New Zealand Fire Service Research Report

International good practice in safety, health and wellbeing in fire and emergency services

Litmus

August 2016

Safety, health and wellbeing is a priority of the New Zealand Fire Service (NZFS). The service seeks to be world leading in safety, health and wellbeing in fire and emergency services. The NZFS is identifying evidence of good practice in safety, health and wellbeing to strengthen its safety, health and wellbeing system. To inform this process, the NZFS commissioned Litmus to undertake case study research of international jurisdictions considered to have leading or emerging best practice safety, health and wellbeing systems.

Key components to implementing best practice in safety, health and wellbeing were described by case study sites. These components were understood at multiple levels. Within a **society** level legislation was identified as a key component. At a **community** level partnerships with unions and other stakeholders was a key component. At a fire service **organisational** level leadership, policies and plans, and continuous improvement components were identified. At a fire **station level** the key components were activities and programmes, and staff engagement, and at an **individual** level behavioural change was the key component.

Challenges for fire services were also identified. These challenges are the changing nature of the work (such as responding more frequently to non-fire emergencies and working more closely with other emergency responders), the changing nature of the workforce (including an older and more demographically diverse workforce), and resource limitations. All case study sites identified ways in which these challenges were being overcome. Many of these challenges are also relevant to the NZFS.

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International good practice in safety, health and wellbeing in fire and emergency services

A case study analysis

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Abstract

Safety, health and wellbeing is a priority of the New Zealand Fire Service (NZFS). The service seeks to be world leading in safety, health and wellbeing in fire and emergency services. The NZFS is identifying evidence of good practice in safety, health and wellbeing to strengthen its safety, health and wellbeing system. To inform this process, the NZFS commissioned Litmus to undertake case study research of international jurisdictions considered to have leading or emerging best practice safety, health and wellbeing systems.

Four international case study sites were identified for the research: Melbourne Fire Brigade, Tasmania Fire Service, London Fire Brigade, and Scottish Fire and Rescue Service. The case study sites were selected by the NZFS on the basis of their good practices and their relevance to the New Zealand context.

The research was conducted between November 2015 and March 2016, and consisted of four interviews with NZFS staff and stakeholders, 14 interviews with senior personnel from the case study jurisdictions, and a review of documentation from each case study.

Key components to implementing best practice in safety, health and wellbeing were described by case study sites. These components were understood at multiple levels. Within a **society** level legislation was identified as a key component. At a **community** level partnerships with unions and other stakeholders was a key component. At a fire service **organisational** level leadership, policies and plans, and continuous improvement components were identified. At a fire **station level** the key components were activities and programmes, and staff engagement, and at an **individual** level behavioural change was the key component.

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The NZFS is experiencing a period of change as it becomes Fire and Emergency New Zealand. Ensuring that the components of best practice in safety, health and wellbeing remain a priority will be important in this context.

1. Background

This report sets out results from a case study research project examining safety, health and wellbeing systems in four international fire and emergency services. The research seeks to provide insights to support the achievement of the NZFS's aspiration to be world leading in safety, health and wellbeing.

The report is structured as follows:

- **Section 1** – Outlines the rationale for the work, and the research methodology
- **Section 2** – Provides an overview of safety, health and wellbeing systems
- **Section 3** – Provides a snapshot of each of the four case study sites
- **Section 4** – Provides an analysis of the eight key components of safety, health and wellbeing systems
- **Section 5** – Provides a summary of the key challenges facing case study sites
- **Section 6** – Presents overall conclusions and recommendations for the NZFS, based on the overall evidence presented.

NZFS overview

The NZFS is New Zealand's main firefighting body, primarily responsible for providing fire protection to urban and peri-urban areas of the country. The NZFS was established on 1 April 1976, and is one of few fire brigades worldwide to have jurisdiction over an entire country. The NZFS covers a mixture of urban and rural areas across New Zealand (approximately 268,000 square kilometres), and serves a population of over four and a half million.

The NZFS comprises five regions with 439 stations, of which 79 are career stations and 360 are volunteer stations. The organisation employs approximately 1,700 career firefighters, 8,000 volunteer firefighters and 600 management and support staff. Over a quarter of NZFS volunteer firefighters are over 50 years, and amongst career firefighters over one third are over 50 years.

During the 2014/2015 financial year, the NZFS attended a total of 72,853 incidents. These included the following incidents.

Table 1: Number and type of incidents attended by NZFS in 2014-15

Incident type	Number of call outs
Medical emergencies	10,304
Structural fires	5,413
Vegetation fires	5,102
Vehicle accidents	4,815
Hazardous materials	3,245
Other non-fire emergencies	9,835
TOTAL	**38,714**

In November 2015, the New Zealand Government agreed that the NZFS and the rural fire authorities would be combined into one organisation in 2017. The name of the new organisation – Fire and Emergency New Zealand – reflects the wide range of services that firefighters provide for their communities, including callouts to road accidents, medical emergencies and natural disasters.

Safety, health and wellbeing in NZFS

The vision of the NZFS is 'Leading integrated fire and emergency services for a safer New Zealand'. By 2020, the NZFS aims to have significantly reduced the number of serious injuries and harm to their personnel, demonstrating zero tolerance to bullying, harassment and other harmful behaviours in workplaces, and have reduced the number of serious injuries in communities.

The Director of People and Capability who is on the Strategic Leadership Team and reports to the Chief Executive/National Commander has overall responsibility for safety, health and wellbeing in NZFS. There are currently ten safety, health and wellbeing roles in the NZFS.

The NZFS has undertaken a number of programmes and activities to implement a strong safety, health and wellbeing system. These programmes and activities include new reporting measurements, a safety culture assessment survey, staff training and workshops, a self-assessment of safety leadership, and a review of the Peer Support Programme.

Informing best practice safety, health and wellbeing

The NZFS seeks to be world leading in safety, health and wellbeing. To this end, the organisation wishes to inform its safety, health and wellbeing system by gathering evidence on the design and implementation of good practice safety, health and wellbeing from other jurisdictions.

In 2014 the NZFS undertook a literature review of best practice safety, health and wellbeing systems in fire and emergency services. To further inform the strengthening of the NZFS's safety, health and wellbeing system, the NZFS commissioned Litmus to undertake case study research of international jurisdictions who are considered to have leading or emerging best practice safety, health and wellbeing systems.

Methodology

A case study methodology was adopted for this research because the NZFS and Litmus wanted to obtain a rich picture of international jurisdictions' safety, health and wellbeing systems.

The case study is a common research methodology in psychology, sociology, political science, social work and in business and management studies. It allows researchers to obtain a holistic understanding of meaningful characteristics of individuals, organisations, social,

political and related phenomena. The data collected is normally richer and of greater depth than can be found through other research methodologies.

Case study selection

Scoping interviews were conducted with three senior members of the NZFS and one senior member of the New Zealand Professional Firefighters Union. The purpose of these interviews was to determine international fire and emergency jurisdictions that are delivering good safety, health, and wellbeing practice that would be suitable to consider for case study selection. These interviews were conducted face-to-face and by telephone in November and December 2015.

The scoping interviews identified eleven international fire and emergency service jurisdictions that are implementing good practice safety, health and wellbeing. The NZFS and Litmus examined these eleven jurisdictions and selected four of these as case studies.

All four jurisdictions were selected because they have safety, health and wellbeing documentation online, and are English speaking. Furthermore, jurisdictions selected either had an existing working relationship with the NZFS, or with an interviewee in the scoping interviews, which was considered important for gaining buy-in to the research.

Two fire services in Australia were selected due to their similarity and close relationship with the NZFS:

- **Melbourne Fire Brigade** (MFB) was selected because it has examples of good safety, health and wellbeing practice.
- **Tasmania Fire Service** (TFS) was selected because it is considered to be an example of emerging good practice in safety, health, and wellbeing. It is also similar to the NZFS in that it has a high ratio of volunteer to career firefighters.

Two fire services in Great Britain were selected, as significant advances in safety, health, and wellbeing have come from this region.

- **London Fire Brigade** (LFB) was selected because it is regarded as having an established and well documented safety, health and wellbeing system, with examples of innovative practice.
- **Scottish Fire and Rescue Service** (SFRS) was selected because it has achieved good outcomes in health safety and wellbeing. Scotland also is similar to New Zealand in that it is a national fire service servicing a similar size population, and has both volunteer and career firefighters.

Case study questions

The case study questions were centred on each fire service's design, implementation and monitoring of their safety, health and wellbeing system. Specifically, the research team investigated:

- What are the components of good practice safety, health and wellbeing?

- How has each fire service designed and implemented their safety, health and wellbeing system?
- What has facilitated the implementation of good practice for each fire service?
- What have been the barriers to implementing good practice for each fire service?
- How is each fire service monitoring their safety, health and wellbeing system?
- What is each fire service considering implementing in future with respect to good practice safety, health and wellbeing?

Data collection

In-depth telephone qualitative interviews were undertaken with 14 senior personnel who are responsible for or oversee safety, health, and wellbeing in the four jurisdictions. These people were selected as they could provide an in-depth view of their safety, health and wellbeing system, including why decisions were made and future direction. The interviews were conducted between January and March 2016.

Table 2: Number of research interviews conducted with each case study site

Melbourne Fire Brigade	Tasmania Fire Service	London Fire Brigade	Scottish Fire and Rescue Service
4 participants	3 participants	3 participants	4 participants

In addition to qualitative interviews, documentation on the four fire service's safety, health and wellbeing systems was systematically examined. A list of documents examined is appended. All case study jurisdictions reviewed the report for accuracy.

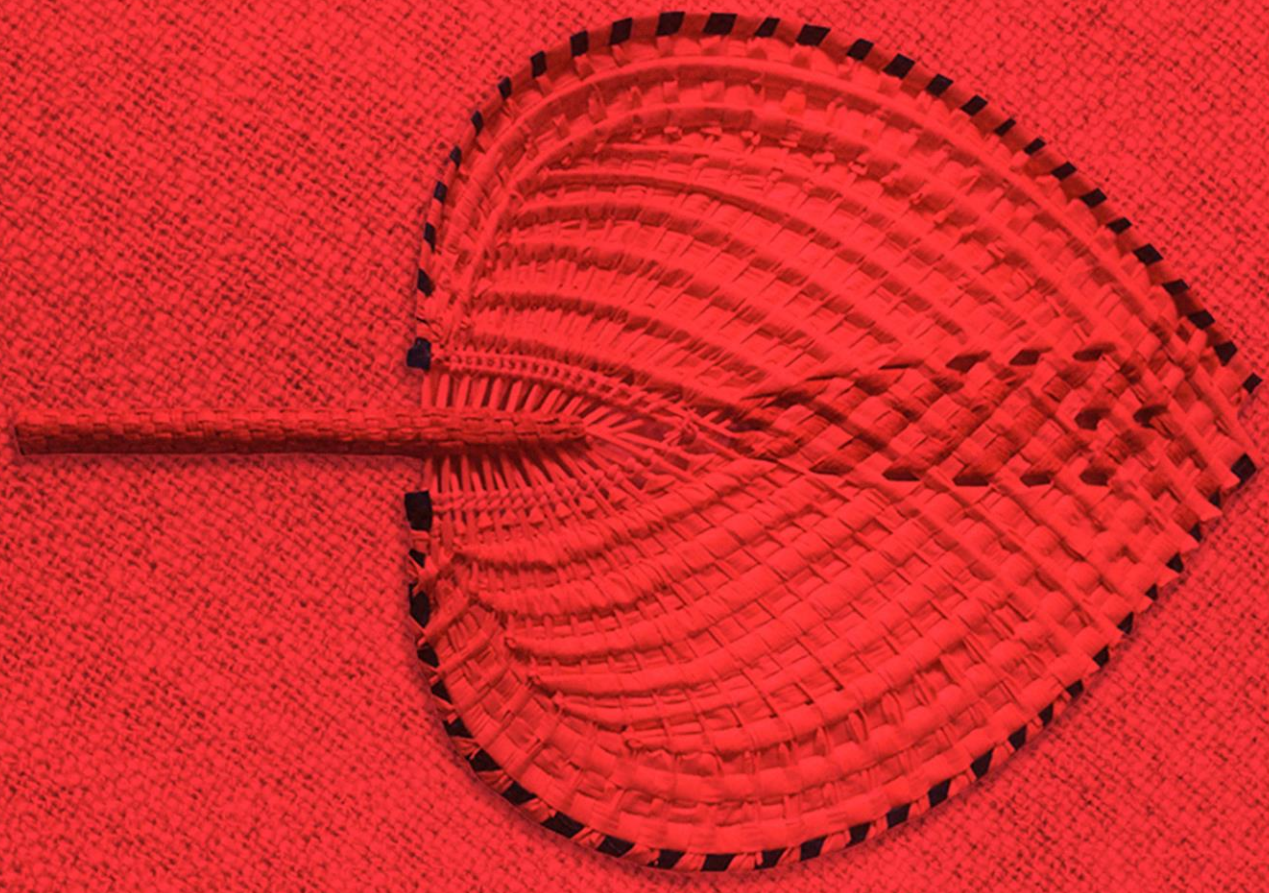
To ensure relevance to the New Zealand context and provide insight on the implications for New Zealand, key stakeholders from the NZFS reviewed a draft version of the report. Their comments were provided through email and were incorporated into the final version of the report.

Limitations

The researchers are confident that the findings in this report provide a sound evidence base for the components of a good practice safety, health and wellbeing system and examples of good practice. However, a number of limitations are noted.

The main limitation of the research is that the researchers spoke exclusively to senior fire service personnel, and did not speak to firefighters or their union representatives who could either validate senior personnel's views or offer an alternative viewpoint. It is therefore recommended that if similar research projects are undertaken in future, a broader cross section of views is gained, which would require a longer lead in and engagement period. A further limitation of the research is that it was desk-based. Given that context is important for understanding safety, health and wellness systems, richer data may have been gained if the research design had accommodated face to face interviews and site visits.

Findings



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2. Overview of safety, health and wellbeing systems

Introduction

This section presents a brief summary of workplace safety, health and wellbeing systems, in terms of:

- How systems are defined, and the components that make up systems
- Typical evolution of systems over time.

Definitions and components

The importance of safe and healthy workplaces is widely recognised by international and national institutions and governments. The NZFS literature review of best practices in safety, health and wellbeing noted that there is no single definition, operating model or principle for best practice across organisations or industries. However, various definitions of a healthy and safe workplace exist.

The World Health Organisation definition of a healthy workplace includes[1]:

- an understanding that worker health includes physical, mental and social aspects (not just the absence of disease)
- recognition that healthy workplaces are also healthy organisations, and employee health and organisational health are inter-dependent
- recognition that healthy workplaces includes health protection and health promotion.

The International Labour Organisation defines occupational safety and health as 'recognising, assessing and controlling workplace hazards that could impair the health and wellbeing of workers'.[2]

The NZFS identifies workplace safety, health and wellbeing as referring to 'any issue, task or condition in the place where work is carried out that may have either a positive or negative impact on the health of the people who are working there.'[3]

[1] WHO. (2010). WHO Healthy Workplace Framework and Model: Background Document and Supporting Literature and Practices. Retrieved from http://www.who.int/occupational_health/healthy_workplace_framework.pdf
[2] Alli, O. (2008). *Fundamental Principles of Occupational Health and Safety. Geneva:* International Labour Organisation. Retrieved from http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf
[3] NZFS. (2014). Best practice safety, health, and wellbeing.

Components of workplace safety, health and wellbeing systems

Workplace safety, health and wellbeing systems are designed to ensure healthier and safer workplaces. A safety, health and wellbeing system needs various **components** to function effectively. These components interact with each other to create the whole system. There is broad agreement in the literature of common elements important for achieving best safety, health and wellbeing practice. Typical components of a safety, health and wellbeing system include leadership, legislation, policies, programmes, and monitoring.

Internationally and in New Zealand different organisations have identified components of safety, health and wellbeing systems. For example:

- **The International Labour Organisation** fundamental principles of work safety and health include recognition of worker rights, established and enforced policies, a national system and programmes, stakeholder partnership and consultation, a focus on prevention and protection, continuous improvement, collection and communication of information, provision of health services and adequate compensation, education and training, and recognition of responsibilities throughout organisations.[4]
- **The United Kingdom Health and Safety Executive** identifies leadership and management, worker involvement, risk profiling, legal compliance, and competence as the core elements of a health and safety system.[5]
- **The American National Institute for Occupational Safety and Health Initiative** has 20 components for improving worker health and wellbeing in four areas: Organizational Culture and Leadership; Program Design; Program Implementation and Resources; and Program Evaluation.[6] Examples of the components are: develop a human centred culture; demonstrate leadership; engage mid-level management; establish clear principles; integrate systems; eliminate hazards; be consistent; promote employee participation; resource adequately; measure and analyse.
- **The New Zealand Accident Compensation Corporation Workplace Safety Management Practices Audit Standards** assesses eight critical elements: employer commitment to safety management practices; continuous improvement through planning, review, and evaluation; hazard identification, assessment and management; providing information, training and supervision; reporting and investigating incidents and injuries; ensuring employee participation in health and safety management; emergency planning and readiness; protecting employees when external contract work is undertaken on site.[7]

The **NZFS 2014 literature review** identified four essential components of a safety, health and wellbeing system. These are effective leadership and management, meeting legal obligations for safety and health, worker involvement, and risk profiling.

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[4] Alli, O. (2008). *Fundamental Principles of Occupational Health and Safety. Geneva:* International Labour Organisation. Retrieved from http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_093550.pdf
[5] Health and Safety Executive. (2013). *Managing for Health and Safety.* Retrieved from http://www.hse.gov.uk/pubns/priced/hsg65.pdf
[6] NIOSH/CDC (2008). *NIOSH Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing.* Retrieved from http://www.cdc.gov/niosh/docs/2010-140/pdfs/2010-140.pdf
[7] ACC (n.d).*Measuring your capabilities in Workplace Safety Management ACC Workplace Safety Management Practices Audit Standard.* Retrieved from http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_communications/documents/guide/wcm000512.pdf

A framework for understanding safety, health and wellbeing

Based on the different models outlined above, the NZFS literature review, and the case study analysis Litmus developed a framework to analyse components of a safety, health and wellbeing system for fire services (Figure 1, presented below).

The framework places key components of fire service health, safety and wellbeing systems on five different levels:

- Society
- Community
- Fire service
- Fire station
- Individual.

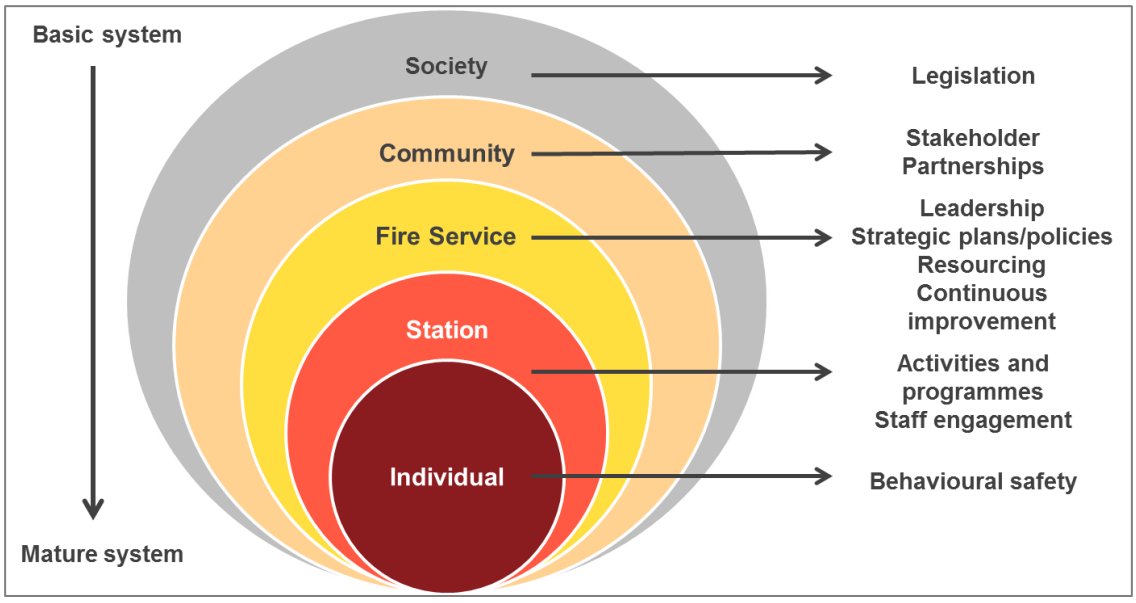

Figure 1: framework of levels and components of best practice

At a society level the component legislation protects workers and enforces safety, health and wellbeing.

At a community level partnerships, particularly with unions and others, are necessary for best practice.

At the fire service level there is need for leadership, strategic plans, resources for safety, health and wellbeing and continual improvement.

At the fire station level there are technological and organisational components (such as programmes or activities), however the focus shifts to include behavioural and cultural components. At this level mid-level managers have an important role to play in leading safety, health and wellbeing. Achieving best practice at this level requires station managers and firefighters to work closely together.

At the **individual firefighter level** the key challenge is building behavioural safety.

Best practice safety, health and wellbeing occurs when all components of safety, health and wellbeing are working at all levels. For example, legislation is enacted at the society level but is enforced both by laws and by the fire service. Unions are a community level stakeholder but engage with individuals, fire stations and the service as a whole. Programmes are delivered through the stations and through the service as a whole.

Evolution of systems

Creating a best practice safety, health and wellbeing system is often understood as process of change. These stages progress from basic to mature.[8]

In a basic system few components of safety, health and wellbeing are achieved and the focus of the system is on legal compliance. In a basic system there may be an acceptance that incidents will happen, poor investigation when they happen, and limited monitoring or auditing to improve practices. Staff receive limited or no training and there is little or no worker involvement or continuous improvement.

In a mature system most, if not all components of safety, health and wellbeing are achieved. There is a high degree of ownership over safety, health and wellbeing at all levels of the organisation. All managers and staff are informed about safety, health and wellbeing. All managers and staff are proactive in identifying risks and eliminating problems before they occur. Organisationally there is a zero injuries target. A mature system is likely to focus on behavioural safety. It is also more likely to focus on staff health and wellbeing as well as safety. Achieving safety, health and wellbeing maturity requires safety, health and wellbeing to be integrated into every part of an organisation so that it becomes business as usual.

In all case study jurisdictions fire services had mature safety, health and wellbeing systems and were achieving most components of best practice in safety, health and wellbeing. The exception was behavioural safety which was seen as the next target in all case study jurisdictions.

[8] Two widely identified safety culture models which use this progressive approach are the DuPont Bradley Curve (see http://goo.gl/zqvRkB) and the Safety Culture Maturity Model (see http://www.hse.gov.uk/research/otopdf/2000/oto00049.pdf).

3. Overview of safety, health and wellbeing systems in case study sites

Introduction

This section presents a brief summary of the four case study sites, in terms of:

- The defining characteristics of each service
- The organisational structure in place to implement safety, health and wellbeing.

MFB

MFB was formed in 1891. The brigade has 47 fire stations in the Melbourne metropolitan area servicing a population of roughly 4 million. There are five districts across the MFB jurisdiction (Central, South, East, West and North). MFB works primarily within the Melbourne urban area, however it also responds to state emergencies with other emergency management partners. MFB works in a range of emergency situations including medical emergencies and road accidents.

In 2014-15 MFB employed 2,216 staff (1,877 operational and 339 corporate). MFB does not employ volunteer firefighters. In 2014-2015 MFB attended 7,017 fires and explosions, 4,978 emergency medical events, and 3,773 rescues and other medical assistance events. In addition it had 15,086 false alarms and false calls (including good intent calls).

Organisational structure for safety, health and wellbeing system in MFB

During the last 18 months the MFB implemented a new drive for improved health and safety performance. The change occurred when a new chief executive officer was appointed who had a strong focus on health and safety. Improving performance became a key focus.

The change is led by senior leadership and focussed on strategic changes such as developing and implementing effective policies and developing a health and safety plan. However, the organisation is now focussing on working with health and safety representatives to increase workforce participation and improve union engagement.

MFB's safety, health and wellbeing system is implemented through the **Work Health and Safety Unit**, with core activities of the unit including injury and claims, health and wellbeing, and safety services. The unit is led by a health and safety professional, and employs 25 full time staff.

The Work Health and Safety Unit sits within the People and Culture Directorate as part of the Business Services section of the MFB (Appendix 1). The MFB recently decided to move health and safety from the Operations directorship to the Business Services section. This placement reflected its desire to implement a safety culture and behavioural change across the organisation (including for non-operational staff).

In addition to staff in the unit, two Health and Safety Commanders assist MFB's regional directors to meet their health and safety obligations.

TFS

TFS was created in 1979 when the State Fire Authority, Rural Fires Board and urban fire brigade boards were merged. There are currently over 230 fire brigades across the state. TFS provides fire and rescue services to around 517,183 Tasmanian residents and covers an area of 68,401 km². TFS mainly operates in private land tenures in urban and rural areas of Tasmania. Major urban risks are in winter with rural areas having an annual high risk fire season. TFS works particularly with Forestry Tasmania and the Parks and Wildlife Service to monitor and manage bushfire risk and incidents. TFS is also the lead agency for responses to road crash rescue.

TFS is predominantly staffed by volunteers (5,024) with only 488 career employees, around 300 of which are operational firefighters. In 2014-15 TFS attended 10,773 incidents. Most of these were false alarms (47.8%), a third were to fires or explosions. Bush fires make up the greatest proportion of fires attended (42% of all fires).

TFS is part of the Department of Police, Fire and Emergency Management. While previously self-sufficient, the human resources departments and other support services were merged in response to opportunities to improve business and governance. The implications of the merger on health, safety, and wellbeing structure and resourcing in TFS is not yet known.

Organisational structure for safety, health and wellbeing system in TFS

Health and safety became an organisational focus for the TFS in the late 1990s. The focus was an identification of risks that was informed by a safety audit. The audit highlighted risks and levels of non-compliance in the organisation. Over a number of years there were several incidents in which employees were seriously injured. The Chief Officer realised the importance of the issue and ensured that resources were provided to make changes. He also provided public leadership to change the organisational approach to health and safety. Following the audits, the **Organisational Health and Employee Services** department within Human Services was developed (Appendix 2).

Organisational Health and Employee Services employs four staff members, including the manager. Three staff members are human resource management professionals with expertise in work health and safety, the other is a station officer who responds to day to day operational issues that arise. The three staff members undertake other human resource management functions within the department in addition to work health and safety responsibilities.

LFB

The LFB operates in the Greater London Area, providing fire and rescue services for around 8.5 million people. The brigade was formed in 1866 as the Metropolitan Fire Brigade. The brigade has 103 fire stations and employs around 5,973 full time staff, of whom 5,096 are operational firefighters. The LFB is one of the largest full time career fire services in the world.

On average the LFB attend over 120,000 incidents per year. In 2015-16 there were a total of 170,581 emergency (999) calls made to the LFB. The LFB responded to 48,699 false alarms, made 86,596 home fire safety visits, and attended 20,773 fires.

Organisational structure for safety, health and wellbeing system in LFB

Safety, health and wellbeing in the LFB is led by the **Health and Safety Unit of the Safety and Assurance Directorate** (Appendix 3). Twelve full time staff work in the unit, including a mix of firefighters and health and safety professionals. Staff without firefighting backgrounds undergo operational training and are placed within a fire training unit to ensure they have a good understanding of the fire service context. In addition to staff in the Health and Safety Unit there are a large number of people throughout the LFB with a safety, health and wellbeing component to their role. Senior staff with significant safety, health and wellbeing roles include a senior human resources advisor who oversees the occupational health policies and the occupational health contract, a manager in development and training who leads on wellbeing initiatives including the corporate wellbeing action plan, and two managers who lead on staff engagement and equalities within the Strategy and Inclusion team.

The Safety and Assurance Directorate was created in 2015 following a review of the LFB top management structure by the London Fire and Emergency Planning Authority. The review focused on achieving savings and improving organisational efficiency. It recommended the creation of the Safety and Assurance Directorate as a way to place greater emphasis on the safety of staff and ensure effective delivery of services. The creation of the Safety and Assurance Directorate was also part of a wider United Kingdom drive from the Chief Fire Officers Association (CFOA) to increase operational involvement in firefighter safety. This approach encourages active monitoring of health and safety in operational teams and provides support and advice from health and safety specialists.

SFRS

The SFRS is the largest of the United Kingdom fire and rescue services and was formed in 2013 when eight regional Scottish Fire and Rescue Services were amalgamated. The organisation was established through the Police and Fire Reform Act (Scotland) 2012 and members of the board were appointed by the Scottish Government.

The combined service employs just over 8,000 operational and support staff (3,856 whole-time operational staff, 2,950 retained duty staff[9], 378 volunteers, 230 control staff and 867 support staff). In 2014-15 the SFRS responded to 74,273 incidents, of which 49,261 were false alarms and 25,012 were deliberate or accidental fires.

The SFRS is structured in three areas, North (164 stations), West (127 stations) and East (65 stations). It provides fire and rescue services to around 5.3 million people across 78,770 km^2. The SFRS jurisdiction ranges from built-up urban areas and cities to inaccessible and isolated rural areas including small islands. These areas may have limited infrastructure, diverse cultures, and different needs.

Organisational structure for safety, health and wellbeing system in SFRS

As an emerging service, the SFRS set a strong safety, health and wellbeing agenda when it was established in 2013.

The **Health, Safety and Wellbeing Unit** sits within **People and Organisational Development** (Appendix 4). The unit has three sections: **Health and Safety**; **Health and Wellbeing**; and **Business Management**. The unit is led by a health and safety professional and employs around 51 safety, health and wellbeing staff and operational staff, including health professionals (nurses, occupational health practitioners, and a physician). It also employs health and fitness technicians who are able to conduct basic fitness and health assessments for the fire service.

[9] Retained duty firefighters are on-call trained firefighters. They usually have other paid employment and are paid for their firefighting duties. In addition to call-outs they are required to complete training sessions and other prearranged duties. Most retained firefighters are based in rural areas. See http://www.fireservice.co.uk/recruitment/retained-firefighters

4. Components of best practice

Introduction

The case study analysis identified eight key components that underpin mature and emerging safety, health and wellbeing systems in fire and emergency services. These are discussed in relation to the Framework of levels of best practice presented in Section 2 (Figure 1).

At a societal level systems need:

- **Legislation** that enforces the provision of safer and healthier workplaces.

At the community level systems need:

- **Stakeholder engagement** and relationships with the other emergency responders, national bodies, health providers, and others.
- **Effective union relationships** that encourage all parties to support better outcomes.

At the Fire Service level systems need:

- **Leadership** recognition, commitment and visibility.
- **Policies** that work in the context for better outcomes.
- **Continuous learning** across all parts of the system.

At the station level systems need:

- **Effective mid-level management** to implement change.
- **Activities** and programmes that are adaptable to the environment.
- **Effective staff engagement** that increases staff ownership of health and safety.

At the individual level systems are reliant on:

- **Firefighters behavioural safety** and support to achieve this.

Each of these components is discussed below.

Society level

Legislation

Legislation is a core component of best practice in the case study sites but is considered a minimum standard to achieve.

Legislation enables fire services to ensure that safety, health and wellbeing standards are met. It keeps fire services accountable and workers safe and healthy.

Case study sites are governed by a range of regulations as follows:

- The **MFB** operates under the Victorian Government Occupational Health and Safety Act 2004. MFB is audited internally (by Department) and externally. The MFB reports periodically to Victoria emergency management. It is accredited under the ASNZS4801, the Australia and New Zealand standard for Safety Management.
- **TFS** operates under the Worker Health and Safety Act 2012 and regulations that support the act. As a Person(s) Conducting a Business Or Undertaking (PCBU)[10], the State Fire Commission (the statutory authority of which TFS is the operational arm) has the primary duty of care for work health and safety for all employees and volunteers. Additional key legislation includes the Worker Rehabilitation and Compensation Act 1988 (which covers the compensation arrangements for employees and volunteers), and other legislation around diseases and asbestos management.
- The **LFB** and **SFRS** ensure the safety, health and welfare[11] at work of all employees under the Health and Safety at Work etc., Act 1974. Under the Health and Safety Executive, LFB and SFRS must meet specific legal obligations for reporting the number of accidents/injuries under the Reporting of Injuries Diseases and Dangerous Occurrences Regulations (RIDDOR). Directorates and Service Delivery Areas must report all health and safety events upon discovery or when a work related condition/illness is diagnosed by a medical professional.

Case study sites use legislation to drive best practice as follows:

- **A guide to underpin procedures and the equipment used.** For example legislation underpins the TFS procedures in working in environments with asbestos.
- **A tool for monitoring and reporting incidents and injuries**. Both the LFB and SFRS use the legislative requirements around reporting incidents and injuries to ensure these events are monitored and prevented, in particular through the Health and Safety Executive and the Reporting of Injuries Diseases and Dangerous Occurrences Regulations requirements.
- **A lever to introduce change throughout organisations**. For example:

[10] Under the 2012 Work health and safety act all employers are Person(s) conducting a business or undertaking (PCBU)
[11] LFB uses the term welfare in the context of its commitment to manage the following: hygiene, access to drinking water, workplace temperatures, workplace lighting, toilets and showers in premises (and where working away from office for long periods etc., some workwear clothing such as protection from bad weather). The LFB also uses the term 'wellbeing' and has a corporate 'wellbeing action plan'. Wellbeing is associated with general health (physical and mental), including fitness, nutrition, lifestyle, workplace stress and such like.

  - When safety, health and wellbeing became a greater organisational focus for TFS, staff used legislation to focus senior management on key issues, and to highlight senior management obligations and responsibilities.
  - MFB made staff aware of Victorian legislation stating that any individual who has an impact on the policies of the organisation is individually accountable for any negligence that they might exhibit. For the MFB this includes health and safety representatives (who may also be union representatives).
- **A mechanism to highlight policy gaps**. For example, in the SFRS, health and safety staff are using legislation to identify policy gaps across the merged organisations (legacy services sometimes had different policies). The SFRS are working to unify and update these policies across the service to meet United Kingdom legislative requirements.

Although case study sites use legislation in this way, all are moving or have already moved away from emphasising legislation. Case study sites prefer to look at proactive measures that go beyond compliance. These measures involve high level buy-in from all staff from firefighters to senior managers.

> 'Legislation is the big **stick** that they listen to more than anything.' (TFS)

> 'We are absolutely trying and will achieve compliance, but it is not the target. The target is **beyond compliance**.' (LFB)

Community level

Working with unions

Working well with fire service unions and worker associations is a vital part of good safety, health and wellbeing practice.

All case study jurisdictions have high union membership among firefighters, and engagement with unions is formalised in each jurisdiction:

- **The MFB** is highly unionised with a 99% union membership rate. It is in ongoing negotiations with unions about the industrial programme and environment. The MFB is required to consult with health and safety representatives through legislation and gain agreement of the union through collective employment agreements.
- **TFS** has high union membership amongst career firefighters and high membership of the Tasmanian Volunteer Fire Brigades Association. The TFS work with both the union and the association.
- **The SFRS and LFB** union membership rates are high. The Fire Brigades Union represents the majority of fire brigade staff in the United Kingdom. Organisational engagement with unions is required by regulation in the United Kingdom through the Safety Representatives and Safety Committees Regulations (1977) and Health and Safety (Consultation with Employees) Regulations (1996). In the LFB and SFRS unions are

formally consulted on policy and programme changes. In both jurisdictions union representatives sit on senior committees with the fire service.

Representatives at case study sites believe effective union partnerships are a fundamental requirement to building good safety, health and wellbeing practice.

Key components of engagement with unions for safety, health and wellbeing best practice are:

- **Including unions from the beginning in discussions of any proposed policy, programme, or equipment changes**. For example, the LFB established working groups to discuss long-term issues. The SFRS 'working together' framework lays out consultation requirements.
- **Meeting frequently**. For example, the SFRS met frequently with unions when deciding on and implementing the fitness policy described below (Box 1).
- **Building relationships and trust**. For example, the SFRS supported a Fire Brigade Union representative to work on the health and safety policies of the new amalgamated service.

The LFB and SFRS have established effective partnerships with fire service unions (see box 1). The MFB and TFS do not have the same level of effective union partnership. Recent industrial strife, particularly in the MFB, has safety, health and wellbeing implications as the union and fire brigade do not have a united voice on this and other issues. However, both organisations are committed to working more effectively with unions in the future as they believe it is critical to building a safety, health and wellbeing system.

Box 1: SFRS and union engagement through amalgamation

The SFRS are committed to a 'working together framework' with external stakeholders, in particular with unions. This commitment is demonstrated in formalised engagement responsibilities.

The SFRS are committed to consulting with unions when introducing measures that may substantially affect employee health, safety or wellbeing, in providing health, safety or wellbeing information and training, in consideration of consequences of any new technology or equipment introduced. The SFRS Safety, Health and Wellbeing policy identifies who is responsible and when to consult with stakeholders at each level of the organisation.

Introducing fitness testing

When fire and rescue services were amalgamated across Scotland, many legacy services had different fitness requirements for firefighters. The SFRS wanted to introduce standardised fitness testing for all operational firefighters but were aware that this process could be fraught.

Lengthy consultation and discussion around firefighter fitness standards was facilitated between trade unions, the SFRS, and the Scottish Government. The SFRS set up meetings with union representatives, sought their feedback on the fitness policy, took their comments on board, and engaged with them in areas where the union and fire service disagreed.

They discussed how fit firefighters need to be, from recruitment, at three yearly fitness assessments, and fitness levels or needs based on age and gender. They also discussed the retirement age and whether firefighters will be fit enough to undertake operational activities

at age 60.

The SFRS thought the partnership approach had resulted in a relatively smooth transition to nationalised fitness assessments.

> 'We said that we want a **truly open engagement** with trade unions. We follow through on this daily. We have open conversations with trade unions around health, safety and wellbeing.' (SFRS)

> 'I think the **partnership approach** to developing our fitness arrangement, and Trade Unions buying into that, really helped with the introduction of the fitness assessment.' (SFRS)

Working with stakeholders

Working well with stakeholders is an important component of best practice in safety, health and wellbeing in the case study jurisdictions. Establishing strong and effective engagement and relationships facilitates the best service provision.

In addition to union partnerships, case study sites have important alliances with a variety of external stakeholders, including: health providers, national fire and rescue organisations, other fire services, other emergency services (such as the police), and health and safety training providers. The exact nature of relationships varies across case study sites reflecting the unique requirements of each service.

Examples of effective engagement with stakeholders includes:

- **Health providers**: Partnerships with health providers are common for case study fire services. The MFB and TFS both have well established relationships with external health providers and mental health contractors (clinical psychologists). The LFB also partners with a health provider who provide occupational health services (such as routine periodic medicals, physiotherapy etc.), and a separate counselling service. Despite sitting outside the organisation, these professionals are trusted by firefighters because they have in-depth knowledge of the service and fire fighters' experiences based on long term involvement with the service.
- **National oversight bodies:** Case study sites also work with and respond to national oversight bodies. In 2010 the LFB worked with the Hampshire Fire and Rescue Service, the Health and Safety Executive, and police to investigate an incident in which two firefighters died. The findings of the investigation were used nationally to make changes to breathing apparatus equipment to prevent a similar event happening in the future. Developing more communication between fire services is a future focus of the LFB.
- **Other emergency responders**: Case study jurisdictions are increasingly working in partnerships with other emergency responders. These partnerships include health services and the police, and may become more formalised. For example, the TFS recently merged with police and emergency management. The implications of these mergers on safety, health and wellbeing are not yet known.

Some concerns with merging emergency response organisations were identified by case study sites. The LFB and TFS are cautious about merging the safety, health and wellbeing departments with other agencies because of the specific requirements of each service. For example the health and safety needs of firefighters may be different to police officers.

> 'It sounds great in terms of resource sharing, but actually, a massive part of the business for health and safety practitioners who are doing their job properly is **understanding the work, the people, and the business**.' (LFB)

Fire Service level

Leadership

In all case study sites strong leadership on safety, health and wellbeing is essential to achieving best practice.

Strong leadership is vital for safety, health and wellbeing to be **implemented** effectively in fire and emergency services – leaders are able to drive change. Leadership is also important for ensuring the conversations about health and safety are held, and that safety, health and wellbeing remain an **organisational focus**. Finally, strong leadership is needed to ensure that safety, health and wellbeing policies are adequately **monitored**, and outcomes reported on.

Key dimensions of strong leadership demonstrated in case study sites include:

- **Safety, health and wellbeing represented at the senior leadership level**. All sites have someone at a director level who is able to champion health and safety for the organisation. For example, in the TFS, chief executive involvement was identified as influential in changing health and safety systems.
- **Senior leadership frequently and publicly discuss safety, health and wellbeing**. Leaders reiterate the importance of keeping everyone safe and well. For example the LFB Safety and Assurance Director proactively speaks on safety issues at all levels of governance, management and operations – the board, senior management, and Fire Station levels.
- **Health and safety has a strategic focus** (for example, staff safety is a leading priority identified by the MFB and SFRS Corporate Plans and performance indicators are attached to staff safety).

Case study sites have mixed models in terms of leadership of safety, health and wellbeing units – some units are led by operational staff, others are led by specialist health and safety staff. Both approaches appear to be effective.

> '[Our director] **talks about safety a lot**; she is really expressive about wanting to make firefighter safety better.' (LFB)

> 'You need to have **buy-in from senior management**. You need to have them **championing** your issues and believing in what you're trying to achieve from the top down.' (MFB)

> '[Our director] is always talking about the health and wellbeing agenda, and I think that level of **champion of health and wellbeing at the most senior level** of the organisation does help embed health and wellbeing into the mainstream of your service.' (SFRS)

Policies and plans

Safety, health and wellbeing policies are essential to ensure best practice. Policies provide structure and direction for services.

Policies provide structure and direction for the fire services to implement safety, health and wellbeing practices and programmes. They are the tools used by safety, health and wellbeing staff and senior leadership to implement change throughout the organisation.

All case study sites identify staff safety and health in their strategic and corporate plans. All have safety, health and wellbeing policies which reflect this strategic focus.

- **The MFB uses the Always Safe Action Plan** 2015-2018. The Always Safe plan outlines the management systems, leadership and behaviour, health and wellbeing plans, projects and deliverables, and workplace health and safety service delivery.
- **The TFS uses the Work Health and Safety Plan 2016** which outlines their plan to achieve outcomes to meet the policy deliverables.
- **The LFB applies several key guidelines and policies:**
  - The Fifth London Safety Plan 2013-2016. One of the principles of the Plan is Safety, including a commitment to the safety, health and welfare at work of all staff and anybody affected by their operational work.
  - Under the London Safety Plan, the corporate health and safety policy describes the organisation and arrangement for health and safety and identifies the responsibilities for different staff at different levels in the organisation. Within this are a suite of different operational and health and safety policies, each of which describes the hazards and controls measures for certain issues.
  - The London Fire and Emergency Planning Authority Health and Safety Policy which outlines the responsibilities of the authority, all managers and employees.
  - Externally to the LFB, the National Operational Guidance Programme for United Kingdom fire and rescue services sets national standards/guidance for the UK Fire and Rescue Services. It provides high level guidance to help individual fire and rescue services develop organisational specific policies and programmes assessments.

- **The SFRS uses Health, Safety and Wellbeing Policy and Corporate Standards** which were developed in 2014-15 and implemented across the service in July 2015. The

standards are aligned with internationally recognised occupational health and safety management standards.

Case study sites identified key features of policies and plans that drive best practice, including:

- **Setting a direction for the fire service**. Policies provide the direction and structure for safety, health and wellbeing programmes and ensure that resources are supplied.
- **Identifying what gets measured and monitoring progress**. Policies ensure that targets are set for safety, health and wellbeing. For example, in all case study sites core safety, health and wellbeing targets are key performance indicators and are included in corporate reporting documents, such as working days lost to injury (LFB), reducing firefighter injuries (SFRS), lost time to injury rates (MFB and TFS).

Case study sites identified factors necessary for effective policies including:

- **Working with staff** to inform the policy. For example, the MFB consulted with staff throughout the development of the Always Safe Action plan. Similarly, the SFRS consulted with frontline staff when forming policies for the amalgamated service on risk assessment and hazard management.
- **Clear communication** about the policies and targets. Case studies had active communication with staff through newsletters, alerts, etc. For example in 2015 the MFB pushed messages on hazard reporting through meetings with the senior leadership team, in station posters, a health and safety seminar, and monthly communications. The messages on hazard reporting were linked to an identified target in the corporate plan to improve hazard and near-miss reporting. They have seen an improvement in the quality of the reports and an increase in reporting.
- **Providing effective training** to support staff to understand and follow policies. For example the MFB has held six monthly training workshops and seminars on health and safety with the senior leadership team, health and safety representatives and managers.
- **Ensuring relevance and applicability to the working environment**. All case study sites have operational staff involved in forming safety, health and wellbeing policy to ensure that policies work on the 'shop floor'.
- **Ensuring adaptability and flexibility** for the local environment. For example, the SFRS were flexible in implementing policies in remote areas to ensure the policies were useful and usable in that context (Box 2).

> 'There is **no point trying to create a system that is unusable** on the shop floor.' (TFS)

Box 2: Implementing SFRS safety, health and wellbeing policies in remote areas

When the SFRS implemented unified health and safety systems after amalgamation it found that there were different health and safety cultures in different areas. These areas were still committed to health and safety but they had different approaches to how health and safety could be achieved.

The SFRS had to adapt to the local conditions while also holding a unified strategic focus. For example, it had a policy that after an accident the fire service should take photos, gather information, and cordon off the area immediately. However, in remote areas it often took a considerable time to access the scene of an accident and this needed to be recognised in the guidelines.

The SFRS strategy during policy implementation was:

- help local stations to put into place procedures that worked for them while still meeting the required guidelines
- offering support to stations to implement policies
- allowing time for local stations to implement changes so that they met the requirements
- providing small quantities of information in easy to understand chunks and allowing staff time to absorb and implement the new systems and policies.

A notable outcome of this approach has been a high level of interest in training across the service.

> 'It wasn't the commitment to protecting firefighter or community safety where there were problems – but it was the mechanisms around that and **how practical it would be for remote areas** to do health and safety in the manner that headquarters were asking.' (SFRS)

> 'We had to set strategic commitment, and a framework policy, and then we had to **allow local flexibility** in that application.' (SFRS)

Continuous improvement

A culture of continuous improvement is evident in all case study sites and is a core part of building safety, health and wellbeing best practice.

The case study teams spoken with are all dedicated to achieving the best safety, health and wellbeing practice and outcomes in their fire and rescue service. All emphasised that achieving safety, health and wellbeing is a process of continuous improvement.

Key mechanisms case study jurisdictions use to achieve continuous improvement are:

- **Monitoring key indicators and proactively responding to the outcomes.** All case study sites use indicators to monitor progress, identify issues and target activities (see Appendix 5). For example, SFRS monitoring data identified the group of firefighters with the highest failure rates for the fitness tests. SFRS was then able to target this group more effectively for fitness support. The LFB identified how and where slips, trips and falls were occurring and created a targeted campaign to reduce injuries.

  The majority of indicators case study fire services use are **lag indicators** and are focussed on injuries and accidents. These indicators tend to dominate key performance reporting.

Lead indicators are used to describe and monitor the pre-emptive work occurring in the service and encourage proactive safety behaviour. Case study sites found lead indicators challenging to develop and use, particularly indicators that would help change behaviour or culture in the fire service such as the number of health development reviews in the SFRS. However, they can be difficult to measure and feedback from case study sites is that (non-health and safety) managers often dislike them, finding them too subjective and trusting numbers over assessments (Box 3).

Most case study sites use lag indicators in their key performance reporting and use lead indicators more internally. However some lead indicators are also included in higher level reporting. For example, the SFRS includes the number of medical and fitness assessments completed within their high level performance targets. The LFB uses lead indicators to report and monitor the amount of training completed or the number of safety audits. In Tasmania lead indicators such as annual work health and safety plans in place, workplace inspections conducted, and work health and safety team meetings held have been included in Divisional Occupational Health and Safety plans. TFS is working to identify which lead indicators will be useful for managers to use to change behaviour.

- **Researching safety, health and wellbeing and learning from other services and industries**. Fire services are also sharing information and learning from events across different services, and from different industries to identify ways to improve safety, health and wellbeing outcomes. The SFRS has a Firefighter Safety Project which analyses current practice, compares it with practice used elsewhere and recommends improvements to the SFRS. The LFB and MFB are examining best practice, lessons learned, and effective safety tools used in other high risk industries such as mining, rail, defence and petroleum.
- **A peer review system** is used by United Kingdom fire services for improvement. The peer review assesses a fire and rescue service and identifies how it could be improved, including in safety, health and wellbeing (the LFB was peer reviewed in 2015).
- **Creating a culture of learning, particularly by fostering a 'no blame environment'**. Creating and encouraging a culture of learning is important for all case study jurisdictions. Some case study sites are creating a 'no blame' culture and encouraging honest conversations about safety failures. The LFB are developing a process of behavioural interviews with staff when there has been non-compliance of procedures/policies. Interviews will be held in a blame-free, high trust environment to identify why procedures were not followed. All sites are aware that changing behaviour will be an ongoing challenge.

> 'I don't think that we will make much more change in the way that we go about our business through policy change or personal training. I think we now need to **start targeting the human factors**, and understanding why people do things the way that they do sometimes.' (LFB)

'I think there is an **improving culture** of not accepting less than optimum when it comes to the H&S of our staff.' (MFB)

Box 3: Using lead and lag indicators in the LFB

The LFB is working to reduce slips, trips and falls, their leading cause of injury in the service.

To reduce injuries LFB did a slips-and-trips risk assessment of all its stations. It ran a poster campaign throughout all stations and put out staff awareness literature. It also audited every station to assess the slipperiness of the floor and then created an action plan for each station. These were pre-emptive measures that could have been assessed with lead indicators.

However, the key indicator used to assess the effectiveness of the approach was the reduction of slips and trips in stations (a lag indicator). Although LFB conducted proactive and preventative safety activities, and monitored and recorded these activities, they found that measuring the reduction in incidents demonstrated the effectiveness of the campaign to the organisation.

Fire station level

Activities and programmes

Safety, health and wellbeing activities and programmes are an important component of best practice. They are the tools used to ensure all staff are able to be healthy and safe.[12]

The purpose of safety, health and wellbeing programmes and activities is to ensure that all staff:

- are healthy, fit and able to complete their required work safely
- know what their responsibilities are and how to keep themselves and others safe and well
- are actively engaged in improving safety, health and wellbeing outcomes.

Case study sites currently implement a range of activities and programmes targeting health, fitness, safety and wellbeing.

- The **MFB** Work Health and Safety Unit delivers a range of projects based on the *Always Safe* programme. Projects focus on leadership and behaviour, systems, and health and wellbeing. Health and wellbeing services encompass mental and physical health as well as fitness support. The department provides a range of safety, health and wellbeing related programmes (such as massages, influenza injections, skin checks, peer support). The Unit also provides mental health support services through the Employee Assistance

[12]This research does not to assess which activities or programmes are best practice. The research purpose is to identify how fire services are using programmes as part of a best practice safety, health and wellbeing system.

Programme[13], and critical incident debriefing. The MFB runs campaigns on safety and health targeting specific issues (such as keeping fit in older age). It is also planning to survey staff to identify areas of need and interest.

- Most of **TFS's** wellbeing programmes and services are directed at full-time career staff. For career staff, the TFS runs a health and wellbeing programme which includes health services (such as vaccinations and hearing assessments). It also provides fitness and general health programmes (such as a gym improvement programme, nutritional training sessions, and ergonomic assessments). These programmes run periodically as needs are identified. For volunteers, the TFS provides free basic health checks at the annual firefighter championship games. All staff (career and volunteer) are able to access the Employee Assistance Programme and the Critical Incident Stress Management Programme. The TFS runs communication campaigns (for example during Safety Month). It also actively sends out information on available safety or health courses offered by the Tasmanian state government.
- **LFB** provides a range of services including advisory counselling services that target stress and mental health, and extensive staff engagement processes. LFB partners with a health provider who deliver occupational health services (routine periodic medicals, physiotherapy etc.). It also runs campaigns on health and safety based on areas of concern (such as slips, trips and falls). The LFB also focuses on providing effective training for staff. It is able to provide extensive training across its core competencies because all operational staff are full time.
- **SFRS** safety, health and wellbeing programmes provide a range of support to staff. The programmes are based around three yearly health and fitness assessments for all operational firefighting staff. The SFRS provides structured programmes, health promotion campaigns, and access to fitness, health and wellbeing resources, training and support at any time. Health, wellbeing, and safety programmes are provided to all staff regardless of whether they are retained, whole-time, or volunteer firefighters. SFRS runs campaigns targeting specific safety, health and wellbeing areas of concern. It also recently conducted an employee survey on health and wellbeing to identify and assess service needs.

Best practice involves providing a comprehensive suite of activities and programmes, targeting different needs and target audiences:

- **Educating employees about health and safety via training programmes**. For example SFRS staff receive health and safety training as part of their induction, and operational staff have regular ongoing training modules to complete, each of which includes a health and safety component. All staff also receive at least one round of training from an external health and safety training provider courses depending on the level of training required and the responsibility of the staff member.
- **Regular assessments and tools to help staff maintain physical health**. The impact of occupational diseases on health and wellbeing is an increasing focus for case study sites. All case study sites have health checks and offer preventative treatment such as vaccinations, hearing assessments, skin checks and fitness assessments. Case study

[13] The Employee Assistance Programme contracts an external provider to supply up to 6 counselling/support sessions to staff and their immediate family members.

sites continually identify activities that can improve health outcomes. For example the MFB recently completed an education program titled 'Active for Life' to increase firefighter awareness of the effects of ageing and the measures they can take to decrease these effects. Three yearly health checks are compulsory in the SFRS.

- **Improving firefighter stress and mental wellbeing**. Stress and wellbeing are growing challenges within all case study jurisdictions. All sites provide access to mental health and wellbeing services such as counsellors or peer support, usually through contracted health partners. The TFS and MFB contract health professionals to deliver counselling through the Employee Assistance Programme, the MFB also contract a clinical psychologist and have a long-standing panel of five counsellors/psychologists who staff can contact for an appointment confidentially. TFS and MFB also have strong peer support programmes for staff. The LFB has embarked on a comprehensive consultation process to improve wellbeing (Box 4).
- **Supporting firefighter fitness.** For example, the SFRS has implemented a fitness policy requiring all firefighters to pass three yearly fitness assessments. The SFRS provides fitness programmes and support for staff to meet the fitness requirements. The programmes are implemented by fitness practitioners who provide training for staff. Firefighters who do not pass the initial assessment are given additional support and time to improve their fitness levels. The SFRS also provide equipment for all firefighters to maintain their fitness.
- **Targeting older workers**: The health and fitness of an older workforce is a growing consideration for all case study sites and has implications on the delivery of safe services for both firefighters and communities. Older workers may be more at risk of strains and sprains and be more affected by the physical requirements of the job. They may also struggle more with psychological stress when responding to emergency medical events because this is a relatively new aspect of their role. Case study sites have implemented a number of activities designed to support health and fitness in an older cohort of firefighters. For example, the MFB is investigating how to effectively communicate health and fitness messages to the older cohort. It is also looking at programmes with older sporting role models who can come and talk to firefighters about physical health and maintaining their health as they age.

> 'Age is irreversible, but it's a matter of maintaining that core strength and encouraging people, and giving people a reason to believe they want to do it as well.' (MFB)

Box 4: Health and fitness programmes

Stress and wellbeing in the LFB

In the LFB stress (general and work-related) accounts for around a third of staff sickness absences. To counter the impact of this the LFB is focussing on reducing staff stress levels.

To achieve reduced stress the LFB conducted a Risk Assessment Survey on stress for all staff. They also consulted with staff through focus groups and visiting stations. They use an internal magazine to report back to staff on the consultation process. The results of the survey and the consultation will inform a Corporate Action Plan on improvements to stress management. Each department is also developing a local action plan for stress management.

Key factors enabling improvement to outcomes in wellbeing and stress in the LFB are:
- enough staff with appropriate health expertise to push the agenda forward at senior levels
- people who are able to continually push the agenda in the organisation
- resources dedicated to achieving better outcomes.

SFRS Functional Fitness Programme

The SFRS is investigating how to provide safety, health and wellbeing support most effectively to isolated rural regions. The SFRS was aware that firefighters in isolated regions may not have access to the equipment or resources needed to maintain fitness and health at a level required by the service. In particular retained and volunteer staff working in these areas could be unfairly disadvantaged. To address the inequality of access to resources the SFRS developed a Functional Fitness Programme.

The Functional Fitness Programme provides small, easy-to-store, easy-to- use fitness equipment for flexible locations. Each work place will receive packs, supplemented by range of printed and electronic resources.

The intention is to reduce inequality of access to fitness support and resources for retained and volunteer staff so that they can undertake fitness development programmes identified for them. The programme has been piloted in West Service Delivery Area and is intended for expansion.

> 'We really have to **think outside the box** about how we can support that individual at the moment.' (SFRS)

Staff engagement

All case study jurisdictions emphasise the importance of engaging staff in safety, health and wellbeing.

Engagement with staff increases staff **commitment** to safety, health and wellbeing by increasing ownership of policies and by-in to their implementation. By personally engaging all staff, ownership for health and safety outcomes is spread throughout the organisation (not solely on management), and a **culture change** around health and safety can be achieved. Working with staff to identify areas of concern and solutions is also important to build staff **knowledge and understanding** of safety, health and wellbeing.

Key mechanisms used by case study sites to effectively engage with staff include:

- **Health and safety committees and health and safety representatives**. All case study sites used health and safety committees and representatives to engage staff in safety, health and wellbeing. For example, TFS has processes for employees and volunteers to feedback on health and safety through committees at the regional, central and governance levels. At the regional and central level health and safety committees identify issues such as equipment concerns. The central committee has union, volunteer association, and occupational health representation. Strategic issues are usually

forwarded to the governance level. These tools encourage all staff to feedback into policies and practices in safety, health and wellbeing.

- Formal feedback loops including:
  - **Staff surveys:** The SFRS conducted an employee survey in late 2015 to identify staff attitudes to health and wellbeing. This will inform their planning in 2016/17.
  - **Focus groups:** The LFB uses small focus groups with fewer than 10 people to talk to staff about issues and receive staff feedback. They find that staff are more able to discuss concerns in the small groups. This is a recent change where previously they had conducted senior officer briefings with up to 40 staff (engagement in these meetings was low).
  - The **Operational Sounding Board** (LFB) – described in Box 5 below.
- **Informal engagement** including proactively talking with staff about the organisation, its future, their role and what they contribute. For example, the LFB discusses case studies of incidents with operational staff to identify what went wrong, what they would or should have done, and how the incident could have been prevented.
- **Special approaches for engaging with staff in rural and isolated areas, and volunteers/retained staff**. SFRS and TFS both cover large, isolated rural areas and it is challenging to reach staff based in these areas for training, support or monitoring. In both SFRS and TFS retained or volunteer staff make up a significant proportion of the workforce (46% in Scotland and 91% in Tasmania). Approaches to reach these audiences include:
  - **Targeting staff when they are gathered together for events or training**. In Tasmania this is done at events such as the Firefighter Games (see Box 5), or the state conference. In Scotland the SFRS provide health and fitness checks to staff while they attend training at centres.
  - **Using technology to reach staff in remote areas**. The TFS is exploring sending DVDs of training sessions in main centres to rural areas. SFRS developed a fitness programme that can be implemented in remote areas (see Box 4). They use Skype and other technology to support staff in isolated areas. SFRS also developed an online library of resources for staff to access which will be available in 2016/17. SFRS staff will be able to watch videos, read presentations, and access information.
- **Tailored approaches for middle management.** Getting middle management and station manager buy-in is a particular challenge for some sites, as some may be disengaged. Station and middle managers are key to implementing station level changes in health and safety. They are important for passing health and safety messages to frontline staff and for relaying messages back up to more senior management. They need to be monitoring firefighter decision making and modelling good practice for station staff. Without their support change can be hard to implement. Examples of case study sites using targeted approaches to reach station and middle managers include:
  - The MFB provides every manager a weekly de-identified or desensitised consolidated incident report of events reported through the week. The MFB also provides a briefing pack for all managers on the key safety topic of the month.
  - The SFRS provides external safety training to anyone who supervises staff with high risk activities (either a certificate or diploma in managing health and safety, or for staff with less responsibility a course in working safely).

> '**Our staff are the key** – they are the ones that are day-to-day on fire stations. They are the ones that should be leading that behaviour and should be challenging the behaviours when they don't go well.' (LFB)

Box 5: Innovative and effective staff engagement approaches

LFB operational sounding board

The Operational Sounding Board was set up by the Operational Procedures Department to gather feedback from operational staff from firefighters to watch managers. The sounding board is a register of staff that health and safety staff can access when they need to consult on a matter. The sounding board is used for a range of issues.

The LFB is currently changing their structural firefighting personal protective equipment. As part of that process they are gathering feedback on staff views, particularly around comfort and performance of the personal protective equipment. Through the Operational Sounding Board, they developed a questionnaire, sent the questionnaire out to staff for feedback. The results were then included as part of the personal protective equipment research. The process has a good response rate because staff volunteer to participate in the sounding board and want to be involved.

> 'The feedback we get now is "we really **feel that you are listening** now, that you care, and that you are dealing with the things we are telling you."' (LFB)

TFS volunteer health checks at the firefighter games

With a large volunteer firefighter workforce and limited resources, the TFS do not have the ability to provide health checks to all volunteers. However, to reach volunteers, they provide voluntary, free health checks at the annual firefighting championship games.

The health check-up includes blood pressure, cholesterol, and heart rate tests. Volunteers are notified if there are any health issues requiring further attention from a medical practitioner.

By using the firefighter games TFS can provide a valuable service to volunteers at an affordable cost. Although this approach does not reach all volunteers and is voluntary, it is an effective and cost efficient tool to reach volunteer firefighters.

Individual level

Behavioural safety

All case study sites have made *organisational* changes to achieve better safety, health and wellbeing outcomes. They identify issues, change policies, change equipment and tactical firefighting procedures, and provide targeted training. However, all case study jurisdictions comment that in spite of this firefighters may act in a way that has negative safety consequences on themselves and their brigades.

Identifying the reasons why *individuals* behave in this way and learning from these events is the eighth component of the safety, health, and wellbeing system. To this end, case study sites identify behaviour change as their 'next challenge' in improving safety, health and wellbeing outcomes.

Each case study site is working to or considering how to improve behavioural safety. The MFB and LFB have taken the following approaches:

- **Working with frontline staff**. For example the LFB is undertaking behavioural interviews with staff when someone has not followed procedures or policies. The interview will be try to be blame free so that staff are able to discuss what went wrong and how to act differently without fear of repercussion.
- **Investing in behavioural training**. For example the LFB worked with a behavioural consultant to identify how to achieve behavioural change needed in the service. The MFB are also investigating behavioural programmes for 2017.

> 'Our staff have good training. We know our staff know the operational procedures, we know that they are absolutely capable of entering a building and fighting a fire and rescuing a person in accordance with those procedures, but **sometimes an individual will choose to do something differently**, and often that is associated with injury.' (LFB)

> 'With H&S you get to a point where you've got all the policy in place and you've got all the back up and the buy-in and risk assessments, but you'll still have your level of injury and that's described as **behavioural safety**. Why does someone do something that leads to them having a safety event happening when they have the risk assessments and the training?' (SFRS)

> 'Ultimately because **safety is about behaviour**, if you don't have consistency between what you are doing between your behavioural strategies in safety with what you are trying to do with your behavioural strategy with your organisational cultural development you don't get synergy across all of those systems.' (TFS)

5. Challenges and future focus

Case study staff identified several key challenges facing fire services. These include:

- the changing nature of work
- the changing nature of the workforce
- the need to do more with fewer resources.

These changes are also relevant to the New Zealand Fire Service. The changes are discussed below.

The changing nature of work

The nature of work in fire service jurisdictions is changing. Case study sites discussed the following changes:

- **Fire services are increasingly first responders in emergency events, including medical events**. The changing work context has an impact on health and wellbeing for firefighters. For example, the MFB are aware that some of their older cohort of firefighters struggle more with the psychological stresses of medical emergencies because they did not expect it to be part of their role as firefighters.
- **Fire services are working more closely with, and sometimes merging with other emergency services** such as police, emergency management and ambulance services to provide a 'blue light response'. Merging with other emergency services can reduce costs and provide efficiencies. However case study sites are cautious about the impact that merging with other services might have on firefighter safety, health and wellbeing such as a reduction in the targeted programmes available to firefighters, or policies that are generalised across services. The LFB and TFS were concerned that safety, health and wellbeing processes for staff could be diluted in joined up services. However, TFS also believes that merging could open up new opportunities for improving systems and leveraging off a broader range of knowledge.
- **Fire service staff have decreasing firefighting operational experience as a result of effective preventative fire safety work**. Lack of active experience can result in poor decision making and preventable incidents during emergency call-outs. The LFB in particular identified this area as a growing concern. To address this issue, the LFB is identifying ways of maintaining operational competence such as:
  - ensuring that systems are in place and are followed
  - reflecting on previous accidents with staff to identify what went wrong and how it could have been prevented
  - making staff more aware of their personal accountability and responsibility
  - getting staff involved in developing the safety processes and identifying solutions.

> 'Our fire prevention work has been so effective that our firefighters are not exposed to the same numbers of fires that they used to be and so they do not get as much experience in real fire situations. Our real fire training programme goes some way to compensate for this but it is not an absolute reflection of the real thing, it can't be. We think maintenance of firefighting skills may be an issue in some of the accidents we have so we are actively reviewing operational competence in this area to see if we can make any further improvements to address this.' (LFB)

The changing nature of the workforce

The nature of the workforce in case study fire services is changing in the following ways:

- **Fire service workforces are growing older**[14]. An older workforce is more at risk of injury and may be less able to meet the physical requirements of operational firefighting. They may also be more vulnerable to age-related illnesses such as cancer. Case studies sites are aware of the potential increased cost of an older more vulnerable workforce – such as the cost of increased injuries/illness, lost time to injuries/illness, or role reallocation due to injuries/illness. All sites are looking at ways to support health, fitness, and safety in an older workforce. For example, when the SFRS introduced fitness testing it considered how fitness should be assessed for different age groups and discussed fitness requirements at the age of retirement.
- **The ethnic and gender diversity of fire services is changing**. Firefighters in case study sites are predominantly ethnically white and male. Case study services are seeking to improve ethnic and gender diversity. For example, the LFB monitors and reports on ethnic and gender diversity in their key performance indicators. This includes the workforce composition, and the proportion of top earners and voluntary leavers by ethnicity and gender. The LFB also sets key performance targets to achieve in this area. Ensuring safety, health and wellbeing programmes/activities, policies and monitoring are appropriate for a more diverse workforce and ensuring equitable access to safety, health and wellbeing services will be important.
- **More part-timers**. The changing makeup of the fire service may also have an impact on the proportion of part-time staff. This may impact the types of safety, health and wellbeing programmes the service can offer to staff. In services such as the SFRS effectively targeting the large retained (part-time) workforce with health, wellbeing and fitness programmes is a challenge.

[14] 61% of MFB staff are over 45 years old. The TFS has seen a gradual increase in the workforce average age over the last five years, particularly for those over 55. Most TFS staff are aged between 35 and 55. The proportion over 45 is 41% in the SFRS, and 33% in the LFB. Both the LFB and SFRS recently raised the retirement age from 55 to 60 and expect to see the impact of this change in the next five to ten years.

Doing more with less

All case study sites identified resource limitations in implementing safety, health and wellbeing programmes.

- The SFRS and LFB are experiencing the impact of austerity measures and have reduced financial budgets available. Funding for the SFRS has reduced by £31.5m in cash terms since 2012/13.[15] The LFB had budget cuts in the last five years and reduced the number of health and safety staff in that time.
- The TFS identified the difficulty of providing safety, health and wellbeing resources to volunteers within a limited budget.

Case study sites need to do more with less (or the same level) funding. This involves:

- Being flexible and creative with programmes, for example the TFS provides health checks to volunteer firefighters at the firefighter games.
- Identifying and targeting areas of need effectively. All sites are using data to identify the areas where the most injuries or accidents are occurring. For example, the LFB identified where slips, trips and falls are occurring and then targeted these areas.
- Using electronic resources. For example, the SFRS uses Skype and digital libraries to provide services to remote areas more cheaply.
- Working with others to reduce duplicating services, for example, the LFB is working with the United Kingdom Fire Services to develop a National Operation Guidance document which can be used by all United Kingdom Fire and Rescue Services, reducing duplication of effort across services.

Resources are likely to remain limited in the near future.

> 'The other difficulty we have had is a **competing priority for resources** so while we may have put additional resources into the safety area, there have been other high priority issues within HR that have overtaken safety.' (TFS)

[15] SFRS 2014-15 Annual Report. Retrieved from http://www.firescotland.gov.uk/media/933494/sfrs_annual_report_and_accounts_2014_15.pdf

6. Summary and implications for New Zealand

The NZFS is focussed on improving safety, health and wellbeing outcomes for staff across the service. Key components and challenges identified by the case study jurisdictions are relevant for the NZFS.

Key components of best practice

Incorporating the key components of a good safety, health and wellbeing system will be important for the NZFS going forward. This will involve building the core components of safety, health and wellbeing systems. These include:

- **Legislation** that enforces the provision of safer and healthier workplaces
- **Effective relationships with unions and volunteer associations** that encourage all parties to support better outcomes
- **Stakeholder engagement** and relationships with the other emergency responders, national bodies, health providers, and others
- **Leadership** recognition, commitment and visibility
- **Policies** that work in context for better outcomes
- **Continuous learning** across all parts of the system
- **Activities** and programmes that fit the need and environment
- **Effective engagement with employees and volunteers** that increases ownership of health and safety
- **A commitment to behavioural safety** and support to achieve change.

Best practice safety, health and wellbeing occurs when the components are working effectively together.

Changing contexts

The context of safety, health and wellbeing systems for fire services is changing. The workforce is ageing resulting in higher health management needs. More emergency responders are merging services, meaning that systems may need to be adapted for different types of responders (Fire service, Police, Ambulance). Operational experience is decreasing as preventative work improves leading to a need to maintain operational skills in a low risk environment.

Implications for the NZFS

The NZFS is going through a period of transition. Maintaining safety, health and wellbeing as a priority will be important as the new Fire and Emergency New Zealand Service is developed. Key areas are identified below.

- **Setting strategic plans and policies, leadership recognition and championship, and adequate resourcing** are essential to building safety, health and wellbeing systems.

  During recent changes in the SFRS, prioritising safety, health and wellbeing in policies and plans was important. Leadership recognition and championship was also essential in the SFRS to ensure that safety, health and wellbeing remained a priority, was adequately supported, and was integrated into the new service at all levels. Maintaining safety, health and wellbeing as a priority in policies, plans and targets will be important as the new Fire and Emergency New Zealand service is developed.

- **Establishing a culture of safety amongst firefighters** will be an ongoing challenge.

  The NZFS already identified the need for, and is developing a strong leadership culture on safety, health and wellbeing. However, transmitting that culture to frontline staff will be a future challenge. As identified internationally, achieving behaviour change in frontline firefighters can be difficult. LFB is working with staff to review and reflect on why incidents occurred and is also investing in behavioural training for staff. Improving behavioural safety at an individual level contributes to a culture of safety amongst frontline firefighters. This will be important for improving safety, health and wellbeing in the NZFS and the future Fire and Emergency New Zealand service.

- Providing safety, health and wellbeing services for **volunteers and staff in remote and isolated areas** can be a challenge for fire services.

  The TFS and SFRS identified creative strategies to mitigate the impact of isolation such as utilising events where volunteers are gathered together to undertake health checks. They also used technology such as Skype, online resources, and training DVDs to provide services for these firefighters. The SFRS also recognised the need for flexibility in building policies for diverse regions with varied needs. As NZFS integrates with rural fire authorities, flexibility and creative responses may be necessary to effectively build safety, health and wellbeing best practice in the new organisation.

  Providing access to services in isolated areas will contribute to improving safety, health and wellbeing equity for career and volunteer firefighters.

- Providing safety, health and wellbeing services and ensuring the safety, health and wellbeing of an **older and more diverse workforce** will be an ongoing challenge.

  All case study jurisdictions are considering the implications of an ageing workforce. Safety, health and wellbeing concerns such as workforce sustainability, loss of experience, fitness in older age, health risks for older firefighters, and the financial cost of health and safety amongst older firefighters were all identified by case study

jurisdictions. In New Zealand 30% of volunteer firefighters are over 50, and an additional 29% are between 40–49. Amongst career firefighters 30% are between 40–49, and 39% are over 50.

Increasing gender and ethnic diversity in the fire service is a challenge for case study sites and the NZFS and may have implications for delivering safety, health and wellbeing services. Ensuring equitable access to services and programmes that meet the need of diverse audiences will be ongoing challenges in this context.

Creating safety, health and wellbeing programmes and policies for changing demographics will continue to be important for the NZFS.

- Providing safety, health and wellbeing services within **budgetary constraints** is a challenge, particularly for a predominantly volunteer workforce.

  Similar to case study jurisdictions, the NZFS also operates within budgetary restraints. With a very large volunteer workforce, effectively providing safety, health and wellbeing training and resources may be an ongoing challenge for the NZFS. The volunteer workforce is further set to grow with the amalgamation of rural fire authorities and creation of the new service. The service provision implications of this will be important.

As NZFS improves safety outcomes for firefighters and communities, challenges identified by case study sites such as behavioural change, stress and wellbeing, and lack of operational experience may become more important. Continuing to learn from international jurisdictions and other industries may be key to improving outcomes in these areas for the NZFS.

Appendices

Appendix 1

Melbourne Fire Brigade Organisational structure

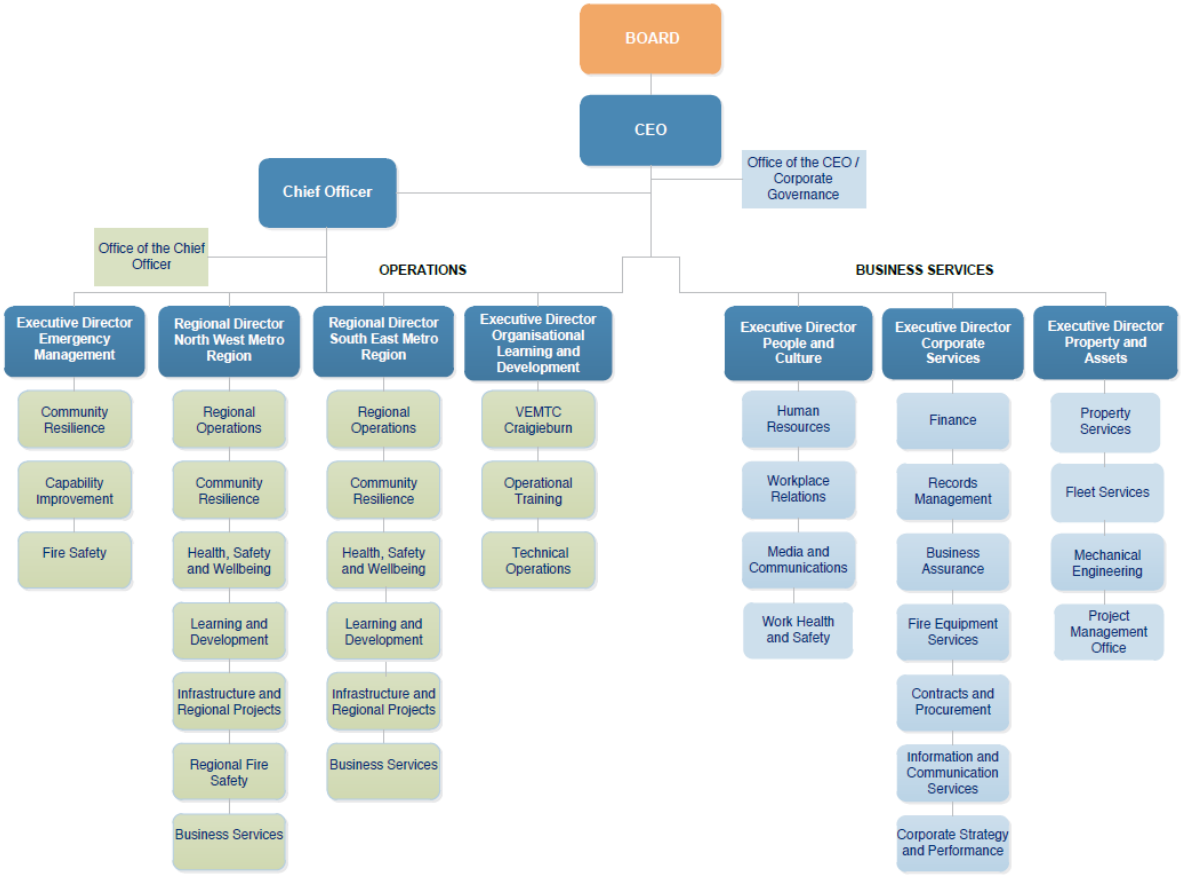

Figure 1: Melbourne Fire Brigade Organisational structure

Appendix 2

Tasmania Fire Service organisational structure

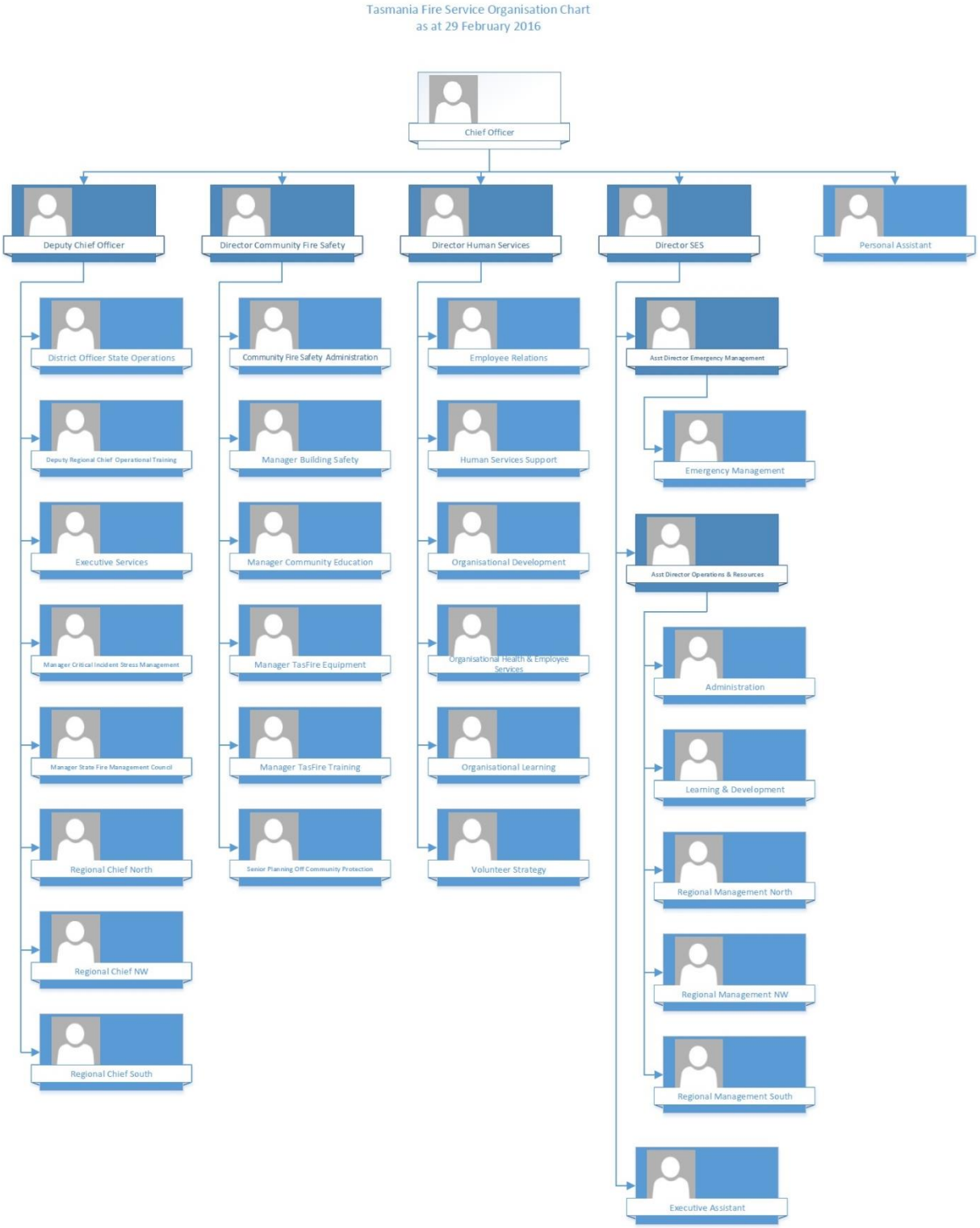

Figure 2: Tasmania Fire Service organisational structure

Appendix 3

London Fire Brigade top management structure

Figure 3: London Fire Brigade top management structure

Appendix 4

Scottish Fire and Rescue Service organisational structure

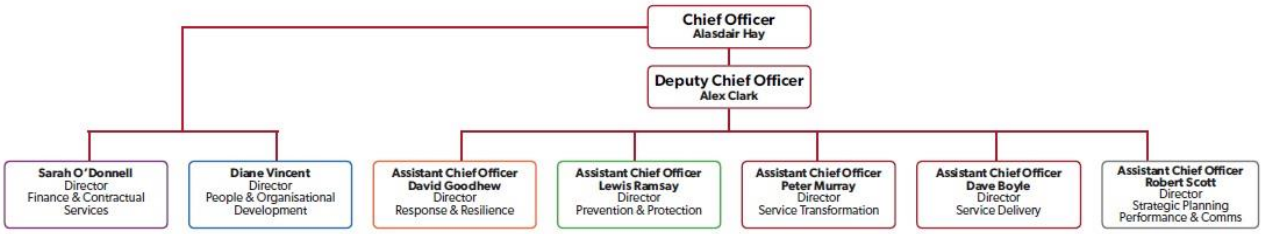

Figure 4: SFRS Organisational structure

Figure 5: Health, safety, and wellbeing organisational structure

Appendix 5

The MFB monitor:

- Complete scheduled skills maintenance drills
- Reduce lost time injury frequency rate (LTIFR)
- Risk assessments and Occupational Health and Safety inspections completed
- Unplanned leave taken (Hours per FTE)
- The number of Work Cover claims
- The hazard/near miss: Injury rate ratio
- The number of four-person crewing

The TFS monitor:

- Average sick days per employee
- Lost time accident rate
- Average time lost rate
- Number of workers compensation claims
- Absence rate
- Absence frequency
- Types of injury
- Employee training
- Accident investigations implemented
- Number of safety meetings held
- Number of workplace inspections
- Number of health and safety plans developed and implemented
- Employee safety representative meetings
- Number of emergency evacuation practices conducted.

The LFB monitor:

- Working days lost to sickness - operational staff (%), control staff (%), Fire and Rescue Staff (%)
- Workforce composition
- Road traffic accidents involving brigade vehicles
- Reporting of Injuries Diseases and Dangerous Occurrences Regulations (RIDDOR) events
- The total number of local accident investigations taking longer than 28 days to resolve
- Numbers of operational staff still awaiting training on key courses
- Number and results of Health, Safety and Environmental premises audits, and the extent to which the previous audits recommendations have been implemented.

The SFRS monitor:

- Injury rates
- Number of accidents and injuries
- Reporting of Injuries Diseases and Dangerous Occurrences Regulations (RIDDOR) events
- Near misses
- Acts of violence
- Vehicle accidents
- Number of medical assessments and compliance rates
- Management referral rates
- Management reviews
- Number of Fitness assessments, outcomes and compliance rates
- Time taken to offer a first health and wellbeing appointment
- Time taken to offer first case conference
- Time taken to complete Independent Qualified Medical Practitioner process.
- Progress against the health, safety and wellbeing objectives and equipment and property damage

Appendix 6

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