAR Technical Rescue Group) recently held in Auckland.

The exercise also supports Fire and Emergency New Zealand in current preparations for its 2020 INSARAG Reclassification as a heavy USAR team. An exercise report identified the priority considerations and actions for key stakeholders to consider as part of reflecting or reviewing current arrangements and processes.

Commonwealth Games – Capability and Capacity Strategic Plan

Initiative Driver: In support of the 2018 Commonwealth Games, Queensland Fire and Emergency Services (QFES) developed an operational pre-planning document that considered contingency planning for the duration of the Games event.

Aim: To prepare QFES for the possibility of a major event occurring simultaneously with the 2018 Commonwealth Games.

Features: In preparation for the Games duration, QFES developed a Capability and Capacity Strategic Plan (CCSP). This plan was in response to the QFES requirement to gather resources from across the state to ensure an adequate response to potential concurrent events.

This plan included an operational timeline that highlighted QFES capacity limits and trigger points for requesting interstate assistance from the National Resource Sharing Centre (NSRC) through the Chief Officers and Commissioners Strategic Committee (CCOSC).

Outcomes: Successful contingency planning occurred both on a state and national level. It provided several options that explored the viability of sustained operations for single, double and multiple disaster scenarios and identified the level of sustainability for each scenario. An approach through the NRSC has now been established for future operational continuity planning during large scale irregular events.

National Resource Sharing Centre (NRSC) Team Deployment Registry

Initiative Driver: Following the largest ever Australian deployment of fire and emergency services personnel to Canada in 2017, the Commissioners and Chief Officers Strategic Committee (CCOSC) endorsed a concept brief for the National Resource Sharing Centre (NRSC) to investigate and establish a national deployment registry to improve the ability to coordinate, mobilise and deploy resources internationally in a timely manner.

Aim: The NRSC established the registry database with priority given to ensure the NRSC Team Registry product was ready to launch by June 2018 in preparation for potential requests for assistance during the international wildfire season.

Features: The configuration of the Registry database is based on Emergency Management Victoria's Team Deployment Manager concept, developed in cooperation with the vendor

iLD Consulting. The database creates a secure environment for interested personnel to put forward an Expression of Interest for international deployment.

Personnel enter all required information (including medical, next of kin, passport and licence data) until they reach a 'deployable stage'. This information is reviewed to confirm capability and each applicant is either approved or rejected for deployment. This allows a pool of 'deployable' personnel to be created for any deployment.

Outcomes: The project's first phase ensured the NRSC and Operational Hubs of NSW Rural Fire Service and Emergency Management Victoria were trained and ready to support AFAC member agencies across jurisdictions to build an internationally deployable team using the NRSC Deployment Registry.



The Elephant Hill fire in British Columbia was one of many fires attended by Australian personnel during their 2017 Canadian deployment.

Credit: Paul Simakoff-Ellims

DIRECTION 3:

The source of credible and timely information



Fire and emergency services are committed to providing credible and timely information to enable individuals and communities to make appropriate and informed decisions. Response by emergency services is not always possible, particularly during natural disasters when the scale of the emergency may overwhelm response efforts.

To address this, the industry has focused on the development of new operational capabilities to keep the community well informed before, during and after events, acknowledging that this output is as important as operational response.

Technology is maximised, including data and provision to mobile devices, to rapidly advise and warn the community about emergencies that are likely to impact them. New technologies support dispatch of resources in a more timely and efficient way.

Working closely with other agencies such as the Bureau of Meteorology, the industry incorporates predictive forecasts, warnings and available intelligence, including local knowledge and historical information, to develop warnings messages that identify the likely impact of the hazard on communities. The intent is to provide consequence-based warnings, inclusive of key safety messages and recommended actions to increase community preparedness prior to and during the emergency.

This is underpinned by the investment from the industry in the development of predictive models which can provide the best available advice based on existing information.

Fire and emergency services provide credible and timely information by:

New South Wales Post Fire Research

Initiative Driver: In early 2017, NSW experienced significant periods of fire danger with large parts of the state subject to catastrophic fire danger ratings. Several large and dangerous bush and grass fires impacted on communities. Following the fires, the NSW Rural Fire Service (RFS) sought to better understand the level of community preparedness and connectedness, how warnings were consumed and the actions people took after receiving a warning. The research was conducted through the Bushfire and Natural Hazards Cooperative Research Centre.

Aim: To better understand community preparedness and how people respond to fire and warnings. The research has helped refine and establish a number of community engagement initiatives, such as targeted programs for farming communities and the new Rural Liaison Officer program. The research also

informed a review of standard messaging and warnings and is contributing to other national initiatives.

Features: The research conducted in three rural locations (Sir Ivan fire near Coonabarabran and the Carwoola and Currandooley fires in southern NSW) found warnings were easy to understand, up to date and useful. Those interviewed expressed a preference for highly localised information. Despite the significant danger posed by the conditions, the research also found most people who intend to leave will wait until there is a fire.

Outcomes: The research provided valuable insight into community preparedness and has been used to refine community engagement approaches and the construction of warning messages.

Predictive Services Strategy

Initiative Driver: In 2015, AFAC Council identified the development of predictive services capability within the sector as a high priority.

Aim: To provide repeatable, reliable, science based, authoritative and consistent predictions that improve the safety of communities and responders across Australia and New Zealand.

Features: With an initial focus on bushfire, AFAC Council established a Predictive Services Group in 2016 to facilitate the ongoing development of a predictive services decision to support the capability for AFAC member agencies.

Outcomes: Significant outcomes have already been achieved by Predictive Services Group in improving bushfire capability over the last two years, including:

- supported evaluation of fire spread simulators
- strategic direction to National Fire Danger Rating System program and Bushfire Fuel Classification

- national approach to grass fuel assessment
- effective end user group for Bureau of Meteorology, leading to national standardised forecasting products and the Bushfire and Natural Hazards Cooperative Research Centre
- commenced review of bushfire seasonal outlook process
- developed fire weather training resources
- conducted seven webinars for professional development to fire behaviour analysts.

A Predictive Services Strategy is now under development to explore how to best support the development of predictive services capabilities for other hazards.

Public Information and Warnings Handbook

Initiative Driver: Recommendation 2 from the National Review of Warnings and Information called for the review and development of key national documents on warnings.

Aim: At the request of Emergency Management Australia (EMA), the Australian Institute for Disaster Resilience (AIDR), an operating division of AFAC, developed a Public Information and Warnings Handbook, a new Handbook in the Australian Disaster Resilience Handbook Collection for which it is custodian.

Features: The Public Information and Warnings Handbook incorporates current research and industry good practice and consolidates information from Australia’s Emergency Warning Arrangements and the Best Practice Guide for Warning Originators.

Two new companion documents have been developed as part of the project:

- Guideline 1 - A guide to warning message construction: Choosing your words. This replaces the 2008 Emergency Warnings: Choosing Your Words.

National Warning Principles

Initiative Driver: Nationally agreed principles for the provision of warnings were first established in 2008. As part of the development of the Public Information and Warnings Handbook, revised principles were developed and adopted by Commissioners and Chief Officers Strategic Committee (CCOSC) in May 2018.

Aim: These ten principles guide the development and use of warnings in Australia. They outline why warnings are important and how warnings are provided most effectively.

Features: Australia’s Warning Principals outline the ten principles that work together to provide informative and effective emergency warnings. Refer to Figure 1 for details.

Outcomes: The National Warnings principles will ensure greater consistency in the provision of warnings and information to the community during emergencies and disasters.

- Guideline 2 - A guide for warnings republishers. This replaces the 2013 Code of Practice for Warning Republishers.

The Handbook incorporates several themes in public information and warnings. This includes ten revised national warning principles to guide development and use of warnings in Australia, agreed definitions of warnings and public information in the Australian emergency and disaster context, a Total Warning System for multi-hazard emergencies and disasters and guidance for the provision of public information and warnings during system failures and catastrophic events.

Outcomes: The Public Information and Warnings Handbook will improve the provision of warnings to the community during emergencies and disasters by ensuring warnings and information practitioners are better supported through access to the latest research and evidence.

Figure 1:

Australia’s Warning Principles	
1	Life-saving: Warnings can save lives and protect people from harm. They prompt and encourage protective action to minimise the social and economic impacts of an emergency. Warnings are an essential element of effective emergency management.
2	Empowering: The provision of warnings enacts a national commitment to building shared responsibility for disaster resilience, by empowering people to make decisions about their own safety.
3	Trusted, authoritative and verifiable: For greatest effect, warnings must come from a trusted source and be verifiable through multiple channels. Warnings should therefore be easily and widely shared to recognise the diversity of potential trusted sources. The official authority issuing a warning should always be clearly stated.
4	Scaled based on risk: Scaled warning frameworks should guide the delivery of all warnings and support the consistent risk assessment of a hazard, its impact and its consequence.
5	Timely, targeted and tailored: Warnings should be timely, targeted to communities at risk and tailored to provide detail and relevance. Specific consideration should be given to harder to reach and vulnerable members of the community.
6	Conveying impact: Warnings should describe the expected impacts and consequences of an approaching or current hazard, to assist people to understand and be motivated to take protective action.
7	Including a call-to-action: Warnings should include practical calls-to-action using language tailored to the level of risk, ranging from advice and persuasive recommendations to authoritative direction.
8	Clearly communicated: Warnings should be easy to understand and use a consistent structure to provide information. Both written and visual information should be considered to assist with clearly conveying risk and encouraging protective action.
9	Readily accessible: Warnings should be disseminated via multiple channels, tailored to suit each channel, and consider accessibility for diverse audiences. Ease of sharing and rapid dissemination should be supported with use of nationally agreed technical standards, and dissemination strategies should be in place to adapt to failure of technology or other systems.
10	Part of a bigger picture: Warnings are one component within a systems-based approach to community safety. Community engagement, education and awareness programs better prepare communities to receive, understand and act upon warnings.

Nationally agreed principles for the provision of warnings were first established in 2008 and available in the Australia’s Emergency Warning Arrangements (Attorney-General’s Department 2013). These revised principles were adopted by AFAC’s Commissioners and Chief Officers Strategic Committee (CCOSC) in May 2018.

National Fire Danger Rating System Research Prototype

Initiative Driver: In July 2014, Senior Officers and Ministers agreed the development of a new National Fire Danger Rating System (NFDRS) was a national priority. The current system does not meet the needs of emergency service authorities or the community in achieving the best emergency management outcomes in a bushfire event.

Aim: The aim of the NFDRS Research Prototype was to demonstrate the feasibility of a fire danger rating system based on available fire behaviour models that is national, modular, and open to continuous improvement.

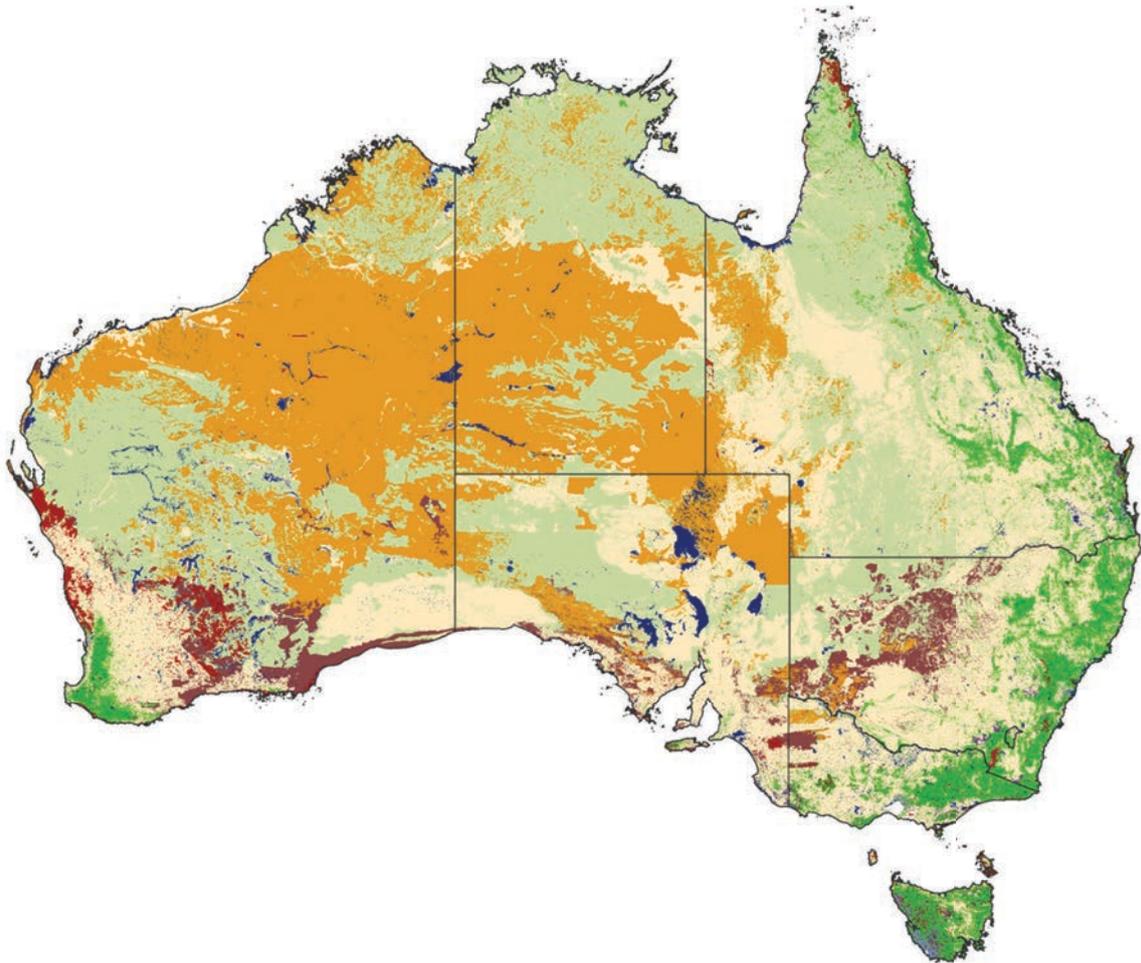
Features: A system of fire danger rating based on fire behaviour calculations was developed by incorporating ideas from researchers and operational staff and reviewing scientific literature and agency training materials.

A national trial ran from October 2017 to March 2018, with people from all Australian jurisdictions participating. The observations collected covered all jurisdictions and all major fuel types.

Outcomes: The NFDRS Research Prototype has demonstrated that a national, modular and adaptable system is possible.

A key finding showed the Research Prototype could correctly predict the observed rating slightly more often than the current system, at 56 per cent compared to 42 per cent. The ability of the Research Prototype to identify relatively rare severe conditions reached double that of the current system (1.5 to 2 times higher based on statistical measures of predictive skill).

The results of the Research Prototype will be used to inform the next phases of the NFDRS implementation.



The National Fire Danger Rating System has delivered Australia's first fuel map to give better predictions on fire behaviour in eight fuel types.

Credit: National Fire Danger Rating System/NSW RFS

DIRECTION 4:

Effective governance and resource management



Fire and emergency service organisations operate in dynamic and complex environments characterised by degrees of uncertainty, ambiguity and change. Leading emergency service organisations requires robust governance and resource management that is legitimate, transparent and accountable. While AFAC member agencies provide specialist emergency management services, they also manage significant capital infrastructure, information management systems, communications networks, large fleets, equipment and resources in Australia and New Zealand.

AFAC member agencies recognise their greatest asset is their people. Our agencies represent a workforce of 288,000 personnel comprising of 254,000 registered volunteers, 34,000 paid staff in career roles and 6,000 retained or part-time staff. A diverse and geographically dispersed workforce requires optimal human resource management strategies, industry wide workforce planning and targeted capability development. Meeting the needs of this workforce requires innovative, targeted and flexible strategies for their recruitment, engagement and retention. AFAC members recognise this need and work with volunteer associations to share their expertise in this field.

Emergency management is inherently risky and managing a large workforce requires an evidence-based approach to issues of national and international importance, such as the development and maintenance of standards for protective clothing and equipment, worker health and safety and mental health and wellbeing. While AFAC members operate within legislative and regulatory arrangements, its members share their collective knowledge and expertise through collaboration to achieve consistent outcomes that reduce duplication of effort and ensure the safest possible environment for the community and personnel.

Fire and emergency services maintain effective governance and resource management by:

Transition and Review of the PUA12 Public Safety Training Package

Initiative Driver: Australian Industry and Skills Committee (AISC) is the driver for all Training Packages to be transitioned to meet the requirements of the *Standards for Training Packages 2012* by mid 2018.

The Standing Council on Tertiary Education, Skills and Employment (SCOTESE) endorsed *Standards for Training Packages 2012* on 16 November 2012. This decision has required a transition and review of the PUA12 Public Safety Training Package.

Aim: The review was an opportunity for AFAC members to update the Fire, Emergency Services, Communications Centre and Emergency Management qualifications and to embed an all-hazards approach to emergency management, doctrine developments, regulatory and policy shifts and research utilisation.

Features: AFAC, Council of Volunteer Firefighting Association members and industrial parties were represented on Fire, Public Safety and State Emergency Services Technical Advisory Committees (TACs). The TACs led the review of 147 transitioned units, 16 qualifications and the development of 10 new units and 10 skill sets. The TACs were supported by 170 AFAC subject matter experts (SMEs) drawn from the Collaboration Network.

Outcomes: The AFAC Collaboration Model facilitated an agile approach to this project in a time critical environment. The Collaboration Model supported TACs and enabled work to be informed by industry SMEs, ensuring the qualifications reflected the current operating environment. The Public Safety Training Package will be tabled to AISC for endorsement in November 2018.

Establishment of CCOSC

Initiative Driver: The AFAC Board established the Commissioners and Chief Officers Strategic Committee (CCOSC) to provide jurisdictional consideration and representation on behalf of AFAC Council to the Federal Government.

Aim: The aim of CCOSC is to consider and influence operational issues for presentation to the Australia New Zealand Emergency Management Committee (ANZEMC). This includes:

- provide consideration on operational issues related to the Commonwealth Government and Commonwealth Departments
- develop, progress and oversee national fire and emergency services operational capability and capacity, including:
 - leadership
 - resources
 - governance of multi-jurisdictional events
 - communications
 - intelligence

- coordinate national operational matters during significant events through the CCOSC Operational Briefing process and provide an operational reference group for multi-jurisdictional response requirements
- brief AFAC Council on national operational matters of significance

Features: The membership of CCOSC is to include at least one jurisdictional representative from across Australia and New Zealand and representation from key Commonwealth Agencies, including Emergency Management Australia (EMA) and the Bureau of Meteorology.

CCOSC is co-chaired by the EMA Director-General and formally meets four times a year. It also convenes as required if a formal operational briefing process is initiated at the request of a jurisdiction requiring assistance.

Outcomes: Considerable outcomes have been achieved through CCOSC, including the establishment and oversight of the National Resource Sharing Centre responsible for facilitating the interstate and international sharing of resources, excluding aviation resources, by AFAC member agencies. Most recently CCOSC launched an online registry for the management of personnel approved for international deployments.

NAFC Procurement

Initiative Driver: All governments in Australia recognise the importance of having access to a sophisticated aerial firefighting capability to respond to bushfires, protect communities and support firefighters on the ground. National Aerial Firefighting Centre (NAFC) ensures excellence in the provision of aviation support to fire and emergency services and brings interoperability and bulk purchasing power through national procurement.

Aim: To secure contracts for the states and territories for a varied, fit-for-purpose and value-for-money aviation fleet of approximately 100 aircraft services, commencing in the 2018-19 fire season.

Features: States and territories identified their required capabilities, which NAFC consolidated and released to local and

global markets. States and territories participated in a national evaluation process facilitated by NAFC to provide expert group analysis of the solutions and packages tendered. This national process ensures the highest standards of probity, monitored by NAFC and overseen by external probity advisors.

Outcomes: Preferred tenderers have been identified from the evaluation and negotiation process and contracts will be awarded in time for the 2018-19 bushfire season. Solutions procured include specialised aircraft services such as large airtankers, state-of-the-art information gathering aircraft, land management support solutions, complementary refuelling arrangements and innovative stand-up/stand-down services. These will combine with tried and tested firefighting aircraft to ensure a diverse, cost-effective and versatile aerial fleet to support Australia's resources for all hazard response.

AFAC Doctrine

Initiative Driver: To document the outcomes and solutions reached through the AFAC Collaboration Model by developing a nationally-agreed doctrine that aligns to the Strategic Directions.

Aim: To develop, manage and maintain doctrine for use by AFAC members and the broader emergency management and disaster resilience community.

Features: As a collaborative member network, AFAC delivers knowledge and practice to inform the fire and emergency services industry and wider community. AFAC's most significant intellectual property asset is its suite of doctrine positions, guidelines and training resources. There are currently 105 documents in the AFAC doctrine collection.

Doctrine is an important tool for leaders of large, complex organisations in dynamic environments. By identifying good practice, it aligns research and learning with organisational strategies, beneficial organisational culture, knowledge and succession planning and a framework for working together.

AFAC members represent the most authoritative source of practical knowledge on dealings across a range of hazards. As AFAC doctrine is member initiated and led, AFAC's role in leading the development of doctrine is key.

AFAC interprets sector complexity through consultation, cooperation and coordination and its doctrine development policy reinforces industry community. AFAC's remit is to consult properly and holistically and explain why a current or future framework has been decided upon.

Outcomes: AFAC doctrine defines accountabilities and practice that members can measure their organisational performance against. It does not mandate action, but rather sets aspirational measures. Its existence is important even if some members do not or cannot implement it. Publishing common approaches and terminology enhances cooperation and interoperability within and between agencies and jurisdictions.

In 2017-18, 17 new and 12 revised doctrine were approved by AFAC Council and published by AFAC for the use of members. All AFAC doctrine is aligned to the Strategic Directions 2017-2021.

NSW State Emergency Services (SES) Volunteering Reimagined

Initiative Driver: Research shows the landscape of volunteering in Australia is changing due to modern day work expectations, globalisation, changes to the nature of community and the impacts of technology. Volunteering agencies need to adjust their offering to meet the demand for short term, episodic volunteering opportunities.

Aim: Volunteering Reimagined is designed to build a sustainable volunteer workforce for the NSW SES that can meet the increasing community demand following severe weather events.

Features: Volunteering Reimagined brings flexibility to the significant commitment of joining a volunteer emergency service. In addition to Unit Volunteers, there are now three new categories of membership. Community Action Teams have been established in communities at risk of flood, storm or tsunami

and members have basic training and equipment to prepare and respond to residents, especially during periods of isolation. NSW SES is forming volunteering partnerships with businesses, universities and others to increase the capability of the service and utilise the skills of community members to improve response activities.

Outcomes: NSW SES has witnessed a 21 per cent increase in the number of volunteers since Volunteering Reimagined launched. Community Action Teams are currently being established across the state and policies, procedures and systems are being updated to support the new categories of volunteers. It is expected there will be additional growth in the volunteer workforce and more effective use of resources as local communities become better supported to help themselves.

A fresh approach to volunteering models and partnerships is boosting SES volunteer engagement across NSW.

Credit: NSW SES



DIRECTION 5:

Informed by knowledge and research



As AFAC's recognition of the value of creating and developing knowledge continues to mature, evidence from experience, observation and research widely informs our policy and practice.

AFAC's doctrine, developed with assistance from members agencies, AIDR's Handbooks and many other Public Safety training products are all informed by research and evidence from experience where relevant. Care is taken to acknowledge and document the source of information so that it is properly valued.

A comprehensive Professional Development Program supports learning to deepen understanding and help create knowledge. Events are also critical in broadening this knowledge base to reach more people so that it becomes 'common knowledge'. The AFAC conference is the signature national event where researchers, practitioners and policy makers come together to actively share and learn. This year the AIDR Australian Disaster Resilience Conference ran concurrently with the AFAC conference, extending our collective reach to broader audiences.

AFAC's Knowledge, Innovation and Research Utilisation Network (KIRUN) hosted a National Lessons Management Forum for the second time in 2017 and partnered with AIDR in 2018 to deliver this event again. KIRUN has also sponsored the fourth Research Utilisation Survey which has improved understanding of how research utilisation in our industry works.

AFAC Groups and Networks facilitates the dissemination of research outputs through reports and presentations tailored to end user needs, this has been extended into a broader emergency management domain through AIDR. The result of one such research utilisation product is presented in the Coaching and Mentoring Guide case study.

Fire and emergency services are informed by knowledge and research by:

AIDR Utilisation – Disaster Resilience Handbook Collection

Initiative Driver: To share current good practice with enhanced usability, accessibility and national adoption across a broad range of users and organisations in emergency services, government, education and in communities.

Aims: To develop and maintain the Australian Disaster Resilience Handbook Collection for use by the broad disaster resilience and emergency management community.

Features: Australian Institute for Disaster Resilience (AIDR) is contracted by Emergency Management Australia to develop and maintain the Australian Disaster Resilience Handbook Collection. There are currently 16 handbooks, 17 companion documents, 11 manuals and one glossary in the Australian Disaster Resilience Handbook Collection. In 2017-18, four handbooks and five companion documents were developed and published on the Australian Disaster Resilience Knowledge Hub: www.knowledge.aidr.org.au.

Outcomes: AIDR is a disaster resilience knowledge centre that develops, maintains and shares knowledge and learning to

support a disaster resilient Australia.

Handbooks contain guidance on agreed and proven approaches to national disaster resilience principles and incorporate current research, knowledge and learning from experiences.

As the authoritative and trusted source of knowledge regarding disaster resilience principles in Australia, the Handbook Collection aligns national disaster resilience strategy and policy with practice by guiding jurisdictions, agencies, organisations and individuals toward their implementation.

Research provides an important part of the evidence base and principles through which handbooks are developed and reviewed. Research utilisation is an important component in developing the principles presented in the Handbook Collection. The collection draws on expertise, experience, learning, theoretical and data analysis, and collaboration amongst agencies, organisations, governments and communities that provide and/or receive services and support before, during and after disasters.

Coaching and Mentoring Guide

Initiative Driver: The unique demands placed on Incident Management Teams (IMTs), a diversifying and aging workforce, the increasing complexity of incidents and a push towards greater interoperability is driving an interest in and use of coaching and mentoring within fire and emergency management organisations.

Aim: It takes years of operational experience, formal and informal learning to build the knowledge, skills, attitudes and abilities required by an incident manager to perform effectively in an IMT. Effective mentoring and coaching practices for IMTs through scenario-based exercises will guide coaches and mentors on how real events and scenario based exercises can be designed to transfer expertise to the next generation of managers.

A project team, led by Dr Peter Hayes of RMIT University, reviewed the literature and available international research evidence. The team consulted industry stakeholders to better understand how coaching and mentoring models and frameworks could support the current and future needs of IMTs.

Features: The resource provides an overview of key coaching and mentoring concepts, examines practical frameworks and approaches relevant to IMTs, evaluates the current knowledge and research evidence, details useful models and tools and offers guidance for operationalisation.

Outcomes: The resource is believed to be the first research utilisation project of its type to investigate the role, scope and value of coaching and mentoring in relation to incident management in Australasia.

Bushfire and Natural Hazard Cooperative Research Centre (BNHCRC) AFAC Utilisation Survey

Initiative Driver: The fourth research utilisation survey responded to the need to maximise the potential benefit of research to AFAC member agencies and the desire to model ongoing learning.

Aim: The survey was conducted to assist individual agencies in understanding their current situation on research utilisation and collectively inform further research utilisation programs. The survey identified potential barriers to research utilisation to better understand the state of research utilisation capability within our industry.

Features: A cross section of 190 respondents (a 63 per cent response rate) from 29 agencies provided a significant and representative industry sample. Key findings include:

- front-line services personnel have lower levels of perceived effectiveness of research dissemination than senior managers.
- consistent support for publications such as Hazard Notes, Hazard News and the website for providing familiarity and

understanding, alongside an increase in social media use and satisfaction with social media products.

- collaborative engagement provided best endorsement for assisting personnel to evaluate and facilitate change.
- the most significant barriers to research utilisation within agencies are:
 - connecting research with agency business
 - understanding the implications of research findings and enabling change
 - the ability to access the research
 - the ability and confidence of participants to evaluate the research.

Outcomes: A Research Utilisation Maturity Matrix has been developed for agencies to assist with understanding their research utilisation capability. The AFAC Knowledge, Innovation and Research Utilisation Network (KIRUN) is assisting with the application of learnings from the matrix into the sector.

Improving Support for Volunteer Families

Initiative Driver: Previous research has identified work and family as the two main reasons volunteers leave the fire services. Fire and Emergency New Zealand (NZ) identified a lack of information regarding the impact on and role of families with a member in the volunteer fire service and how fire services can better support these families.

Aim: To identify how Fire and Emergency NZ could better support the families of volunteers.

Features: New Zealand's fire services are dependent on volunteers, who represent over 80 per cent of the workforce. Research was undertaken to explore how volunteers were supported by their families, the impacts of having a family member volunteer for the fire services and how fire service

organisations can support the families of volunteers. Around 150 volunteers and family members participated in the research which involved interviews, focus groups and surveys. The research findings were explored further in two design workshops involving 25 volunteers and family members to identify practical solutions to the challenges faced by families.

Outcomes: Informed by the research, Fire and Emergency NZ developed a Families of Volunteers brochure to help families know what to expect when a family member volunteers. Through the brochure Fire and Emergency NZ were also able to communicate the range of available support services to families and volunteers.

Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC) Research Advisory Forum (RAF)

Initiative Driver: The sector recognises the importance of a research program that will contribute to a safer, more disaster resilient Australia and the need to engage with research for knowledge translation and research adoption.

Aim: The BNHCRC RAF allows CRC partners, project leaders and end users from the emergency management sector to work together to gain an overview of the latest research and utilisation activities within the CRC core research program.

Features: The RAFs are attended by end-user representatives (including AFAC representatives and agencies) project leaders, researchers and PhD students.

The RAFs attract attendance from around 300 people from the emergency management sector and provide opportunities to engage in intensive discussion about a specific project or theme

and facilitate informal networking between researchers and emergency management personnel.

Outcomes: The attendance at RAFs are increasing each year but attendance alone is not a signifier of the project's success. The quality of conversations and participation in presentations and workshops has been linked to building practical understanding of research and research projects, leading to a greater knowledge transfer to the sector and research adoption into AFAC agencies.

Many PhD students have attended the RAFs and students engage by presenting their research using the Three Minute Thesis format. The aim is to build networks between our next generation of researchers and emergency management personnel to expose all parties to issues facing our sector.



Dr Michael Rumsewicz presents at the Research Advisory Forum event in Perth in 2017.

Credit: Bushfire and Natural Hazard CRC



**AFAC is the National Council
for fire and emergency services**

Level 1, 340 Albert St
East Melbourne, VIC 3002

Ph: 03 9419 2388

Fax: 03 9419 2389

Email: afac@afac.com.au

www.afac.com.au