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# CHANGING CAPABILITIES OF EMERGENCY SERVICE ORGANISATIONS

**Case study synthesis**

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## INTRODUCTION

In our literature review on the costs and benefits of increasing diversity, we also outlined the changing context in which emergency service organisations (ESOs) (that include emergency management) were operating. In summary, the change in the context was due to:

- The increasing frequency and severity of natural disasters due to climate change (National Strategy for Disaster Resilience) (COAG, 2011)
- The increased availability of new and improved technology to respond to natural disasters
- The increased need to serve a much more diverse community (Smiley, 2010, pp 24, 30).

This has meant that both the capabilities and the tasks undertaken by the ESOs have had to change to respond to this changing context, and tasks have changed as demonstrated by the types of incidents and emergencies attended.

These new capabilities and new tasks could be undertaken by retraining the existing workforce. However, the development of these new capabilities and new tasks provides an opportunity to recruit new staff with the required skills from more diverse backgrounds to undertake these new and/or expanding tasks. The literature review suggested that a well-managed, more diverse workforce could produce better performance outcomes for tasks of increasing complexity. In some areas such as new technology capabilities and communication with diverse communities, it may be necessary to recruit those with more diverse backgrounds to meet basic operational objectives.

It is readily acknowledged that this changing context is not the only driver of increasing work force diversity. There are cultural, ethical and equity reasons for increasing workforce diversity. However, the economic case ultimately depends on diversity leading to better performance. Just how that potentially improved performance is to be measured is yet to be developed. It is likely to be a complex combination of financial (e.g., reduced costs) and broader economic benefits. This will be done in the later stages of this project.

The purpose of this report is to focus on changing capabilities and tasks. It will also identify the following from annual reports and strategy documents:

- Intended changes in capabilities which respond to the changing context in which ESOs operate
- Actual changes which have been described in annual reports
- Changes in tasks and the way in which these are a response to the changing context.

Both the intention and the extent of the changed capabilities is documented in the strategy documents and annual reports of the ESOs. We have undertaken a review of these documents to track their changing capabilities over the last decade.

Organisational capability is the ability and capacity of an organisation expressed in terms of its:

1. Human resources: their number, quality, skills and experience
2. Physical and material resources: machines, land and buildings
3. Financial resources: money and credit
4. Information resources: pool of knowledge and databases
5. Intellectual resources: copyrights, designs, patents, etc. (De Vita et al., 2001; WebFinance Inc., 2017).

The extent to which these changed capabilities are reflected in changing tasks undertaken by ESOs is demonstrated by data on types of incidents and emergencies attended, available from some of their annual reports. An analysis of this data follows the discussion of ESO capabilities.

Given the changing context, we might have expected emergency management organisations (EMOs) to be:

- Diversifying their human resources to introduce new skills to reflect the need for a greater emphasis on disaster planning and response, such as improved community communication skills, IT skills and workplace training skills. This by itself would diversify the characteristics of the workforce, e.g., more women and those with different ethnic, language and cultural backgrounds, better reflecting the increased diversity of the community.
- Investing in physical and material resources to improve their capability to deal with more frequent and extreme natural disasters arising from climate change. This may have included more advanced equipment, greater use of new communication and spatial technologies, and better vehicles, ladders, and aerial capabilities.
- Increasing their use of information resources, e.g., weather, mapping, etc., providing more employment opportunities for those with the skills to interpret and use these resources.

Our initial evidence base for evaluating the degree to which ESOs have changed in the manner anticipated is to review annual reports and strategic and other plans of these organisations in Queensland, New South Wales and South Australia. Several of these articulate the need to increase diversity within their workforce to better connect and communicate with the communities they serve (for example, QFES, 2017a). Workplace culture plays a large part in accommodating and maintaining a diverse workforce.

The South Australian State Emergency Service (SASES) has had problems in retaining and recruiting sufficient volunteers and in offering training to those they did have, due to a significant decline in volunteer trainers in 2010 and reduced financial support. Since then, it has had some increase in funding for recruitment of new staff, and it has mapped its workforce to help form a broader workforce development plan. It has also improved its training through its Capability Management Framework. While only one of its reports mentioned the need for diversity and inclusion (SASES, 2017a), it does have a significant representation of females in its workforce. There is



no indication if it has people from different backgrounds, such as Aboriginal and Torres Strait Islanders, on their staff. However, it does see the need for an appropriate value and behaviour framework for its workforce.

We have attempted to extract relevant evidence from these documents and assemble it in the tables presented at the end of each section below.

Overall, the ESO sector in Queensland has the most articulated strategy to improve their organisational capability. It has classified its organisational capabilities into strategic service delivery, operational support and business support capabilities. However, the sector in New South Wales might not have expressed its strategy as comprehensively, but it has brought about significant changes to the culture of their organisation. Changing the culture of organisations is one of the most effective ways of improving capabilities as it assists in recruiting and retaining a diverse workforce with diverse capabilities.

## QUEENSLAND FIRE AND EMERGENCY SERVICES

### HOW QFES AND ITS PREDECESSOR ORGANISATIONS DESCRIBED THEIR CHANGING CAPABILITIES

The Queensland Fire and Emergency Services (QFES) provides a good example of how emergency service organisations (ESOs) in Australia are articulating their changed organisational capability.

QFES classified their organisational capabilities into the following categories:

- **Strategic capabilities**, e.g. planning, communications and liaison, and activities that enable performance and delivery of values that matter to stakeholders and the community
- Service delivery capabilities, which include:
  - Prevention and preparedness, e.g., disaster management plan, training, community education, mitigation and risk reduction, etc.
  - Response, e.g., communication, rescue and response
  - Recovery, e.g., assessment, management, reconstruction, community care and rehabilitation.
- **Operational support capabilities**, e.g., engineering, training delivery, research, logistics, etc.; activities that support delivery of PRRS services
- **Business support capabilities**, e.g., IR, HR services, culture and change management, legal and finance services. (QFES 2017a, p. 180)

To address capability needs, QFES recognise that they need to develop:

- Culture – one that embraces and reflects the diversity of the community that they serve through:
  - Leaders driving the change
  - Valuing the workforce by recognising and rewarding their success
  - Providing a workplace that supports the safety of the workforce and the people they serve, physically, emotionally and psychologically
- Leadership – ensuring strong leaders in the future as:
  - Leaders drive all levels of performance
  - The workforce embraces personal responsibility for performance
  - Leaders visibly engage with the workforce
  - HR technologies are leveraged to maximise productivity and reduce manual processing
  - Policies and procedures ensure organisational efficiency
- Developing critical talent – so that the organisation develops skills that are best suited to developing resilience in the local communities which will thus ensure

that:

- The workforce embraces personal responsibility and continues self-directed learning and commitment to personal leadership and development
- Identifies workforce skills, capability gaps and high-performing talent
- Actively manages the workforce through every career stage
- Service focused structure – to ensure greater clarity around accountability and a culture that demonstrates innovation, proactive behaviours and key partnerships
- Workforce capability – to be achieved through training priorities and training delivery aligned to the mission, values and standards, and making certain that the workforce is adequately prepared to meet the strategic challenges facing them and their communities. (QFES, 2017a, p19)

Some of the changes in the QFES have also been brought about by the Allison Review (Allison, 2014), which made several recommendations centred around improving gender equity, maintaining a safe environment for all staff and having better organisational response to complaints (p7).

The QFES, in specifying their capabilities and needs, exemplify the diagram in Young et al. 'A framework for addressing non-profit capacity building' (Figure 6, Young et al. 2018, p40), where the leadership drive change through specifying the vision and values of the organisation (and vice versa), which then flows through to developing the critical talent and workforce capability. The QFES specify their own vision as demonstrated in Figure 1.

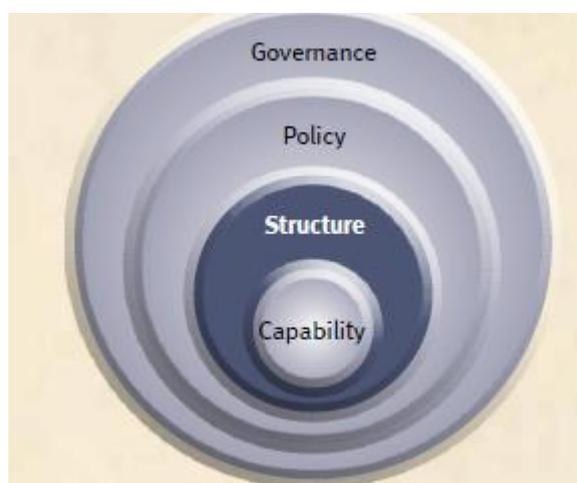


FIGURE 1. QFES BUSINESS MODEL AREAS UNDERGOING CHANGE (QFSES, 2017A, P7).

## STRATEGIC CAPABILITIES

The changes in the QFES strategic capabilities are reflected in the articulation in their annual reports of:

- The strategic challenges they face
- How they prevent, prepare, and respond to bushfires and natural disasters



- The changes in technology.

### Strategic challenges

In 2004-05, the major challenge perceived by the QFES was enhancing rural/remote indigenous capacity. The other challenges included improving building fire safety and improving safety outcomes for at-risk groups. Enhancing disaster mitigation and management capability and capacity was also a major strategic challenge for the service, as was enhancing community safety initiatives and programs.

By 2011-12, there was recognition of the increasing demand from an aging and more diverse population with higher expectations, as well as the logistical issues associated with servicing remote communities, while maintaining community confidence with a challenging fiscal environment. Another a major challenge was seen to be the capacity to operate effective communications for front line services, while retaining and developing a motivated paid and volunteer workforce.

By 2016-17, the major strategic challenge stated in its annual report was the demands from the continuing growth in the population, combined with its diversity and geographic dispersal. The other challenges included the predicted increases in the severity and frequency of natural disasters, changing community expectations from government services, while the volunteer landscape also faced changes. A new challenge mentioned in the 2016-17 Annual Report was the crime and safety threats posed by technological advancements and violent extremism.

### PREVENTION PREPARING AND RESPONDING TO NATURAL DISASTERS

In 2004-05, the QFES' preparedness was embodied in the Bushfire Prepared Communities initiative that identified individuals living in and near bushland or in semi-rural areas, and encompassed a television awareness campaign, brochures and a community group training package with a CD, video and instructor training. Fire safety brochures were translated into different languages for people whose first language was not English. The prevention of disasters was through the disaster mitigation program which included measures such as increasing the resilience of infrastructure, undertaking risk assessments, conducting community awareness campaigns, improving warning systems and engaging in research. A total of \$8.1 million for 38 new projects was provided for and also an additional \$3.77 million for 35 projects for previous risk studies.

By 2011-12, \$22 million was provided for 56 projects. Natural risk hazard assessments were developed for 19 councils. There was also a flood risk management study, construction of fire trails and the implementation of automatic rainfall and river height monitoring.

The QFES had further strengthened the State's bushfire capability through enhanced coordination of activities and improved engagement with communities. Operation Cool Burn assists in land management and fuel reduction, and mitigation of bushfire risk. A network of Area Fire Management Groups, assists with local coordination of bushfire preparedness, prevention and mitigation activities of the service. These groups also help to identify hotspots for mitigation activities. The Predictive Services Unit (PSU) provides outlooks by working closely with the Bushfire and Natural Hazards CRC and the Australian Fire and Emergency Services Authorities Council. QFES has



developed several partnerships to mitigate the threat of bushfires through its REDIPORTAL (Risk Evaluation and Disaster Information), which maps information such as fire history and vegetation hazards to identify risks and enable prioritising mitigation. Operation Unified uses sophisticated fire simulation programs developed and provided by the PSU, which also provides briefings on a fortnightly basis for key QFES staff.

Community safety programs in 2016-17 included education campaigns to improve community safety and resilience through their 'If it's flooded, forget it' campaign, which tracks storm and flood seasons; provision on its website so people could complete and print their own Bushfire Survival Plan; and home fire safety campaigns which encourage residents to prepare their homes for quick evacuation.

The QFES works on its cultural capability through its Aboriginal and Torres Strait Islander Engagement Strategy 2015-2019, and its Aboriginal and Torres Strait Islander Cultural Capability Action Plan 2016-17. It has also developed a culturally and linguistically Diverse Customer Information Implementation Plan outlining the process of implementing the collection, analysis and publication of its diverse customer base. It also has a plan to educate, inform and engage people with disabilities to improve their safety.

### Changes in technology

The changes in technology have also had an enormous impact on the organisation. In 2004-05, QFES simply ran a 24-hour hot line with up-to-date information on bushfires on a website (Department of Emergency Services, 2005, p35). By 2011-12, it had added a 'Current Bushfire Incident' feature on the website, which had an easy to navigate page enabling the public to see where the bushfires were burning, where the resources were deployed and details on how to act when the community was threatened. The incident information was updated every 30 minutes and it had real-time data from diverse sources, such as the Bureau of Meteorology and Department of Transport in near-real time on interactive maps (Department of Community Safety, 2012, pp 33, 35). By 2017, it had a disaster management portal, which included interactive maps with a layer for each LGA. It also had an Events Management System (EMS) which provided real-time situational awareness and decision support through automation and which replaced 5 different systems and paper based entries with a single cloud-based system that can be accessed anywhere where the internet is available (QFES, 2017c, p39). It also has e-contact, which helps build community resilience through social media (p40).

QFES has faced the above challenges in different areas as follows. In the area of bushfire and disaster mitigation, it used to run television awareness campaigns, supply brochures and provide group training packages (Department of Emergency Services, 2005, p33). It then moved on to developing natural hazard risk assessments for local councils, constructing fire trails, undertaking a flood risk management study and monitoring river height through automatic rainfall measurement (Department of Community Safety, 2012, p34). By 2017, it had a Predictive Services Unit, which enables managers to identify where the risks are and thus help to prioritise mitigation (QFES, 2017c, pp 34-35). It also had a network of management groups that assisted with local coordination and it ran Operation Cool Burn, which helps QFES and its



partners in land management and local government focus on fuel reduction and mitigation of bushfire risk across Queensland (p35).

Training has progressed from basic fire management training (Department of Emergency Services, 2005, p40), to also developing skills for potential weather events through exercises conducted during hypothetical scenarios (Department of Community Safety, 2012, p30). By 2017, QFES was analysing its work programs and focusing its training on capability rather than on specific service streams (2017c, p55).

In 2004-05, QFES opened a new multi-service Operations Response hub (Department of Emergency Services, 2005, p39). It improved its technological capability in the area of response from two-way repeaters and base units to Mobile Data Terminals (MDT) in 2011-12, which incorporate other technologies, such as mapping, navigation and reversing cameras; and provide first responders with up-to-minute information on incidents (Department of Community Safety, 2012, p32). By 2017, QFES had moved to the replacement of all analogue radio bases with digital upgrades, and upgrades of the radio infrastructure and of the Triple Zero and Computer Aided Dispatch (CAD) (2017c, p51). The Government Wireless Network (GWN) has improved the quality of the digital radio communication by bringing all the different divisions on to the same platform and providing benefits such as GPS tracking (p52).

## **IMPLICATIONS OF CHANGING CAPABILITIES FOR SKILL REQUIREMENTS**

The above changes imply a need for a diverse workforce, with advanced technological and analytical capability.

QFES has met the demands of the new environment through training, recruitment and a human resources management system (NEXUS) that facilitates recruitment, health and safety management, performance and goal management, as well as workforce planning (QFES, 2017c, p53). The system helps in building and retaining a diverse workforce, by helping to tailor to individual needs, through arrangements such as flexible working hours.

The State Disaster Coordination Centre (SDCC) delivered EMS training to a large proportion of new staff, and refresher training to more experienced staff. The SDCC workforce consists of 7 capabilities – command, operations, logistics, planning, intelligence, aviation and public information. It has a total of 740 staff (QFES, 2107c, p52).

QFES staff and volunteers can access online professional development training on most devices 24 hours a day, seven days a week, from the QFES Learning Cache. Topics covered in the course include a diverse range of subjects, such as workplace health and safety, communication and cultural change, and in particular addresses the development of soft skills such as emotional intelligence, dealing with conflict, and giving and receiving feedback (p52).

To accommodate diversity, the focus has changed from just having diversity and equity targets in 2004-05 (Department of Emergency Services, 2005, pp43-45), to a new contemporary whole-of-QFES recruitment marketing and attraction strategy, 'specifically designed to target potential applicants from diverse backgrounds and

increase QFES' profile as an attractive employer for both frontline and back-of-house roles' (QFES, 2017c, p97).

In response to the Allison Review, the QFES established a Cultural Improvement Implementation Project (CIIP) in 2015 to ensure a safe, inclusive and secure working environment for all its staff and volunteers (2017c, p70). It also appointed a chair to oversee the implementation of the review recommendations. It achieved the following outcomes:

- The development of a Workplace Behaviour Training Package
- An independent review of the QFES recruitment process to ensure high-quality and diverse applicants.
- The introduction of a Harassment Information Line and Harassment Contact Officer network to the QFES workforce
- Development of strategies, policies, etc., to ensure a safe and secure work environment
- The revision of the required standards of QFES facilities and a program of work to ensure safe and secure work environments. (QFES, 2017b, p70)

The strategy features a new QFES recruitment website that focuses on the promotion of all career opportunities and career paths to non-traditional cohorts of the Queensland community and 'is designed to inform and assist in attracting suitable applicants'. It also 'includes videos promoting QFES as an employer of choice and print materials for distribution and display at QFES sites across the state' (2017c, p97).

The Human Capital Management Directorate provides QFES with the opportunity 'to design and develop programs and services tailored to its diverse workforce' (p98), including enabling a work-life balance (p71). 'It offers whole-of-government flexible work practices including job-sharing, telecommuting and family-friendly work arrangements and a wide range of whole-of-government leave arrangements' (p98). The 2016 Working for Queensland Employee Opinion Survey results indicated that 46% of QFES respondents used a form of flexible working options and 72% of QFES respondents were 'very satisfied' or 'satisfied' with their work-life balance (p98).

*Additionally, 69 per cent of QFES respondents stated their workplace culture supports people to achieve a good work-life balance. QFES continues to review the arrangements for flexible work practices to ensure it continues to improve as a contemporary workplace. (QFES, 2017c, p98)*

They also state that:

*QFES values, supports and promotes the appropriate recognition of its workforce, paid and volunteer, for their bravery, dedication and outstanding service above and beyond what is expected in their roles. The QFES Honours and Awards system provides rewards and recognition offerings to highlight and celebrate the achievements and successes of the QFES workforce. (QFES, 2017c, p97)*

The Fire and Emergency Services Support Network (FESSN) provides counselling and support for staff for work-related problems and includes programs such as a Peer Support Program; professional counselling, training on issues such as stress



management and wellbeing, and support for critical incident response teams before, during and following confronting incidents, activations and deployments (QFES, 2017c, p99).

## SUMMARY

Overall, QFES has had some significant changes in its strategic capabilities, which are reflected in its strategic challenges as articulated in its annual reports. From enhancing its rural/remote and indigenous capacity, it now sees itself as servicing an increased and diverse customer base; an increase in the severity and frequency of natural disasters; changing community expectations; changes in the volunteer landscape; and an increase in crime and safety threats due to technological advancements, globalisation and violent extremism (QFES, 2017c, p10).

It has met these challenges through training, recruitment of a more diverse and capable workforce, and technological advancements, such as interactive incident information maps. To accommodate and maintain this diverse workforce, it has put into place strategies to improve its workplace culture to ensure a safe, inclusive and secure working environment. It also has a new human resources management system (NEXUS) that helps in recruitment and retention of a diverse workforce by helping to tailor to individual needs such as flexible working hours.



TABLE 1: SUMMARY OF RELEVANT INITIATIVES FROM QFES AND ITS PREDECESSORS, PLANS AND ANNUAL REPORTS

		2004-05	2010-12	2016-17
<b>Strategic capabilities</b>	<b>Name</b>	<b>Department of Emergency Services</b>	<b>Department of Community Safety</b>	<b>Queensland Fire and Emergency Services</b>
	Divisions	Queensland Fire and Rescue Service (QFRS) Queensland Ambulance Service (QAS) Counter Disaster and Fire Rescue Services (CDFRS) Business Support Services (BSS) Strategic Policy and Executive Services (SPES)	Queensland Corrective Services (QCS) Queensland Ambulance Service (QAS) Emergency Management Queensland (EMQ) Queensland Fire and Rescue Services (QFRS)	Public Safety Business Agency (PSBA) Queensland Fire and Emergency Services (QFES) Queensland Police Service (QPS)
	Strategic challenges	Enhancing rural/remote and indigenous capacity Improving building fire safety Improving safety outcomes for at risk groups Enhancing disaster mitigation and management capability and capacity Enhancing community safety initiatives and programs	Increasing demand as population ages, becomes more diverse with higher expectations Logistical issues with servicing remote communities Maintaining community confidence with challenging fiscal environment Operating effective communication for front line services Retaining and developing a motivated, paid and volunteer workforce	Continuing growth in population, combined with its diversity and geographic dispersal Predicted increase in the severity and frequency of natural disasters Changing community expectations around government services Changes in the volunteer landscape Crime and safety threats resulting from technological advancements, globalisation and violent extremism
Prevention preparing and responding to natural disasters	Bushfire and disaster mitigation	Bushfire preparedness: TV awareness campaign, brochures and a community group training package.  Disaster mitigation \$8.1 million for 38 new projects and \$3.77 million for 35 projects for previous risk studies	\$22 million for Natural Disaster Resilience Program for 56 projects for: development of natural hazard risk assessments for 19 councils; flood risk management study; construction of fire trails; and implementation of automatic rainfall and river height monitoring	Operation Cool Burn – Network of Fire Management groups assist local coordination Predictive Services Unit (PSU) – provides pre-season Outlooks at a national level. REDI-PORTAL (Risk Evaluation and Disaster Information) – enables managers to identify where risks are and prioritise mitigation Operation Unified based on PPRR model QFES operates as a single department with bushfire management



		2004-05	2010-12	2016-17
Strategic capabilities	Name	Department of Emergency Services	Department of Community Safety	Queensland Fire and Emergency Services
	Community information	A 24-hour hot line with up-to-date information on bushfires; updates also on website	<p>A 'Current Bushfire Incidents' feature was made available at website – with an easy to navigate page enabling public to see where bushfires were burning, the resources deployed and details on how to act when fires threaten a community. Incident information updated every 30 minutes, Emergency Warning or Watch and Act messages updated every 10 minutes</p> <p>New mapping technology also brings together information from different sources (such BoM, Department of Transport) and presents near-real time data on interactive maps</p>	<p>Disaster management Portal includes: Interactive map which includes a layer for LGA. Also E-contact – building community resilience through social media.</p> <p>The Events Management System (EMS) provides real-time situational awareness and decision support, reduces workload through automation and replaces 5 systems and paper-based entries with a single cloud-based system which can be accessed anywhere where internet is available.</p>
Changes in technology		<p>New ultra-high frequency two-way repeaters and base units for more reliable communication with isolated parts of the state</p> <p>New multi-service Operations Response hub at a cost of \$10.7 million to respond to any emergency in Australia and the Pacific region</p>	<p>Mobile Data Terminals (MDT) provides first responders to up-to-the-minute information about incidents and incorporate other technologies including mapping, navigation and reversing cameras</p> <p>Total Operational Mapping (TOM) see above</p>	<p>5 communications centre modernisations; replacement of 8 analogue radio bases and antennas with digital upgrades, upgrades of radio network infrastructure. Upgrade of Triple Zero and Computer Aided Dispatch (CAD). The Event Management System (EMS), see above, reduces workload through automation and replaces 5 systems and paper-based entries with a single cloud based system accessible anywhere with internet.</p> <p>The Government Wireless Network (GWN) improving quality of digital radio communications bringing all divisions on same platform. Provides benefits such as GPS tracking.</p>

## FIRE AND RESCUE NEW SOUTH WALES

The Fire and Rescue New South Wales services (FRNSW) has articulated its vision and strategic direction in its report 'Future Outlook: Future Directions for Fire and Rescue NSW Towards 2033' (FRNSW, 2013). In this report, the organisation recognises that the world around is changing and presenting both challenges and opportunities. The changes it sees include:

- Population growth, ageing of the population
- Higher community expectations
- Cultural diversity within the population
- Divisions caused by socio-economic trends
- The impact of climate change (pp 7-8).

It sees itself as needing to be able to:

- Respond to the rapid advances in technology
- Be able to provide a flexible and safe workplace for its changing and increasingly diverse workforce.

Overall, the FRNSW has an Equity, Diversity and Inclusion Strategic Framework, an Aboriginal and Torres Strait Islander Employment and Engagement Strategy, the Multicultural Programs and Service Plan (MPSP) and the Women's Employment Strategy; and it specifically states that its policy 'is not framed by a discourse of disadvantage, but by the commitment to opportunity, capability and human rights' (FRNSW, 2017b, Section 1). For its future direction, it sees the safety and well-being of its workforce to be of utmost importance and it plans to develop and implement a 2018-2022 Safety and Well-Being Plan (FRNSW, 2017a, p63).

The changes in the FRNSW strategic capabilities are reflected in the articulation in their annual reports of:

- The strategic challenges they face
- In how they prevent, prepare, and respond to bushfires and natural disasters
- In the changes in technology.

### STRATEGIC CHALLENGES

In 2004-05, emergency services in New South Wales were provided by the NSW Fire Brigade (NSWFB) and the State Rescue Board (established in 1990) (Office of Emergency Management, 2017). In 2011, the NSW Fire Brigade's name was changed to the Fire and Rescue NSW (FRNSW), because the service was seen to be coping not just with fires, but facing greater challenges. In its 2004-05 Annual Report, it specifically mentioned the challenges of drought, terrorism, global warming, an aging population and natural disasters (NSWFB, 2005, p3).

In 2004-05, the strategic direction of the NSWFB was to provide emergency risk management through:

1. Community Safety – prevention and preparedness
2. Operational Preparedness – capability development
3. Emergency Management – through response and recovery. (NSWFB, 2005, p2)

In 2011-12, the service specifically identified the key challenges to include (FRNSW, 2012, pp 9-10):

- Working within and across government, taking account of the NSW Government's future directions and priorities to strengthen the local environment and communities including disaster planning and bushfire reduction targets and strengthening public resilience to disasters and hazards.
- Environmental change as predicted by scientific research for increasing frequency of extreme events with climate change and El Niño delivering drought conditions followed by flooding; the increasing cost of electricity, gas, fuel and water; along with diminishing water availability which would require more efficient and environmentally sustainable firefighting methods.
- A rapidly changing society with population increase leading to increased number of emergency incidents and greater vulnerability. Demographic changes with: increases in coastal communities and declines in rural areas; the ageing population and the increase in lone-person households raising the potential for social dislocation and risks to safety; patterns of migration leading to culturally diverse communities bringing new risks; and consumer technology and social media changing interaction with government.
- Advances in technology, which is a vital tool for emergency workers, but presents challenges that include:
  - Which are the best technologies to invest in given infinite choices and finite resources
  - Relatively new technologies becoming obsolete and rapidly emerging new technologies
  - Costs associated with an upskilling workforce to apply and manage new technologies
  - Compatibility of technologies across agencies
  - High community expectations about use of consumer technology and social media, and the access and equity issues arising from these
  - Privacy concerns regarding accessing personal information for agencies.
- The 2011-12 report is titled 'Gearing Up for the Future', reflecting its need to meet the present demands, as well as preparing to meet the challenges of the future.

In 2011-12, the NSW Fire and Rescue services saw its core functions as emergency and disaster prevention, preparedness, response and recovery. The annual report suggests that the services priorities were:

1. Responding to emergencies
2. Creating a safer community

### 3. Developing and managing its resources.

The 2016-17 Annual Report defines its core functions as preventing and extinguishing fires, fighting and preventing bush fires, operating rescues units and providing expert advice, input and regulation for fire safety measures in buildings (FRNSW, 2017a, p3). It sees its primary strategic direction to be admired and trusted by being recognised as a world class provider of cost effective, comprehensive, rapid and reliable emergency prevention and response services (p21). It also sees the need for it to be an essential arm of an integrated and seamless emergency service sector within NSW, and to nationally support all arms of government through specialists and expert advice and service. It sees its next strategic direction to be community based, in that it works closely with local communities, such as Aboriginal and Torres Strait Islanders and CALD communities (p40). It also sees the need to support and advise on better management of fire and hazardous materials risks in the built environment through building strategic partnerships with different sectors, such as health care facilities, public and community housing, etc. The 2016-17 Report also articulates the need to help build community resilience through community-based planning and education (p50).

The change in its primary strategic direction to be an organisation that is 'admired and trusted' may be a result of the investigations by KPMG and the Independent Commission Against Corruption (ICAC) into the practices of NSW fire services in 2010 and 2011 (KPMG, 2010; ICAC, 2011). Another Inquiry was established in May 2017 to consider the policy response to harassment, bullying and discrimination in the NSW emergency services (Parliament of NSW, 2017). Overall, the ICAC (2011) recommended the FRNSW improve its management capability.

## PREVENTION, PREPARATION AND RESPONDING TO NATURAL DISASTERS

### Prevention

In the area of bushfire mitigation, the key component of the NSWFB information and education strategy was adding to the number of Community Fire Units (CFUs) to bring them to 292 (NSWFB, 2005, p5). In 2012, the organisation commissioned an independent review of its CFU program, which now comprised some 605 units, and put out a tender for servicing CFU equipment and upgrading the CFU member database (2005, p4). It also developed a CFU website, which was accessible to the public and a social media website. In 2017, there were 546 CFUs and there were two CFU apps introduced in 2016 to assist with communication. The CFU administration app allows volunteers to update their contact and unit details and training records, while the CFU activity app makes it easier for volunteers to activate and deactivate during a bushfire and improves communication between CFU management and volunteers (FRNSW, 2017a, p51). An interactive CD was developed to help fire officers better understand prescribed burning. Fires stations were also identified to undertake the role of natural hazard stations, with crews, who once trained, will provide specialist support for storm recovery. The specialised skills will include working on roofs, chainsaw skills and safe working practices (p63).

In the area of the built environment, it moved from conducting investigations, inspections and identifying risks and hazards, to developing building codes and developing a code of practice for installations such as those required for expanded



polystyrene sandwich panels (EPSP). It has since then moved to cooperating with the CSIRO in research into the design and effectiveness of residential sprinklers, and supporting and advising industry, government and local planning authorities in managing fires and hazardous materials, and reducing risks (FRNSW, 2017a, p36).

The Annual Report 2011/2012 also suggests that the FRNSW was involved in researching, identifying and addressing major community risks, such as unsafe consumer products (e.g. ethanol fuelled fire places, compact fluorescent light globes, LPG-fuelled heaters, ceiling insulation and solar panels) and developing fact sheets (FRNSW, 2012, p58).

## Response

During 2004-05, the NSW Fire Brigade (NSWFB) enhanced its Urban Search and Rescue (USAR) capability, with USAR-1, a 32-tonne semi-trailer designed to transport the largest store of USAR equipment in Australia. The USAR resources provide faster response to building collapses and complex rescues, such as train crashes, and are a key component of the State's ability to deal with the consequences of a terrorist attack (FRNSW, 2017a, p62). The Commonwealth has identified the FRNSW as a critical partner in the national USAR capability development strategy.

The Annual Report 2011/12 indicates that FRNSW is the largest provider of rescue services, operating specialist rescue units in 182 locations. It has 2700 fire officers, qualified and registered as rescue operators (FRNSW, 2012, p79). Rescue operations have included rescuing people caught in transport, domestic and industrial incidents. Specially trained teams carry out alpine, vertical and specialist rescues. Its urban search and rescue unit was hoping to qualify as a Heavy International Rescue team classified by the United Nations. Its USAR capabilities include: USAR 1, a purpose built 32-tonne semi-trailer; USAR 2 and 3, purpose built pantechon trucks with USAR equipment caches; USAR 4, a specialist reconnaissance vehicle; and USAR 5 and 6, air-deployable USAR equipment caches, capable of sustaining 72 person-rescue teams for 10 days. The Australian Government has identified FRNSW as a crucial partner in its USAR capability development strategy and it has provided assistance after the Christchurch earthquake and the Japanese earthquake and tsunami. The Annual Report 2016/17 suggests that FRNSW had been accredited by the United Nations International Search and Rescue Advisory Group (INSARAG) as a heavy USAR Task Force for international response to disasters (FRNSW, 2017a, p29). It also introduced a new canine search capability.

In 2016-17, FRNSW responded to 12,234 non-fire rescue cases, including animal rescues. In that year, it also enhanced its flood rescue capability with 5 water-based flood rescue stations and 20 land-based rescue stations, with 127 water-based technician and 565 land-based flood rescue operators.

The FRNSW also delivers hazardous materials (Hazmat) expertise and equipment across the state. The resources include standard, intermediate and primary Hazmat response units that deliver breathing apparatus and specialised detection equipment to combat chemical, biological and radiological threats from industrial accidents or acts of terrorism (p62). During 2011-12, the FRNSW responded to a range of hazardous material incidents, which included downed power lines, electrical short circuits, gas leaks, and fuel and chemical spills.



Their 2011/12 Report also notes that increasingly, the FRNSW is being called to assist the Ambulance Service of NSW at medical emergencies. In 2011-12, it responded to 1052 medical emergencies, which included cardiac arrests, childbirths, snake bites and major trauma. All officers need to be trained in advanced first aid, oxygen resuscitation, use of automatic external defibrillators and basic patient assessment (FRNSW, 2012, p81).

The Annual Report 2016/17 states that the FRNSW responded to 15,541 hazardous material incidents in that year, and it continues to work with industry groups and government agencies to minimise the impact of Hazmat incidents on the public, including working with the bulk tanker industry to increase awareness of FRNSW's role. It also worked with the Australian Maritime Authority to assist in managing hazardous and noxious substances incidents on vessels at sea (FRNSW, 2017a, p27).

## Technology

During 2004-05, the NSWFB commenced a joint project with the NSW Rural Fire Service and the State Emergency Service aimed at identifying, selecting and implementing a joint Emergency Services Computer-aided Dispatch system (ESCAD) (NSWFB, 2005, p69). The ESCAD system was delivered in 2012 and included telephony and voice recording systems, operator consoles and IT hardware (FRNSW, 2012, p87). In 2017, the disaster-recovery site for ESCAD was moved from the SES-Wollongong facility to a refurbished site next to the new state-of-the-art FRNSW headquarters in Greenacre and provided varied multi-path power and communications (FRNSW, 2017a, p56). During 2017, the Automated Decision-Aid System for Hazardous Incidents (ADASHI) was interfaced with the ESCAD to enable a consistent view of incidents and access to critical operational information. Additional functionality was added to the system to allow greater flexibility in responding to incidents (p59). FRNSW is also moving from the analogue mobile radio base to digital frequencies (p59). During 2016-17, it also completed two joint radio network rollouts in partnership with the SES in the Murray region and installed 224 additional mobile data terminals in vehicles (now 430) (FRNSW, 2017a, p55).

In 2004-05, hydraulic structural entry equipment that incorporated latest technical innovations was being upgraded.

FRNSW also operated primary Hazmat units in 2004-05, which provided advanced capabilities in detection of toxic industrial chemicals, volatile substances and chemical warfare agents. The equipment included photo and flame ionisation detectors, chip measurement systems, radiation detectors and chemical warfare detectors. A mobile analytical vehicle enables FRNSW to carry out on-site analysis with specialised equipment such as a gas chromatograph-mass spectrometer. Also four head gas detectors were to be installed on all first response fire engines over the next three years.

By 2016-17, the FRNSW had a total fleet of 1579 vehicles, with 96 rescue and hazardous materials vehicles. Class 1 multi-purpose off-road capable tankers carry more water than urban fire engines. Some have Hazmat and primary rescue capability, and a number of tankers were commissioned with Compressed Air Foam Systems (CAFS), which increases the fire tankers extinguishing capability. The use of CAFS is increasing.

## Diversity

Overall, the FRNSW has tried to build its capabilities to meet the changing needs of the community and environment through investing in both its technological strength and its human resources. It has invested in its human resources through continued training and through recruitment, particularly in respect to improving the diversity of its workforce. It has specific recruitment strategies to help attract staff and then have work arrangements that would help in retaining the staff. Besides the more traditional training and exercise programs, the service has developed elearning modules (FRNSW, 2017a, p66) and Activity Based Working (ABW) devices (p58). It has also developed and implemented:

- An Equity, Diversity and Inclusion Strategic Framework to facilitate a more harmonious workplace culture (FRNSW, 2017a, p70)
- A new code of Conduct and Ethics to ensure harmonious workplace conditions (p64)
- A Resolving Workforce Complaints Policy to prevent and resolve workplace conflict (p72).

The 2013-14 Annual Report acknowledged that 'a diverse workforce within the FRNSW would assist in providing better services to the community, generate new ideas and increase tolerance and understanding in the workplace' (FRNSW, 2015, p27). It specifically stated that the:

*FRNSW is committed to building a workplace that:*

- *Reflects and values the diversity of the community it serves*
- *Respects individuals, accepting and celebrating differences*
- *Removes artificial and unnecessary barriers to progression. (FRNSW, 2015, p27)*

It recognised that the FRNSW came 'from a low base having traditionally attracted larger numbers of white Anglo Saxon males compared to other groups, and this is reflected in the workforce profile'. 'Traditional recruitment practices had only been marginally effective' and it was exploring other initiatives (FRNSW, 2015, p27).

It has also 'invested in culturally appropriate promotional materials and continued to participate in job markets aimed at attracting under-represented groups such as women, CALD groups and indigenous Australians to a career in firefighting' (p27).

It was also implementing the recommendations arising from the WorkCover Bullying Prevention Survey rolled out in 2012 to improve accountability and best practice (p28).

The sections below detail the particular steps the NSWFS has taken to improve the diversity of its workforce and also cater for the diversity of its clients over the years.

## ABORIGINAL AND TORRES STRAIT ISLANDER COMMUNITIES

In 2004-05, the NSWFB employed a full-time Aboriginal Services Officer to liaise and work with indigenous groups. It also developed the Aboriginal Community Fire Unit (CFU) program, where some training was provided to locals to become CFU

members. It tried to be part of the local community by participating in local festivals. It offered education programs in dangers of fire-setting and reducing fire risks. At the same time, training for the NSWFB personnel was provided as part of Sacred Sites Awareness Program to prevent accidental damage to sacred sites (NSWFB, 2005, p29).

By 2011-12, the FRNSW was working with local land councils to identifying opportunities to improve service delivery and setting up more CFUs in aboriginal communities. It also participated in a whole-of-government response to issues faced by local communities through Regional Co-ordination Management Groups. It ran safety campaigns such as Protect your Mob and piloted programs to assist local communities develop fire safety and prevention programs (FRNSW, 2012, p47).

It implemented strategies to attract and retain Aboriginal staff – Indigenous Careers Expo; NAIDOC celebrations. It launched two plans – Reconciliation Action Plan 2011/16 and Aboriginal Employment and Development action Plan 2011/13 – to enhance support for Aboriginal staff and encourage closer relationships with indigenous communities. It employed a full-time Aboriginal Services Officer to provide support and guidance to FRNSW staff, liaise and work with indigenous communities (FRNSW, 2012, p62).

In 2016-17, the FRNSW continued to develop partnerships with Aboriginal and Torres Strait Islander Communities including:

- Working with the land councils and other organisations to assist in implementing Home Fire Safety Checks (HFSC) and other prevention strategies
- Participating in a whole-of-government response to issues faced by local aboriginal communities through Regional Coordination Management Groups (RCMG) and Local Emergency Management Committees (LEMC). (FRNSW, 2017a, p46)

It supports events such as local festivals and rugby league, and partnerships with local and rural firefighters. It has partnerships with Aboriginal Pathways TAFE NSW through the Indigenous Fire and Rescue Employment Strategy (IFARES) program to assist local men and women become permanent firefighters. It provides a Certificate IV in fitness. Since IFARES inception in 2014, 29 graduates have become firefighters (p48).

## CALD COMMUNITIES

In 2004-05, a red VW Beetle known as Triple Zero Bug proved very successful in promoting key safety messages to CALD communities (NSWFB, 2005, p27).

In the area of prevention and preparedness of at risk community groups, especially CALD groups, the NSWFB stated its commitment to the Ethnic Affairs Priorities Statement (EAPS), as an important means of designing, implementing and measuring initiatives to increase community participation and access to its services. It also appointed a full time co-ordinator to oversee initiatives directed towards groups from culturally and linguistically diverse groups, and to monitor and report on the uptake of EAPS across the organisation. It also developed a multi-lingual CD for critical fire safety information (NSWFB, 2005, p27). By 2011-12, it had identified and addressed the safety needs for at-risk groups, including children, the elderly, people



with a disability and members of the CALD communities. It had developed an online game for children, and was working on ways to engage with communities, such as participation in Harmony Day and developing strategic partnerships with various groups and working with newly arrived migrants (FRNSW, 2012, p48). By 2017, the FRNSW was targeting these groups to build community resilience (2017a, p45).

## OTHER COMMUNITIES

In 2011-12, employment of a diverse range of people was actively promoted under the theme of 'Everyone Being Welcome', with video clips created and posted online showcasing job opportunities (FRNSW, 2012, p62).

It also celebrated International Women's Day – highlighting the important contribution of female staff to the work of FRNSW, implementing strategies to recruit, develop and retain women in the workforce (p62).

In 2016-17, it created the role of a Family Support Officer and later an administration assistant role specifically to assist in disability employment (FRNSW, 2017a, p70).

It was actively attempting to improve the proportion of women in its workforce (p71).

FRNSW also partnered with the Deaf Society of NSW, Red Cross, NSW Rural Fire Service, NSW State Emergency Service and Sydney University in the 'Get Ready' project that increases emergency preparedness in the deaf community. In 2016-17, it secured NSW Government funding under the Smoke Alarm Subsidy Scheme (SASS) to assist with the installation of 346 visual/tactile smoke alarms to wake the deaf, deaf/blind and hard of hearing (FRNSW, 2017a, p6).

In 2016-17, FRNSW had an established women's staff network, an LGBTIQ staff network and an Aboriginal and Torres Strait Islander employee network. It also participated in the annual Sydney Mardi Gras to show its support for the community and its LGBTIQ employees. It also has a variety of awareness raising and educative events celebrating diversity. These include Harmony Day, Reconciliation Week, NAIDOC week, International Women's Day and the UN Refugee Day (FRNSW, 2017a, p70). In 2016-17, it exceeded the Public Service Commission's target for employment of candidates from the Refugee Employment Pool (p64).

Overall, it has improved the proportion of women in its workforce from 8.03% in 2012-13 to 10.17% in 2016-17. Women represented 6.14% of the firefighting staff, 16% of the senior executives and 56.44% of administration and trades staff in 2016-17 (FRNSW, 2017a, p158).

The proportion of people with Aboriginal and Torres Strait Islanders backgrounds had increased from 2.25% in 2012-13 to 3.33% in 2016-17. They represented 3.78% of the firefighting staff in 2016-17 (p158).

The proportion of people whose first language was not English had increased from 1.56% in 2012-13 to 2.44% in 2016-17, with the highest proportion (16.67%) being among the administrative and trades staff (p158).

However, the proportion of people with a disability had reduced from 1.29% in 2012-13 to 0.71% in 2016-17, and most were among the administrative and trades staff – representing 3.56% of that workforce (p158).

## TRAINING

Training in the FRNSW has progressed from simple recruit, and professional development incident management training to joint training exercise with other emergency services in areas, such as urban search and rescue, flood rescue and national and multiagency counter terrorism. The FRNSW has also developed elearning and online courses. By 2017, it had increased its suite of elearning courses to 63, upgraded and improved its Learning Management System (Learning Hub) which led to greater functionality and improved reporting. It had also developed a new ePortfolio System to enable firefighters to submit portfolios electronically. Progression programs were also developed that blended learning with practical work (FRNSW, 2017a, p66).

## SUMMARY

The FRNSW recognised early in 2004-05 that it faced challenges from drought, terrorism, global warming, aging population and natural disasters. It saw its strategic direction then to provide community safety by managing risk through prevention and preparedness, developing its capability and managing emergencies through response and recovery. By 2011-12, it identified particular areas of the above challenges, such as strengthening community resilience, specifying the impacts of environmental change to include droughts due to El Nino followed by flooding and the increasing cost of electricity, gas, fuel and water, and the need for more environmentally sustainable fighting methods due to the diminishing water availability.

It also added sections of the community that presented challenges, rather than just an ageing population, and included the increased risk of social dislocation among the increasing proportions of single person household and demographic changes brought about by increased migration and the increases in coastal communities and decline in rural communities. It also specified the particular challenges posed by the advances in technology, the high costs of such technology and the need for upskilling the workforce. By 2016-17, the FRNSW was seeing the need for it to be admired and respected, as well as being community-based.

This change in community direction may have been due to the investigations into its operations by KPMG and ICAC. Both investigations found problems with its workplace culture and management capability. Hence, the organisations has been taking steps to improve this by retraining its existing workforce and recruiting staff from diverse backgrounds to generate new ideas, and increase tolerance and understanding. It has undertaken several initiatives to recruit from Aboriginal and Torres Strait Islander communities, more women and have closer ties with CALD communities. It has improved its response capability through significant technological changes, such as the Automated Decision-Aid System for Hazardous Incidents (ADASHI), interfacing with its Emergency Services Computer-aided Dispatch system (ESCAD). This has also required that it improve the capability of its workforce through training, including through elearning. Increasingly the FRNSW is also being called out to assist the Ambulance Service at medical emergencies, which has required increased training in areas which are quite distinct from the traditional roles of firefighters.



TABLE 2: SUMMARY OF RELEVANT INITIATIVES FROM FRNSW AND ITS PREDECESSOR PLANS AND ANNUAL REPORTS

		2004-05	2010-12	2016-17
<b>Strategic capabilities</b>	<b>Name</b>	<b>NSW Fire Brigade</b>	<b>Fire and Rescue NSW</b>	<b>Fire and Rescue NSW</b>
		State Rescue Board of NSW	State Rescue Board	NA
	Challenges	Need to restructure as name no longer reflects challenges of drought, terrorism, global warming, aging population and natural disasters	Increasing frequency of extreme events, climate change – El Nino and drought, La Nina. Increasing cost of electricity, gas, fuel and water. Rapidly changing society – composition, population growth, ageing, culturally diverse. Advances in technology: combination of GPS, robotics, sensors, low level automation, networked computer systems, smart home integration and consumer technology.	Be an essential arm of an integrated and seamless emergency services sector within NSW and nationally
Prevention, preparedness and response	Bushfire mitigation	Community Fire Units (CFUs) key component of bushfire information and education strategy. Set up another 42 CFUs, taking the total to 292. \$1.2 million to establish further 100 additional CFUs and funding supplemented over 2 years by \$580 000 from Natural Disaster Mitigation program.	In 2012, 605 CFUs. Commissioned an independent review of CFU program; tender for servicing CFU equipment; upgrading CFU member database; developing CFU website accessible now to public; developing a social media website; and collaboration with experts to strengthen community resilience.	In 2017, 546 CFUs. Two CFU apps were introduced in 2016 to assist communication with CFUs. The CFU Admin app allows volunteers to view and update their contact and unit details and training records. The CFU Activity app makes it easier for volunteers to activate and deactivate during a bushfire, improves communication between CFU management and volunteers and provides real time information.
	Built environment	Inspections, advise, carry out investigations Identify major risks and hazards Building inspections in hospitals, aged care facilities and hazardous sites	Inspected 1077 commercial, industrial and residential buildings in 2011-12 Developed a code of practice for installation of expanded polystyrene sandwich panels (EPSP) designed to enhance safety Building code development	Research with CSIRO to design and build unit for testing residential sprinklers and 396 inspections Support and advise industry, Government and local planning authorities to better manage fire and hazardous materials risks in built environment – fire safety in: health care; public housing; accommodation for disabled; and public schools building code development
	Response	Urban Search and Rescue (USAR) capability enhanced with USAR 1 – a 32-tonne semi-trailer to transport USAR equipment, which provides faster response to building collapses and complex rescues Hazmat capability	Operating specialist rescue units in 182 locations, with 2700 qualified and registered rescue operators. Specially trained teams to carry out alpine, vertical and specialist rescues. Capabilities include: USAR 1; USAR 2&3, purpose built pantechicon truck; USAR 4, a specialist reconnaissance vehicle; USAR 5&6, air-deployable equipment caches able to sustain 72 persons for 10 days. Increased responses to medical emergencies.	Recognised by the UN as a heavy USAR Task Force for international response to disasters Enhanced flood rescue capability Working with industry groups and Australian Maritime Authority to assist in managing hazardous and noxious materials in industry and on vessels at sea
Technology		Emergency Services computer-aided dispatch system (ESCAD) selected Hazmat units with advanced capabilities for detection of toxic materials	ESCAD delivered in 2012, included telephony and voice recording system, operator consoles and IT hardware	ESCAD moved to new site and the automated decision-aid system for hazardous incidents was interfaced with ESCAD, also moving from analogue to digital frequencies Hazmar and other tankers equipped with CAFs

## **SOUTH AUSTRALIAN STATE EMERGENCY SERVICES**

The South Australian State Emergency Service's (SASES) articulated role as a reliable and trusted volunteer service building safe and resilient communities has remained the same since 2011-12, as has its specified mission to minimise loss of life, injuries and damage from emergencies and natural disasters.

It should be noted that there was no Annual Report for 2016-17 available. However, there was one for 2015-16 (SASES 2016a), a Corporate Plan for 2015-18 (SASES 2015), and a Strategic Directions document for 2017-20 (SASES 2017a).

### **STRATEGIC CHALLENGES**

The 2004-05 Annual Report does not mention any strategic challenges specifically, however it does mention that 'recent years have seen a much greater involvement by SASES Units in the mitigation of the effects of storm and flood' (SASES, 2005, p10). It identified its strategic direction to be emergency planning and management, and emergency responses. The 2011-12 Annual Report states that it will need to 'focus on reducing the impacts from flooding, storms and extreme weather, enhancing emergency management capabilities and improving levels of community resilience' (SASES, 2012, p20). It also notes that with the adoption of the National Disaster Resilience Strategy, there had been a shift in expectations of emergency services. In 2015-16, it noted that it needed strategies to focus on building knowledge and understanding of the risks storms, extreme heat and flooding pose to our communities and increase community awareness, preparedness and risk reduction' (SASES, 2016a, p13).

### **PREVENTION, PREPAREDNESS AND RESPONSE**

The 2004-05 Annual Report states that the SASES had adopted the Preparedness, Prevention, Response and Recovery (PRRR) concept to all incident planning and management. Hence, it needed trained and disciplined rescue personnel in response to a broad range of emergency incidents (SASES, 2005, p11). It also needed to plan for disaster situations, and provide community education and awareness programs. It provided a range of rescue and support services (including traffic accident rescue, storm and flood damage, land search, animal rescue, vertical rescue, marine search and rescue and general and disaster rescue) (from pp 14-15). In 2013-14, it provided executive officer support to all Zone Emergency Management Committees (ZEMCs) (SASES, 2012, p17).

Staff also participated in risk assessment workshops based on the National Emergency Risk Assessment Guidelines (NERAG). It also conducted several Extreme Heat and Extreme Storm risk assessment workshops in collaboration with the Bureau of Meteorology and SAFECOM. It established a Community Engagement Unit in May 2012, which had three roles: community education including FloodSafe, StormSafe and (later) HeatSafe programs; recruitment and retention advice and support for SASES units; and provision of support for SASES promotions and public relations (SASES, 2012, p13). In 2015-16, it articulated that it is needs to be informed by evidence-based research. It was planning to



establish a flood intelligence and planning team within the service, and enhancing its incident management capabilities (SASES, 2016a, p26).

## TECHNOLOGY

In 2004-05, the SASES recognised the need to use modern communication technology involving a variety of systems, including fixed and mobile phones, pagers, the Government radio network, and other long range networks. In 2011-12, the SASES was rolling out the SA Government Radio Network (GRN) digital equipment, and introducing the SA Computer Aided Dispatch system (SACAD), which had interagency interoperability (SASES, 2012, p14). In 2015-16, it was replacing its GRN radios, upgrading its core IT systems, and further developing its integrated operational systems, including the SES Incident and Information Management System (SESIIMS) (SASES, 2016a, p6).

TABLE 3: SUMMARY OF RELEVANT INITIATIVES FROM SASES AND ITS PREDECESSORS, PLANS AND ANNUAL REPORTS

	2004-05	2011-12	2015-16
Strategic challenges	Recent years have seen a much greater involvement by SASES Units in the mitigation of the effects of storm and flood	Focus on reducing the impacts from flooding, storms and extreme weather, enhancing emergency management capabilities and improving levels of community resilience	Needed strategies to focus on building knowledge and understanding of the risks storms, extreme heat and flooding pose to our communities and increase community awareness, preparedness and risk reduction
Prevention and preparedness	Adopted the Preparedness, Prevention, Response and Recovery (PPRR) concept to all incident planning and management; hence, it needed trained and disciplined rescue personnel in response to a broad range of emergency incidents. It also needed to plan for disaster situations and provide community education and awareness programs.	Risk assessment workshops by Community Emergency Risk Management (CERM) with a number of councils Community education including Floodsafe, Stormsafe and Heatsafe educating communities to be resilient	Needed to be informed by evidence-based research Was planning to establish a flood intelligence and planning team within the service and enhancing its incident management capabilities
Technology	Need to use modern communication technology, involving a variety of systems, including fixed and mobile phones, pagers, the Government radio network and other long-range networks	Rolling out the SA Government Radio Network (GRN) digital equipment and introducing the SA Computer Aided Dispatch system (SACAD), which had interagency interoperability	Replacing its GRN radios, upgrading its core IT systems and further developing its integrated operational systems including the SES Incident and Information Management System (SESIIMS)



## BACKGROUND TO THE SASES WORKFORCE STRUCTURE

The Annual Report 2015-2016 (SASES, 2016a) states that the SASES 'response capability was improved through investments in assets, infrastructure and equipment, and through increasing the range and accessibility of training courses available for volunteers' (p6). It increased the number of training staff temporarily to develop curriculum and training materials and continued its investment in on-line learning technologies (p6).

However, the SASES Workforce Plan indicates that:

*In the previous nine years the South Australian State Emergency Service (SASES) has experienced difficulties in relation to volunteer training, retention and support to units. In December 2010, volunteer numbers within the service had dropped to an all-time low, having experienced a twenty per cent decline in membership over the five preceding years. (SASES, 2016b, p8)*

At the same time, there was an 80% decline in volunteer trainers and assessors reducing the capability of the organisation to build up its workforce. This was happening while call out rates had a 180% increase in the number of jobs over the ten-year period to 2014 (p8).

It further states:

*An extensive culture survey conducted in 2009 identified a number of workforce issues that had an impact on staff and volunteer satisfaction and an action plan was developed to address the priority issues. Following this in 2013, a 'pulse' survey was undertaken to check progress. Findings from this process highlighted an ongoing need to address key areas which indicated perceptions of poor performance or low satisfaction. (SASES, 2016b, p8)*

Furthermore the SASES reports that 'Progressive savings targets applied to the South Australian Fire and Emergency Services Commission (SAFECOM) over the last six years had also resulted in a substantial decline in corporate support to SASES' (SASES, 2016b, p8), including 'heavy reductions in strategic services, corporate services and critical operational support such as Volunteer Support Branch (staffing now less than half previous level)' (p8).

To address these issues, the SASES undertook a review of its staffing arrangements in 2011-12 and 'included the development of a comprehensive discussion and issues paper, the conduct of several staff and volunteer workshops and bilateral meetings and discussions with a broad range of stakeholders' (p8).

It goes on to say:

*The 2012-13 Workforce Plan described a new structure for SASES which reduced the layers of management, reduced the number of administrative regions, adopted ten new districts and centralised administrative, business and finance support functions. During 2012, appointments were made for the two new Regional Commander and 10 District Officer positions and administration, business and finance support functions were centralised.*



*Over this same period, two reforms were implemented which involved the establishment of new volunteer-based entities: the Community Engagement Unit (CEU) and the Workplace Health Safety (WHS) Support Team. In addition, funding was secured under the Natural Disaster Resilience Program to establish and pilot a volunteer recruiting capability within the CEU.*

*During 2014 the Government committed to reforming the fire and emergency services sector to improve community safety outcomes. (SASES, 2016b, p8)*

It stated 'the need for aligning, harmonising and modernising the sector's organisational arrangements to ensure frontline people were supported with consistent doctrine and contemporary integrated support services' (p8).

The 2015-2016 Budget process provided additional funding to SASES for three new initiatives. The Report suggests that this will support recruitment of an additional 3.5 ongoing FTEs and 4x12 month contract FTEs (SASES, 2016b, p8).

It further suggests that:

*Impacts of an ageing workforce would be realised in 2015-2016 with three confirmed retirements and the likelihood of other staff resignations/retirements throughout the year generating recruitment activity and testing succession planning and knowledge management. (SASES, 2016b, p8)*

In 2015, the SASES successfully applied to the Natural Disaster Resilience Program State Strategic Project for funding to map the SASES workforce to help form a broader workforce development plan. Overall, the project concluded that the 'sector's workforce was not well defined and not only is there a need for individual development, but there are also potential gaps in understanding of required emergency management capabilities at on organisational level' (Government of South Australia n.d., p5).

The only report to mention promoting diversity and inclusion in the workforce was 'Strategic Directions 2017-2020' (SASES, 2017a). The SASES Annual Report 2015-16 (2016a) did have a table reflecting the gender diversity of its workforce. In several age brackets, it had a higher proportion of females than the 2014 benchmark. For example, in the 40 to 49 age group 23.5 % of the workforce in that age bracket was female compared to the workforce benchmark of 11.1%. It did not have anyone with a disability on its workforce and no reference was made to people from CALD or Aboriginal and Torres Strait Islander backgrounds (SASES, 2017a, Appendix 1, p26).

The Strategic Directions Report 2017-2020 also specifies the need to support and sustain the volunteer workforce through:

- developing and implementing a flexible, volunteering model;
- developing and implementing volunteer retention strategies;
- providing training to improve skills in managing volunteers;
- improving training and implementing programs to prevent further losses in the volunteer workforce, but making efforts to expand the workforce.



(SASES 2017a, p5)

The SASES Corporate Plan 2015-2018 specified certain objectives, which included:

- SASES has a program that sustains a positive culture based on SA Fire and Emergency Service Values and Behaviours Framework.
- SASES provides a safe working environment for volunteers, staff and contractors. (SASES 2015, p11)

## SUMMARY

The SASES has experienced difficulties in relation to its volunteer training and retention. Some of these difficulties are due to the progressive savings targets of the South Australian Fire and Emergency Services Commission. It undertook a review of its staffing arrangements in 2011-12 and developed a new workforce plan in 2012-13. Since then it has a significant workforce mapping project. Its Strategic Directions 2017-2020 report does mention the need to promote diversity and inclusion in its workforce and also the need to develop and implement a flexible volunteering model, and volunteer retention strategies and improving skills to manage volunteers.



## CONCLUSIONS

Overall, both the QFES and the FRNSW have had significant changes in their strategic capabilities, mainly due to the strategic challenges they perceived as facing them. In 2004-05, the QFES saw its strategic challenge as primarily enhancing its rural/remote and indigenous capacity. By 2016-17, it saw itself as an increased and diverse customer base facing; an increase in the severity and frequency of natural disasters; changing community expectations; changes in the volunteer landscape; and an increase in crime and safety threats due to technological advancements, globalisation and violent extremism (QFES, 2017c, p10). It has met these challenges through training, recruitment of a more diverse and capable workforce, and technological advancements, such as interactive incident information maps. To accommodate and maintain this diverse workforce, it has put into place strategies to improve its workplace culture to ensure a safe, inclusive and secure working environment. It also has a new human resources management system (NEXUS) that helps in recruitment and retention of a diverse workforce by helping to tailor to individual needs such as flexible working hours

The FRNSW recognised early in 2004-05 that it faced challenges from drought, terrorism, global warming, aging population and natural disasters. At the time, it saw its strategic direction as providing community safety by managing risk through prevention and preparedness, developing its capability and managing emergencies through response and recovery. By 2011-12, it identified particular areas of the above challenges, such as strengthening community resilience, specifying the impacts of environmental change to include droughts due to El Nino followed by flooding, the increasing cost of electricity, gas, fuel and water, and the need for more environmentally sustainable fighting methods due to the diminishing water availability. It also added sections of the community that presented challenges, rather than just an ageing population, and included: the increased risk of social dislocation among the increasing proportions of single person household; demographic changes brought about by increased migration; the increases in coastal communities; and decline in rural communities. It also specified the particular challenges posed by the advances in technology, the high costs of such technology and the need for upskilling the workforce. By 2016-17, the FRNSW was seeing the need for it to be admired and respected as well as being community based. This change in community direction may have been due to the investigations into its operations by KPMG and ICAC. Both investigations found problems with its workplace culture and management capability. Hence, the organisations has been taking steps to improve this by retraining its existing workforce and recruiting staff from diverse backgrounds to generate new ideas, and increase tolerance and understanding. It has undertaken several initiatives to recruit from Aboriginal and Torres Strait Islander communities, more women and have closer ties with CALD communities. It has improved its response capability through significant technological changes, such as the Automated Decision-Aid System for hazardous incidents (ADASHI) interfacing with its Emergency Services computer-aided dispatch system (ESCAD). This has also required that it improve the capability of its workforce through training, including through *elearning*.



Increasingly, the FRNSW is also being called out to assist the Ambulance Service at medical emergencies, which has required increasing training in areas which are quite distinct from the traditional roles of firefighters.

The SASES has experienced difficulties in relation to its volunteer training and retention. Some of these difficulties are due to the progressive savings targets of the South Australian Fire and Emergency Services Commission. It undertook a review of its staffing arrangements in 2011-12 and developed a new workforce plan in 2012-13. Since then it has a significant workforce mapping project. Its Strategic Directions 2017-2020 report does mention the need to promote diversity and inclusion in its workforce, and also the need to develop and implement a flexible volunteering model, volunteer retention strategies and improving skills to manage volunteers.

## TRENDS IN TASKS UNDERTAKEN BY THE CASE STUDY ESOS

This section provides an analysis of trends in the types of incidents attended. These data are indicators of the changing mix of tasks undertaken by ESOs. The best run of data we have is for FRNSW. Data are available from 2008/09 to 2016/17 for various categories of incidents attended. QFES has extraordinarily fine-grained data on incidents attended, but unfortunately only for the three years since it has been established, 2015-17.

We have aggregated the detailed QFES data into the same categories as used by FRNSW. However, in the three years for which data are available in Queensland, no particular trends have emerged. Given the duration of its data, the trend analysis focuses on New South Wales.

Table 4 for NSW shows that overall, the incident and emergencies attended has fallen by about 10% in the eight years to 2016/17 from 137,297 in 2008/09 to 123,711 in 2016/17. It also suggests that there have been important shifts in the types of tasks undertaken by FRNSW. There has been a decline in fire and explosions attended of almost 32% over the period, while the number of non-fire rescue calls have increased by 27% over the same period. System-initiated false alarms which comprise almost 40% of all call outs have declined by 12.6% since 2009/10. To gain a better understanding of these trends, Figures 2 and 3 provide a breakdown of the main types of incidents that have shown a particularly strong trend over the period.

TABLE 4: FIRE AND RESCUE NSW, NUMBER AND TYPE OF INCIDENTS AND EMERGENCIES ATTENDED (FRNSW ANNUAL REPORTS)

	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Per cent change since 2008/09
Total fires & explosions	31,929	31,036	26,607	25,564	28,884	25,341	21,952	22,287	21,784	-31.8%
Total non-fire rescue calls	9,618	10,711	10,859	11,220	10,745	11,067	11,448	11,520	12,234	27.2%
System initiated false alarms	n.a.	52,648	52,502	52,233	49,181	46,384	49,092	45,905	46,013	-12.6%*
All other emergencies & incidents	105,368	51,588	51,832	52,938	55,542	55,237	56,953	53,817	55,914	8.4%
Total fires, explosions & other emergencies	137,297	135,272	130,941	130,735	133,607	126,962	127,997	122,009	123,711	-9.9%

NOTE: \* SINCE 2009/10.

Figure 2 shows the major trends in the types of call outs for FRNSW exhibiting substantial change. The number of structure, vehicle and rubbish fires attended has declined substantially, presumably reflecting better prevention and management strategies for these types of fires.



On the other hand, calls for medical assistance have increased by almost 15% per annum in the period to 2016/17 from 2009/09. This reflects a new non-disaster related capability developed by FRNSW. As first responders, their efforts are well-rewarded in terms of lives saved. Other non-fire rescues also increased substantially.

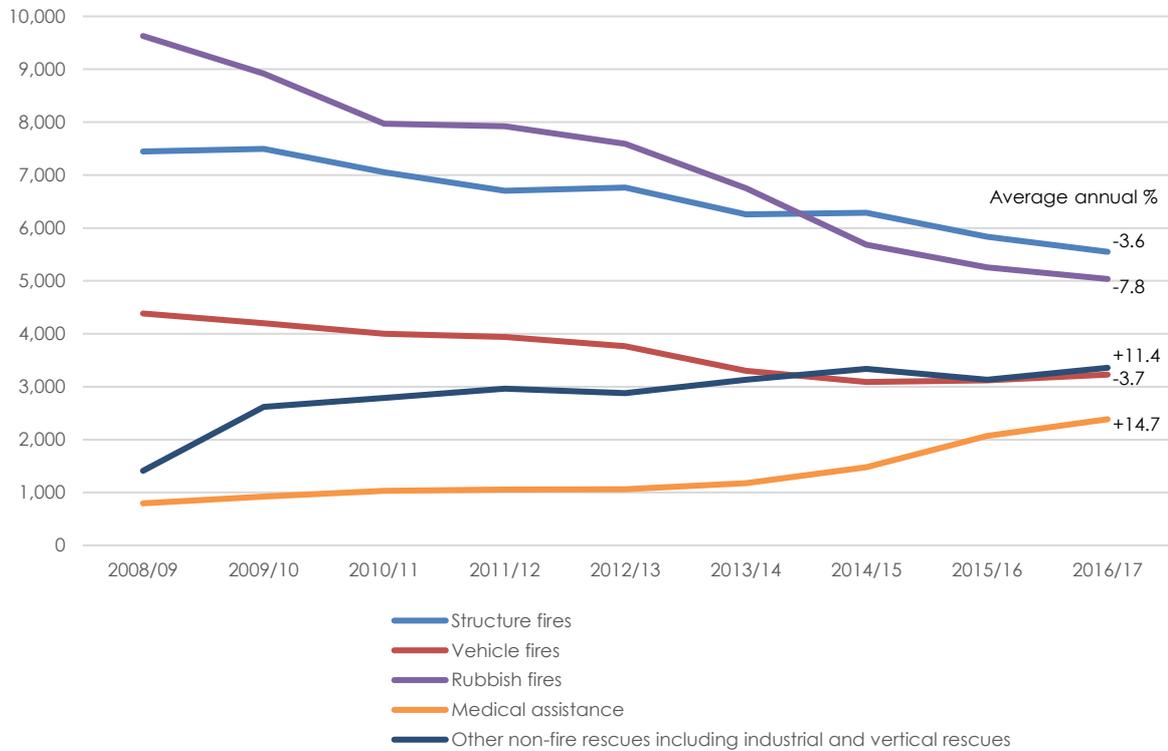


FIGURE 2: FRNSW TRENDS IN SELECTED INCIDENTS AND EMERGENCIES ATTENDED (FRNSW ANNUAL REPORTS)

Figure 3 shows the trends in the more climate-influenced incidents and emergencies, such as bush and grass fires, and storms, floods and other natural disasters. Both have shown a downward trend, although with considerable climate-related variability. In particular, the number of call outs for bush and grass fires has fallen by an average annual rate of 5.1%, while storms and floods call outs have declined by 2.5% per annum.

The declining trend in bush and grass fires, particularly given the metropolitan focus of FRNSW, is likely to be associated with the capability developed in preparation and planning leading to a greater emphasis on this aspect of fire management by FRNSW and engagement with the community.

The other striking aspect of the chart is the strong negative correlation between the number of call outs for fires and storms/floods. It would appear that the high bushfire years are associated with low storms and floods, and vice versa. This was especially the case in 2012/13, when bushfire and grass fires call outs peaked at over 10,000, while those for floods and storms fell to under 4000.

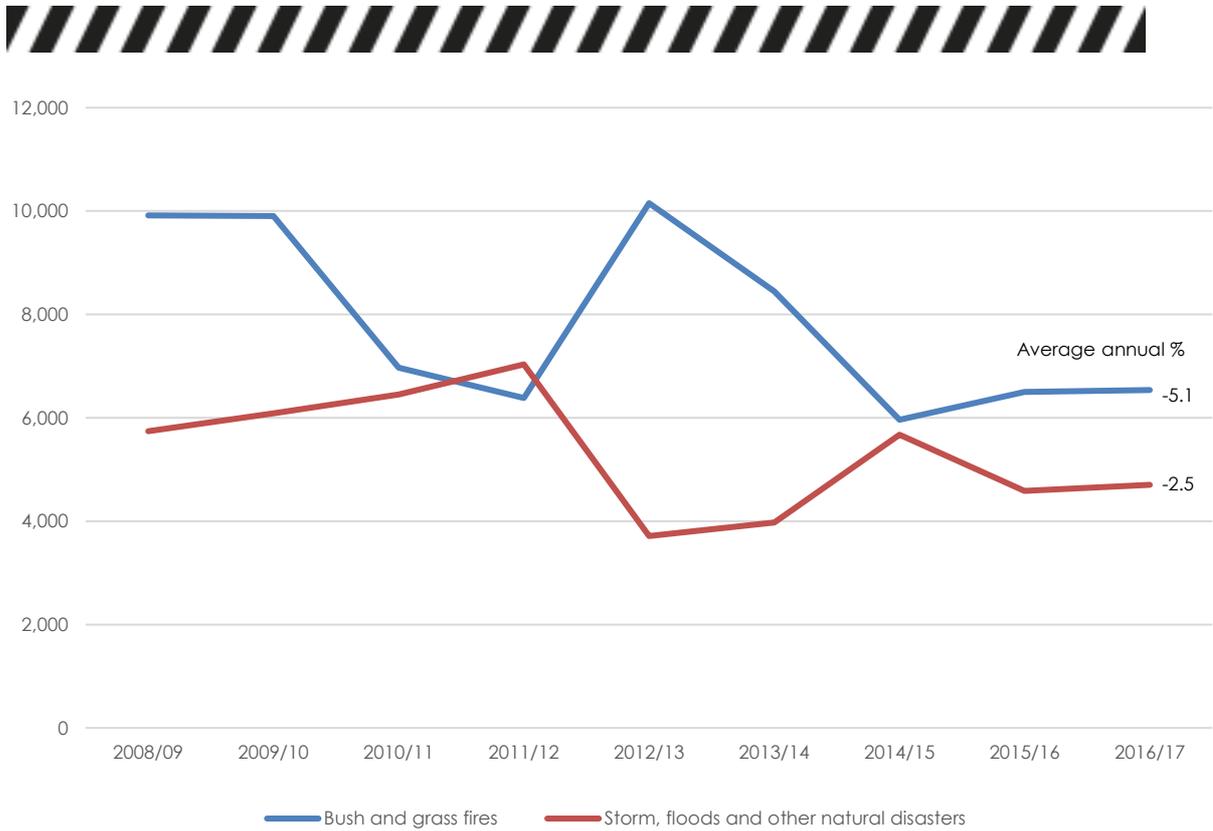


FIGURE 3 FRNSW TRENDS IN BUSH AND GRASS FIRES, AND STORMS, FLOODS AND OTHER NATURAL DISASTER INCIDENTS, AND EMERGENCIES ATTENDED (FRNSW ANNUAL REPORTS)

### SUMMARY

This analysis of FRNSW data demonstrates that major changes have occurred in the mix of work undertaken by FRNSW. Fire-related call outs have fallen, while those of non-fires have increased. False alarm call outs have also declined. The reason for this shift has been the significant decline in call outs for structure fires and rubbish. Given the efforts to increase capability in fire prevention, it is reasonable to suggest that these capability changes have contributed to these reductions.

On the other hand, the rapid increase in medical assistance call outs has been enabled by the development of a non-disaster capability in FRNSW. While these are currently a small proportion of total call outs, they are growing very rapidly indicating a strong community need for this service.



## REFERENCES

- Allison M. *Queensland Fire and Emergency Services independent review of an incident involving a Queensland Fire and Emergency Services employee*. Brisbane: Department of Premier and Cabinet; 2014. At <https://www.premiers.qld.gov.au/publications/categories/reports/qfes-report.aspx>
- COAG. *National Strategy for Disaster Resilience: building the resilience of our nation to disasters*. Canberra: Council of Australian Governments; 2011. At <https://www.ag.gov.au/EmergencyManagement/Documents/NationalStrategyforDisasterResilience.PDF>
- De Vita CJ, Fleming C, Twombly EC. *Building non-profit capacity: a framework for addressing the problem*. In CJD De Vita, C Fleming (eds). *Building capacity in non-profit organisations*. Washington DC: The Urban Institute; 2001.
- Department of Community Safety. *2011-12 annual report*, Brisbane: Queensland Government; 2012. At <https://publications.qld.gov.au/dataset/qcs-annual-reports/resource/00265c20-e6c9-4869-ab81-381e2fd89491>
- Department of Emergency Services. *Annual report 2004-05*. Brisbane: Queensland Government; 2005. At [https://www.ambulance.qld.gov.au/docs/DES\\_Annual\\_Report\\_2004\\_05.pdf](https://www.ambulance.qld.gov.au/docs/DES_Annual_Report_2004_05.pdf)
- FRNSW. *Annual report 2011/12: gearing up for the future*. Sydney: Fire and Rescue New South Wales; 2012. At <https://www.fire.nsw.gov.au/page.php?id=453>
- FRNSW. *Future outlook: future directions for Fire and Rescue NSW towards 2033*. Sydney: Fire and Rescue New South Wales; 2013. At <https://www.fire.nsw.gov.au/gallery/files/pdf/publications/futureoutlook.pdf>
- FRNSW. *2015. Annual report 2013/14*. Sydney: Fire and Rescue New South Wales, Sydney, at <https://www.fire.nsw.gov.au/page.php?id=453>
- FRNSW. *Annual report 2016/17*. Sydney: Fire and Rescue New South Wales; 2017a. At <https://www.fire.nsw.gov.au/page.php?id=453>
- FRNSW. *Equity, diversity and inclusion policy*. Sydney: Fire and Rescue New South Wales; 2017b. At <https://www.fire.nsw.gov.au/page.php?id=9250>
- Government of South Australia. *South Australian emergency management workforce mapping project*. Adelaide; n.d. At [http://www.ses.sa.gov.au/site/about\\_us/publications/emergency\\_management.jsp](http://www.ses.sa.gov.au/site/about_us/publications/emergency_management.jsp)
- Guthrie H. *Building organisational capability the private provider way*. Paper presented at the Annual Australian Council of Independent Vocational Colleges Conference, Sydney, 27 June 2008. At [https://www.ncver.edu.au/\\_data/assets/file/0022/8482/buildingorgcap\\_june08\\_hg.pdf](https://www.ncver.edu.au/_data/assets/file/0022/8482/buildingorgcap_june08_hg.pdf)
- ICAC. *Report under Section 14 (2) of the Independent Commission Against Corruption ACT 1988 to Fire and Rescue NSW and the Minister for Police and Emergency Services*. Sydney: Independent Commission Against Corruption; June 2011. At <https://www.fire.nsw.gov.au/gallery/files/pdf/publications/ICACreport.pdf>
- KPMG. *NSW fire brigades: review of workplace conduct governance, processes and culture*. Final Report to NSW Fire Brigades. Sydney; June 2010. At [https://www.fire.nsw.gov.au/gallery/files/pdf/news/2010/Full\\_KPMG\\_Report.pdf](https://www.fire.nsw.gov.au/gallery/files/pdf/news/2010/Full_KPMG_Report.pdf)
- NSWFB. *Annual report 2004/05*. Sydney: New South Wales Fire Brigade; 2005. At <https://www.fire.nsw.gov.au/page.php?id=453>
- Office of Emergency Management. *The State Rescue Board of NSW (SRB)*. Sydney; 2017. At <https://www.emergency.nsw.gov.au/Pages/about-us/state-rescue-board/state-rescue-board.aspx>
- Parliament of New South Wales. *Inquiry into emergency services agencies*. Sydney: Legislative Council; 11 May 2017. At: <https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2442>
- QFES. *Building on our past, creating our future: our strategy*. Brisbane: Queensland Fire and Emergency Services; 2017a. At <https://www.qfes.qld.gov.au/about/Documents/Our%20Strategy/QFES-Our-Strategy-April-2017.pdf>
- QFES. *QFES statement of cultural intent*, Brisbane: Queensland Fire and Emergency Services; 2017b. At <https://www.qfes.qld.gov.au/about/Pages/cultural-intent.aspx>
- QFES. *Annual report 2016-2017*. Brisbane: Queensland Fire and Emergency Services; 2017c. At <https://www.qfes.qld.gov.au/about/annualreport/Pages/Annual-Report-2016-2017.aspx>
- QFES. *Our future direction*. Brisbane: Queensland Fire and Emergency Services; n.d. At <https://www.qfes.qld.gov.au/documents/QFES-Future-Direction.pdf>
- SASES. *Annual report of the South Australian State Emergency Service 2004-05*. Adelaide: South Australian State Emergency Service;; 2005. At [http://www.ses.sa.gov.au/site/about\\_us/publications/annual\\_reports.jsp](http://www.ses.sa.gov.au/site/about_us/publications/annual_reports.jsp)
- SASES. *Annual report 2011-2012: building safe and resilient communities*. Adelaide: South Australian State Emergency Service; 2012. At [http://www.ses.sa.gov.au/site/about\\_us/publications/annual\\_reports.jsp](http://www.ses.sa.gov.au/site/about_us/publications/annual_reports.jsp)
- SASES. *Corporate plan 2015-2018*. Adelaide: South Australian State Emergency Service; 2015. At [http://www.ses.sa.gov.au/site/about\\_us/publications.jsp](http://www.ses.sa.gov.au/site/about_us/publications.jsp)
- SASES. *Annual report 2015-2016*. Adelaide: South Australian State Emergency Service; 2016a. At [http://www.ses.sa.gov.au/site/about\\_us/publications/annual\\_reports.jsp](http://www.ses.sa.gov.au/site/about_us/publications/annual_reports.jsp)
- SASES. *Workforce plan 2015-2016*. Adelaide: South Australian State Emergency Service; 2016b.
- SASES. *Strategic directions 2017-2020*. Adelaide: South Australian State Emergency Service; 2017a. At [http://www.ses.sa.gov.au/site/about\\_us/publications/annual\\_reports.jsp](http://www.ses.sa.gov.au/site/about_us/publications/annual_reports.jsp)
- SASES. *Workforce plan 2016-2017*. Adelaide: South Australian State Emergency Service; 2017b.
- Smiley D. *Diversity, the art of making a difference, diversity and action programs in the UK*. Melbourne: Fire, Police and Ambulance Services, Emergency Services Foundation; 2010. At



[http://www.mfb.vic.gov.au/media/docs/Report\\_on\\_Positive\\_Action\\_Programs\\_in\\_UK\\_Fire\\_Police\\_and\\_Ambulance\\_Services-3e545a93-82c6-46b9-949d-be78406ad6d8-0.pdf](http://www.mfb.vic.gov.au/media/docs/Report_on_Positive_Action_Programs_in_UK_Fire_Police_and_Ambulance_Services-3e545a93-82c6-46b9-949d-be78406ad6d8-0.pdf)

WebFinance Inc. *BusinessDictionary*. Austin; 2017. At

<http://www.businessdictionary.com/definition/organizational-capability.html>

Young C, Pyke J, Maharaj N, Rasmussen B, Jones R. *Diversity and inclusion: building strength and capability literature review*. Report to Bushfire and Natural Hazards CRC. Melbourne: VISES, Victoria University; 2018.