A Review of Metropolitan Fire and Emergency Services Board (MFB) Residential Risk Referral Process

An Interactive Qualifying Project
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Degree of Bachelor of Science by:

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Abstract

This report provides an analysis of the Residential Risk Referral Process used by the Metropolitan Fire and Emergency Services Board (MFB) in Victoria, Australia, from 2007 to 2016. From a database compiled for the study, the team determined the demographic profiles of individuals most often referred, which risk features were identified, and what actions MFB took in response to these inbound referrals. Firefighters are in a unique position to identify at-risk individuals within the community. The RRR process attempts to connect these at-risk individuals to government funded services that can assist in risk mitigation. From information gathered during the study the team developed a series of recommendations aimed at improving the RRR process.

Acknowledgements

Executive Summary

An at-risk population is comprised of individuals who are unable to receive, respond to, or act based on information before, during or after an emergency situation (AFAC, 2009). These at-risk groups can include the elderly, people with disabilities and people who experience social and financial disadvantage. At-risk groups are a growing portion of the population of Victoria, Australia and other jurisdictions.

The Metropolitan Fire and Emergency Services Board (MFB) in Melbourne, Victoria, Australia has implemented a process to advocate for at-risk individuals. This activity is known as the Residential Risk Referral (RRR) process. This process was implemented in 2007, initially in response to individuals identified by firefighters at an incident who would benefit from a referral to appropriate services to assist them to mitigate their risk. Over time, it has also come to include referrals from external agencies, affected people and their family and friends.

This project aims to analyse ongoing risk, as seen by internal and external stakeholders; common risk features; and treatments that are applied to mitigate risk in residential properties. The report will examine trends in relation to demography and risk and develop case studies that illustrate the complexity of the process.

Methodology

The project team examined data from the Residential Risk Referral Process from 2007-2016, along with an analysis of nine case studies of referrals that occurred during that time. This project delivers:

1. Analysis of the data stored from correspondence over the life of the process;
2. Analysis of the nine case studies and their methods in addressing risks;
3. Suggestions with supporting evidence for improving the effectiveness and accessibility of the RRR process.

Results and Analysis

The key results from this study are as follows:

Occupant Profile

- Older people are overrepresented in Residential Risk Referrals. Fifty seven percent (n=176) of referred individuals are aged 65 years or over. People aged 81 years and

over, represent 22% (n=68) of the referred individuals. The number of older people is projected to increase significantly in the future.

- These findings are consistent with research in Australia and overseas which identifies older people as being at higher fire risk and support the MFB Plan 205-18 (MFESB, 2015) analysis that an ageing population is a growing risk.

- Children under the age of 18 years are underrepresented in Residential Risk Referrals. Addressing the risks to children identified in RRR's is usually achieved through supporting the parent and/or engaging services with responsibilities in relation to child protection.

- Disability is identified in approximately half of the referrals. Physical disabilities were more commonly identified, but mental health related disability still represents a significant portion of the disabilities identified. Multiple disabilities are commonly identified.

- There is no evidence of a link between gender and risks identified in inbound referrals.

- Living alone is the most commonly identified occupancy profile in referrals. Case Studies 3 and 4 illustrate this risk profile. This is consistent with findings in previous WPI/MFB research from 2011 which found that the majority (63%) of fire fatality victims lived alone. Single households represent a growing risk in the community due to the increase in number of single person households.

- Referrals most often identify owner occupied residences, but referrals from public housing properties are overrepresented. DHHS Housing and MFB share a proactive approach to the safety of public housing tenants. This may account in part for the high rate of referrals for this group; it may also be indicative of a link between disadvantage and risk.

- Referral addresses appear to be more commonly located within areas with social and financial disadvantage. Further research is required to confirm the extent and nature of the relationship between referrals and relative disadvantage.

Risk Profile
- The RRR process is more focused on an individual's risks rather than structural risks. A wide range of risks are being identified by internal and external stakeholders. The

three most commonly identified risks are hoarding, access and egress, and age related disability.

- Ninety-six percent of inbound referrals from internal and external stakeholders identify more than one risk. Firefighters identified 4.2 risks on average, while external stakeholders identified 3.5.

- External stakeholders are trained to identify risk factors and are contacting ARG in relation to fire related risks. Firefighters are performing risk assessments and advocating for the at-risk individual through the RRR process.

- Firefighters, even without formal training, are identifying and articulating a broad range of risks that include mental health, high fire risk behaviour, and lack of insight/capacity. This indicates that firefighters understand the duality of the organisational responsibilities in relation to response and prevention through making a referral as a direct result of an emergency incident.

- Firefighters are identifying ongoing risks and making referrals via the RRR process at a variety of incidents; not just fires.

Inbound Referrals
- The overall number of inbound referrals from internal and external stakeholders has steadily increased by an average of 53% per year since 2007.

- A wide range of agencies contact ARG as inbound external referring agencies. Community and government agencies are most commonly submitting referrals to ARG making up 88% of inbound external referrals.

- Inbound referrals are coming from firefighters across all of the MFB districts. The variability of the number of inbound referrals from firefighters across the districts could be representative of the number of at-risk individuals with whom firefighters encounter.

- The years 2013 - 2014 experienced the largest increase of inbound referrals from firefighters; this could be due to the promotion of the RRR process by Operational Commanders and the development of the HNS.

- The provision of information about the RRR process to firefighter from Operations Commanders appears to have been more effective than promotion by ARG. However this analysis is inconclusive.

Outbound Referrals

- The response by ARG to inbound referrals is made on a case by case basis. Responses usually include more than one action.

- Outbound referrals are made to agencies funded to address the identified risk as part of their program and/or legislative/regulatory role. ARG engages the program and/or agency most likely to assist and support the affected individual to deliver an improved safety outcome.

- More referrals are directed to local government authorities (LGAs) than any other single agency. Referrals are made to a range of departments within LGAs. Outbound referrals to LGAs are most frequently made to the Local Laws and Aged and Disability departments.

Conclusion and Recommendations

The Residential Risk Referral process is a tool for firefighters and members of the community to use to advocate for the increased safety of at-risk individuals. This is the first report analysing residential risk in Victoria, Australia using this type of data. The project team has composed a series of recommendations based on analysis of the RRR process. We recommend:

- That ARG establish an additional procedure to check ERIC to identify any previous incident over a 24 month (or other predetermined) period.

- That ARG develop a business case for the purchase of a case management system to effectively manage RRR data and improve the accessibility and analysis.

- That any case management system procured by ARG should have the ability to generate ad-hoc reports on referrals data to generate evidence of emerging trends, risks and other issues.

- That ARG engage with the Organisational Learning and Development department to develop training for firefighters in relation to the RRR process.

- That ARG continues to engage external stakeholders in a variety of ways to raise awareness about fire safety and other life safety issues for at-risk groups and to promote the use of the RRR process by external stakeholders.

- That MFB advocate for the AIRS database be significantly modernised to record demographic information. Important information about who is more at risk of

having a fire or other emergency should be collected on a national scale. A more comprehensive database could provide information about potential residential risks

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Acronym Bank

Acronym	Meaning
ABS	Australian Bureau of Statistics
AIRS	Australian Incident Reporting System
ACAS	Aged Care Assessment Services
AFAC	Australasian Fire and Emergency Service Authorities Council
(APMHS)	Aged Persons Mental Health Services
ARG	At Risk Groups
AV	Ambulance Victoria
CALD	Culturally and Linguistically Diverse
CFA	Country Fire Authority
CIRS	Clutter Image Rating Scale
CREM	Community Resilience Emergency Management
DELWP	Department of Environment, Land, Water and Planning
DHHS	Department of Human and Health Services
EMR	Emergency Medical Response
EMS	Emergency Medical Services
ERIC	Emergency Response Information Catalogue
FIA	Fire Investigation and Analysis
HAAC	Commonwealth Home Support Programme

HNS	Hoarding Notification System
HSO	Housing Services Officers
IQP	Interactive Qualifying Project
LFB	London Fire Brigade
MD	Metropolitan District
MFB or MFESB	Metropolitan Fire and Emergency Services Board
NFPA	National Fire Protection Association
PHWA	Public Health and Wellbeing Act 2008
RRR	Residential Risk Referral
SEIFA	Socio-Economic Resources Indexes for Areas
SES	State Emergency Services
SfHRT	Support for High Risk Tenancies Program
SHASP	Social Housing Advocacy and Support Program
UK	United Kingdom
USA	United States of America
VCAT	Victorian Civil Administrative Tribunal Civil List
VCOSS	Victorian Council of Social Services
VERMS	Victorian Emergency Risk Management System
WPI	Worcester Polytechnic Institute

1.0 Introduction

The risk of a residential fire, as well as the risk of injury and death from fire, is greater in certain population groups (Aufiero et al, 2011). These "at-risk groups" are comprised of "individuals unable to receive, understand, or act on information prior to or during an actual emergency" (Australasian Fire and Emergency Services Authorities Council, 2009). At-risk groups include the old, the very young, people with disabilities and people who experience social and financial disadvantage. For these individuals, fire risk is one component in a broader range of risks which impact their safety, health, and wellbeing. Due to a range of demographic and social factors, at-risk groups represent a growing proportion of the population in Victoria, Australia and in other jurisdictions.

Fire services are beginning to develop adaptation strategies to manage the fire risk posed by growing numbers of at-risk individuals and households (King, 2014). One fire service, the Metropolitan Fire and Emergency Services Board (MFB) in Victoria, Australia, has developed a strategic approach to addressing the needs of those most at-risk in the community. This approach involves working at a local, state and national level with key stakeholders to advocate for improved safety outcomes driven through various external frameworks such as training and policy at a program level. This is an approach that closely aligns with strategic imperatives within the emergency management sector in Victoria for fire and emergency services to work together with government, the private sector and individuals to provide a joined-up approach to delivering services that reduce risk and build individual and community resilience.

The focus of this study is to examine one specific area of activity; which is Residential Risk Referral (RRR) process. The process was developed in response to the growing number of referrals from firefighters and from external stakeholders seeking information, advice and follow-up regarding individuals who experience a high level of on-going fire and related risks. This process represents the first systematic response by an Australian fire and emergency service to build individual and community resilience in this manner. This report is the first analysis of the RRR process.

Goal Statement

The goal of this project, sponsored by MFB, was to analyse the RRR process. A primary aim was to analyse ongoing risk, as seen by internal and external stakeholders; common risk features; and treatments that are applied to mitigate risk in residential properties. The report examined trends in relation to demography and risk and developed case

studies that illustrate the complexity of the process. The results from this analysis provided a basis for recommending future improvement to the RRR process. The RRR process is illustrated in Figure 1 below.
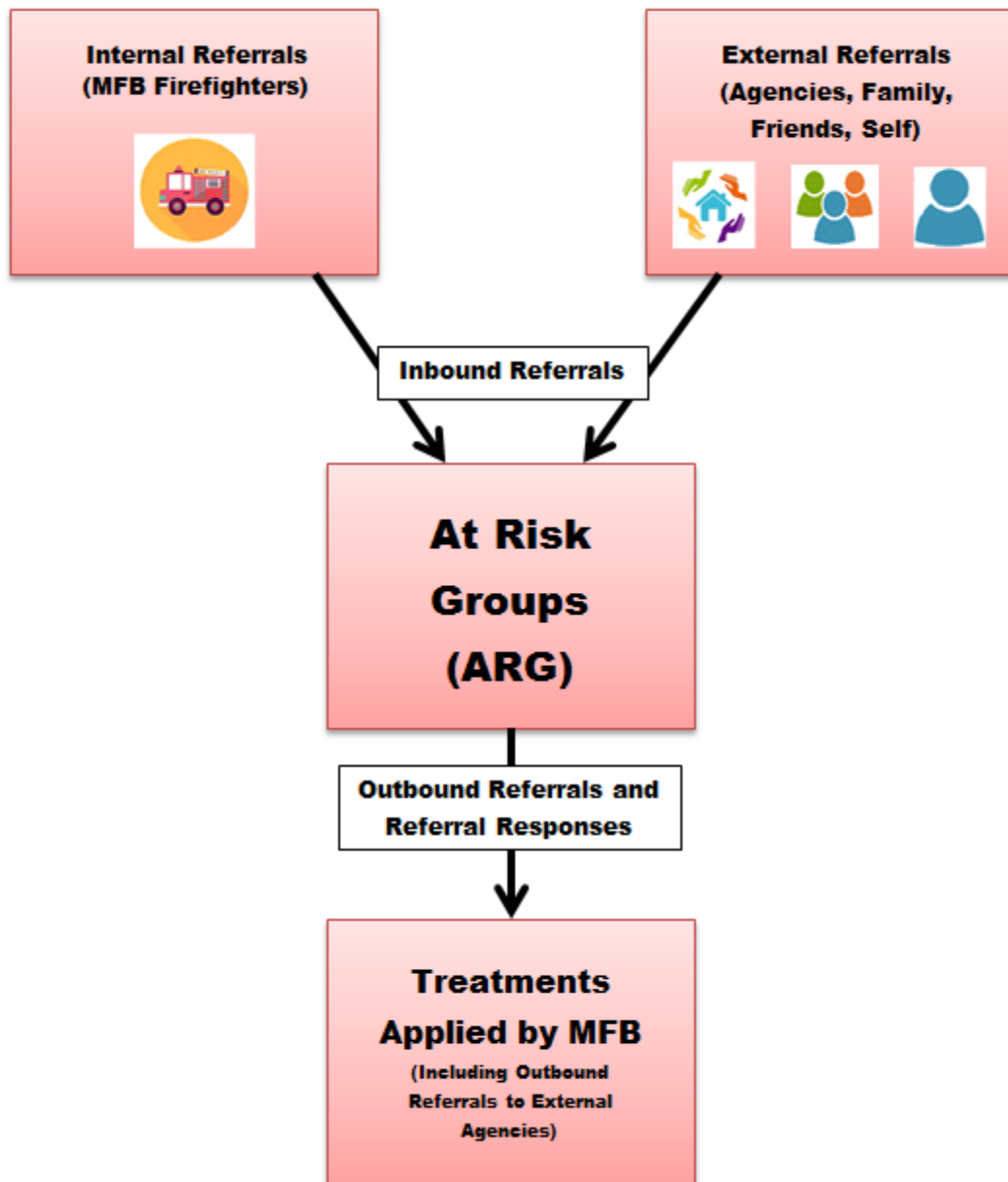
Figure 1: RRR Inbound and Outbound Referrals

2.0 Background

MFB and other fire and emergency services work to reduce the risk and consequence of fire and other emergencies in the communities they serve. Risk is defined as "the probability of harmful consequences, or expected losses (deaths, injuries, property loss or damage, impact on livelihoods, disruption of economic activity, or environmental damages) resulting from interactions between natural or human-induced hazards and vulnerabilities" (Alwan, 2007). Certain population groups experience more risk than others due to factors such as age, disability or disadvantage. To effectively serve at-risk populations, fire and emergency services have developed and implemented risk mitigation and prevention strategies designed to minimise the risks faced by the most at-risk segments of the population. This chapter discusses at-risk groups, emergency services in Victoria, and the role of the MFB. It also discusses the need for effective and innovative prevention strategies such as the Residential Risk Referral process.

2.1 Populations at Greater Risk of Fire and Other Emergencies

In Australia, high fire risk groups in a residential context have traditionally been identified via fire injury and fatality statistics. In preventable residential fires, older people are the most common population group reflected in fire injury or fatality statistics (MFESB, 2015, pp. 16).

In 2009, the Australasian Fire and Emergency Service Authorities Council (AFAC) completed a study investigating which population groups are more at-risk of fire injuries. Fire injury is defined as "physical damage that is suffered by a person as a direct result of fire…" (Australasian Fire and Emergency Service Authorities Council, 2009). This study reviewed a broad range of primary literature to determine groups at greater risk of fire injury. It concluded that the population groups that are at higher risk of injury include: males, young children (0-4 years of age), young to middle aged adults (20-44 years of age), older adults (65+ years of age), persons with lower socio-economic status or poor educational background, ethnic minorities, and individuals who smoke or drink excessively (Australasian Fire and Emergency Service Authorities Council, 2009). Another study, completed by WPI and MFB in 2011, assessed the population groups that have an increased risk of fire fatality. Through the analysis of data gathered from MFB's Fire Investigation and Analysis (FIA), the study determined that older adults (65 years or older), individuals with disabilities or high risk behaviours (hoarding, smoking, and drinking), and individuals that lived alone were at higher risk of fire fatality (Aufiero et al, 2011). This is also confirmed by the Victorian

Council of Social Services' (VCOSS) report *Disaster and Disadvantage: Social Vulnerability in Emergency Management.* This report found that fire injuries or fatalities more often involve older people, people with disability (including mental health) people who are socially and financially disadvantaged and those who are affected by medication, alcohol and/or other drugs (King, 2014).

The AFAC, WPI/MFB, and VCOSS studies all found that older individuals and those with high fire risk behaviour are at-risk population groups. By identifying these at-risk populations, fire and emergency services can orient their prevention strategies to target those people who are most at-risk (Aufiero et al, 2011).

There is little research that considers potential at-risk groups in the context of incidents that do not involve injury or death. Previous WPI/MFB research has highlighted that AIRS, the national reporting system used by Australian fire and emergency services, does not provide for the systematic collection of demographic or individual risk information from emergency incidents. This project is, in part, an initial attempt to provide insight into the extent of unrealised emergency risk within communities in the Metropolitan District.

2.2 Demographic and Social Trends

Fire and emergency services work with their communities to build community resilience. This involves working with both the broad community and with high-risk groups. For fire and other emergency services, projected growth of the highest risk population groups poses a significant challenge.

Currently, populations in first world countries are ageing. In both the United States and Europe, approximately 23% of each population will be over the age of 65 by 2030 (Czaja, 2016). In Victoria, as of 2014, more than 20% of the population was aged 60 years or older with an expected growth to 25% by 2021 (King, 2014). With an ageing population comes greater levels of disability which can affect individuals' mobility, hearing and vision. Dementia is also increasing and is already the single largest cause of disability in elderly Australians and the second highest cause of death (Australian Bureau of Statistics, 2016). The ageing trend in first world countries is driven by the post-war "baby boom" generation. As this cohort continues to age, the way in which the elderly are cared for will need to change. This will involve a shift from residential aged care to a greater reliance on in-home community care. While this will be due in part to consumer choice it will also be due to the lower costs of supporting people in their home rather than in facility-based care. Victoria's

ageing population is already having an impact on MFB response profile, driving a steady increase in EMR incidents (MFESB, 2015, p. 16).

In the disability care sector, significant reform in the form of deinstitutionalisation has already occurred. The implementation of the National Disability Insurance Scheme will provide greater choice to people with disability. This will include more freedom to choose the setting in which they receive care.

Culturally and Linguistically Diverse (CALD) population groups comprise approximately 26% of the Victorian population (Victorian Multicultural Commission, 2011) For CALD communities there may be barriers to communication. These barriers can include reluctance to accept aid from external community care providers, fear of authorities and a lack of knowledge of the services available to them (Sawrikar & Katz, 2008). Language barriers can also make it difficult to educate CALD communities about the assistance available to them. CALD groups in Victoria are also experiencing an ageing profile (King, 2014, pp. 14).

Disadvantage and social vulnerability are additional components of increased emergency risk. Social vulnerability is defined as "people facing disadvantage, such as those in poverty, migrants, refugees, children, older people, people with disabilities, people who are homeless or transient, and people living in poor quality housing" (King, 2014, pp. 2). The Victorian Government defines disadvantage as "when an individual, family, or community is deprived of resources or opportunities that underpin social and economic well being" (King, 2014, pp. 7). The Victorian Council of Social Services' (VCOSS) report *Disaster and Disadvantage: Social Vulnerability in Emergency Management* focused on socially vulnerable groups within the context of large scale emergencies. The study found that disadvantage is a component of increased risk in the case of an emergency and that people facing disadvantage congregate in similar communities, further heightening risk. While a correlation between community location and risk has been shown, the prevalence of complex risk is not necessarily restricted to certain communities or population groups (King, 2014).

These trends and drivers will have a significant impact on the future response profile of fire and emergency services. The growth of at-risk groups may outpace emergency services capacity to respond. This implies that fire and emergency services should focus on prevention measures that seek to mitigate the risks of those who are most at-risk.

2.3 Emergency Services in Victoria

Within Victoria, the fire and emergency management sector is comprised of several statutory agencies, steered by Emergency Management Victoria (EMV). EMV is a state government department responsible for maximising the ability of the emergency management sector to work together with the community to ensure that at a system-wide level there is an integrated approach to emergency prevention, preparedness, response and recovery. The emergency response agencies that are EMV's key stakeholders are the Metropolitan Fire and Emergency Services Board (MFB), Country Fire Authority (CFA), State Emergency Service (SES), and Department of Environment, Land, Water, and Planning (DELWP). Each agency's responsibilities are defined in the Emergency Management Manual Victoria (Emergency Management Victoria, 2014).

MFB provides fire and emergency services to the Metropolitan District (Refer to Section 2.4 The Metropolitan Fire and Emergency Services Board (MFB)). CFA is comprised of 1,126 brigades that provide fire and rescue services for areas of Victoria outside of the Metropolitan District. CFA firefighters are mainly volunteers, but there are career firefighters based in outer suburban Melbourne and larger rural cities. SES is a volunteer organisation and is the control agency during natural disasters such as floods and earthquakes. It also assists in search and rescue activities, road accident rescues and major bushfires. DELWP's Land, Fire and Environment Group are responsible for fire prevention and firefighting activities on public land. These agencies work collaboratively towards a goal of "sustainable and efficient emergency management system that reduces the likelihood, effect, and consequences of emergencies" (Emergency Management Victoria, 2014).

Victoria Police and Ambulance Victoria exist outside of this framework but work closely with the fire and emergency management sector in Victoria. Victoria Police act as coordinators during fires and some emergency situations. When welfare needs are immediate, Victoria Police are responsible for connecting individuals with the necessary services.

2.4 The Metropolitan Fire and Emergency Services Board (MFB)

The Metropolitan Fire and Emergency Services Board (MFB) provides fire and emergency services to over four million residents and visitors in Melbourne and Victoria. MFB's response activities include fire control, emergency medical response, hazardous material response, road accident rescue, and a range of other functions including providing assistance to other emergency services. MFB collaborates with the emergency management sector and the community on fire and other emergency prevention, preparedness, response,

and recovery. This aligns with EMV's vision of creating a "safer and more resilient community" (MFESB, 2015). As an organisation, MFB's goal is to provide world class fire and emergency services to Melbourne and Victorians. In order to achieve this goal, MFB has a set of five strategic themes:

- Always Safe
- Improving Community Resilience
- Valuing Our People
- Delivering Exceptional Service
- Working with Others (MFESB, 2015)

Figure 2 is a map outlining the five MFB districts that form the Metropolitan District. Each of the MFB stations are also displayed. Fire stations on the border along the MFB/CFA region can turn out to emergencies within the CFA region.
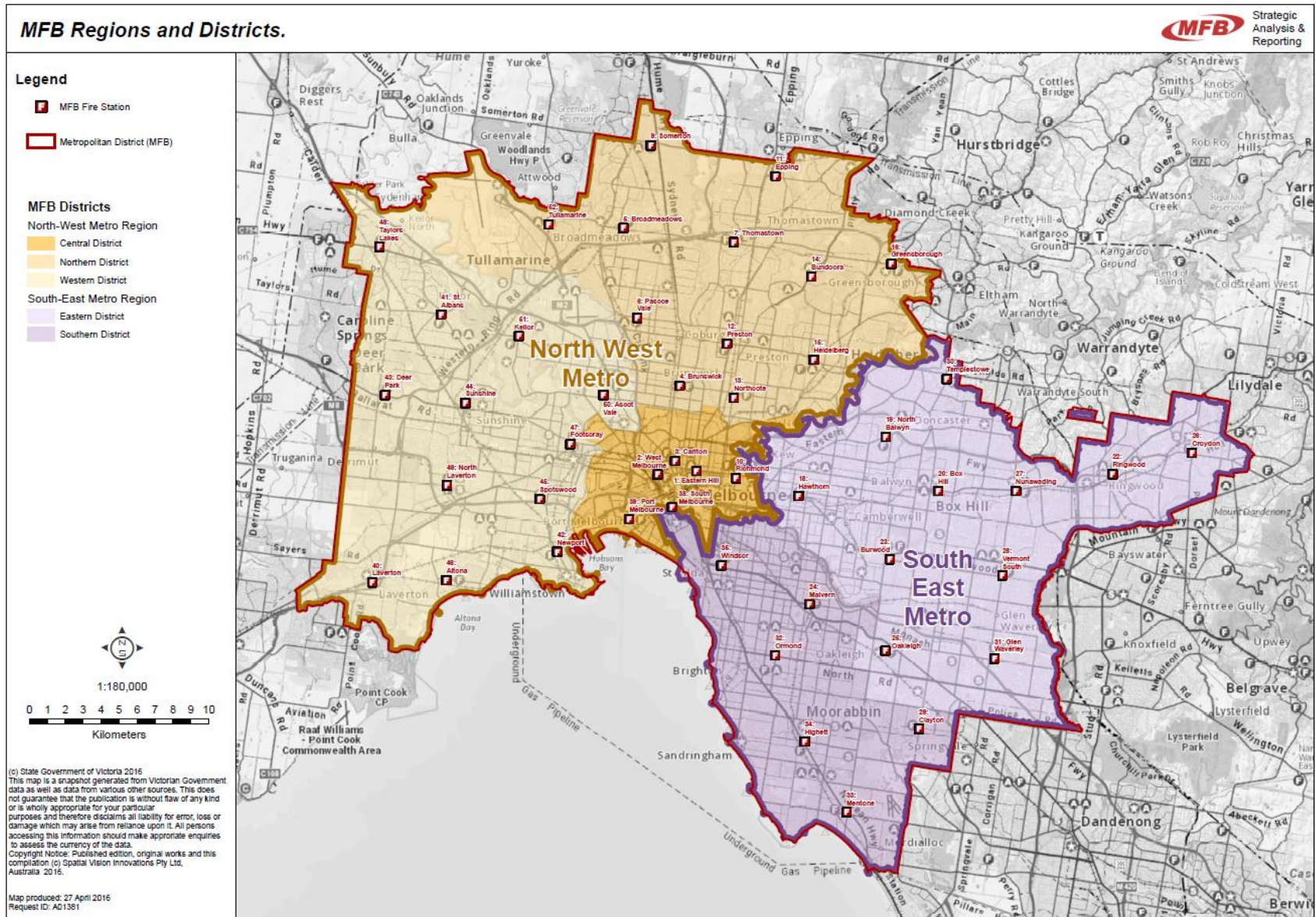
Figure 2: Map of MFB Regions and Districts

2.5 Community Resilience

Legislation governing MFB (primarily the MFB Act 1958) mandates MFB to undertake fire and emergency prevention activities as well as response activities. MFB encourages community resilience through emergency prevention and preparedness. Community resilience is defined as "a measure of the sustained ability of a community to utilise available resources to respond to, withstand, and recover from adverse situations." (RAND Corporation, 2016). A resilient community will be more equipped to survive and recover from an emergency event. MFB's Community Resilience Emergency Management department (CREM) focuses on improving community safety and resilience.

The CREM department has developed a *Community Resilience Strategic Action Plan* that encompasses a sector-wide approach to developing community resilience. The Plan focuses on building more resilient and safe communities by working with external organisations. Through collaboration, the Victorian community will be able to connect and become unified through culture, language, support, and ideas (Community Resilience Emergency Management, 2015). A unified community will have a greater understanding of its own wellbeing and safety. This understanding will encourage Victorians to work together to prevent, survive, and recover from emergencies.

CREM consists of three separate units: Community Education, Community Development, and At Risk Groups (ARG). The ARG department develops research and analysis, policy, practice, and advocates at a local, state, and national level to mitigate fire and emergency risk in the most at-risk cohorts of the community. ARG works to identify opportunities to utilise existing frameworks, relationships, or responsibilities to reduce the emergency risk of at-risk groups. For example, ARG developed and led a national project for fire and emergency services to embed basic home fire safety information into the national curriculum for community sector workers across aged, disability, mental health, children and youth services, and social housing. This ensures that home fire safety information is part of the training and qualifications of community care workers who deliver services in the homes of at-risk people.

2.6 Residential Risk Mitigation in Other Jurisdictions for High Risk Groups

Fire and emergency services in all jurisdictions develop prevention strategies to reduce the likelihood and the severity of fire and other emergencies. These prevention strategies often involve the development and delivery of programs which target and engage both the broad community and at-risk groups. In Australia, most fire and emergency services

commit resources to programs such as fire safety for children in schools, advertising campaigns to promote fire safety (e.g. the program encouraging people to change their smoke alarms during day light savings time) and targeting of identified risk groups such as aged, disability, and CALD communities.

In the UK most fire and emergency services are involved in the provision and/or installation of smoke alarms in residential properties. This activity is usually targeted toward at-risk groups. Merseyside Fire and Rescue Service is an example of how these activities commonly operate in the UK, beginning with a resident calling fire service and asks for a smoke alarm:

> "During the installation of smoke alarms, firefighters complete a risk assessment. A high score identifies fire and other safety risks in the home which cannot be addressed within the scope of the visit by firefighters. Completed risk assessment forms are forwarded to Community Fire Safety Teams. The Community Fire Safety Team predominantly comprises external community services specialists, but does include firefighters. Teams include members with a diverse range of skills, knowledge and experience in working with a specific risk group. The initial role of the team is to review the risk assessment forms and identify individuals with ongoing risks. Individuals are then matched to specific workers who engage them in a 'secondary process'" (Harris, 2010).

This "secondary process" includes assessment and referral to a range of external agencies to address safety, health and wellbeing issues to support the person to live safely at home.

London Fire Brigade (LFB) has developed a process through which people at-risk, identified through operational response, can be reported. This process is called the "Person At Risk" program (Bloomfield, 2016). At LFB, a notification is sent from a crew to the Station Officer who then refers the matter to the local borough council. In contrast to the community and government services in Australia, the UK has a significantly less complex service provision framework, making it easier for firefighters to report information about at-risk individuals to the appropriate service provider.

The state of Washington in the USA has a similar program to the LFB called the Vision 20/20 program. This program is run by Washington State Fire Departments and Washington State Fire Marshals as part of a Community Risk Reduction Strategy (CRRS). Through this program, fire departments distribute information packets regarding home fire safety and the importance of installing smoke alarms. Firefighters then canvas the

neighbourhood and offer to install smoke alarms and provide basic home fire safety information (Vision 20/20, 2015). The goal of this program is to mitigate risk within local communities through proactive community engagement.

Vision 20/20 is an isolated example within the USA. Most US fire and emergency services have not developed a formal referral processes to connect at-risk individuals with community care or social service agencies. The team interviewed Clinical Director of the UMass Memorial Healthcare and Clinton Hospital Emergency Department, Marc Gautreau. He stated that a referral process is not currently in place in Massachusetts, but it is being "contemplated [and] it is not clear the form it will take, as it is likely several years away." (See Appendix A: Interview with Marc Gautreau for full interview) Similarly, the Chief of the Center for Emergency Medical Services in Rhode Island, Jason Rhodes, also stated that the Rhode Island emergency department does not have a referral process. Rhodes said that, as a department, they are working toward "developing alternatives to hospital emergency departments as an endpoint for those persons suffering from alcoholism" and that "more social service interaction will emerge as more services engage in community paramedicine and mobile integrated health models." (See Appendix B: Interview with Jason Rhodes for full interview).

2.7 MFB Residential Risk Referral Process

The RRR process is the first formal response by an Australian fire and emergency service to mitigate residential risk by developing a two-way referral process that seeks to engage at-risk community members with services that can support the mitigation of safety risks that are present in their home.

In basic terms the RRR process can be described as follows. A risk is identified by either an internal or external stakeholder. A referral is submitted to ARG who assesses the risks and related issues. In most cases action is then taken by ARG, based on the individual circumstances. This action can include the provision of information and advice or making a referral to an external agency most likely to be able to address the risk within the scope of its organisational role and responsibilities. ARG's overview of the RRR can be seen in Figure 3.

Operational Firefighters

Community and Government Agencies

Affected Individuals

Family, Friends, or Neighbours

Risk

An ongoing risk is identified by operational firefighters, community and government agencies, affected individuals , family friends, or neighbours , and referred to At Risk Groups , Community Resilience .

The risk and any other safety related issues are assessed and reviewed and a referral response is developed .

Referral(s) are made to the appropriate referral agency(ies) by phone and confirmed in writing.

Email to reporting officer or external referrer to confirm follow up completed .

All correspondence and information to be placed in the Residential Risk folders .

Figure 3: Residential Risk Referral Process Flowchart (Adapted from Harris, 2015)

Inbound referrals are accepted via phone, email or, for firefighters, via a referral form on the MFB intranet. The risk is assessed by ARG and, if required, consent and additional information are obtained. A file is established for the residential address if, after the database is checked, there has been no previous engagement. In the event of prior engagement, the existing file container is checked to identify what has occurred and which, if any, agencies may have previously been involved. ARG identifies an appropriate service provider to address the needs and risks of the individual and a referral is made, first by phone and then confirmed in writing. In other cases the action may only involve the transfer of information and advice.

2.7.1 Inbound Referrals

Inbound referrals to MFB that identify a residential risk, come from a variety of stakeholders within MFB (most commonly firefighters) and from external sources. These include community and government agencies but also include family members, friends or neighbours and self-referrals. Inbound referrals from firefighters are predominantly received after responding to an incident at a residential property. Firefighters are in a unique position to identify residential risk due to their emergency response role and their dynamic risk assessment skills. Command and control arrangements in Victoria provide a clear framework for firefighters to address immediate risks of an individual through a referral to Victoria Police at the scene of the incident. The RRR process provides an avenue for firefighters to assist at-risk individuals to mitigate risks that are not immediate, but may be on-going as a result of behavioural, physical or environmental factors. The reason firefighters are motivated to make a referral is best summed up by a statement from an MFB firefighter in a referral from 2011: "I just can't walk away and leave this situation unaddressed."

Inbound referrals submitted externally (i.e. not by firefighters) are predominately from community and government agencies. At the time of contact, the external agency has usually already developed a relationship with an individual or is in the process of doing so. Agencies usually make an inbound referral to MFB when seeking to fulfil their duty of care towards an individual in relation to addressing a fire risk.

2.7.2 Outbound referrals

An outbound referral is the most common action carried out by ARG after receiving notification of a risk by either internal or external stakeholders. ARG identifies an appropriate service provider to address the needs and risks of the individual and an outbound referral is

made to that agency. The recipient agency is chosen on a case-by-case basis as the service most likely to be able to engage the occupant to address the risk and achieve an improved safety outcome. Engagement with external agencies also provides a secondary benefit in that it raises awareness about fire and other risks with stakeholders who work with at-risk groups.

2.7.2.1 Duty of Care versus Dignity of Risk

Within Victorian State Government departments, two critical considerations are made to determine the agency, organisation, or person obligated to address an individual's need. These considerations are the duty of care of an agency, and the dignity of risk of the affected individual. Duty of care encompasses the responsibility of an agency to take action in various scenarios. When an agency has a duty of care, failure to respond to a situation can result in charges of negligence (Victorian Government, 2015). Conversely, according to the Victorian Equal Opportunity & Human Rights Commission "dignity of risk recognises that people should be able to make free choices to take actions that involve a level of risk. This is part of exercising the right to personal autonomy to make decisions about a person's own life." (Victorian Equal Opportunity Human Rights Commission, 2014). There are overlapping themes between these two ideas that create uncertainty about who is responsible for an individual's welfare. If no action is taken by an agency, they can be held liable in the event of an injury or death resulting from an emergency. If an agency does act, however, they could be viewed negatively for their invasion of an individual's right to engage in personal risks. According to *The Charter of Human Rights and Responsibilities 2006*, public authorities and agencies have the responsibility to address an individual's risks without infringing on the individual's personal rights to put themselves at risk. This means that there must always be reasonable cause to address the risk. Therefore, the risk mitigation strategy must be warranted and proportional to the level of danger presented by the risk (Victorian Equal Opportunity Human Rights Commission, 2014). Emergency service organisations must address these considerations when making decisions about how to respond to and follow-up with individuals identified through the RRR process.

Receiving consent from an at-risk individual facilitates the RRR process. When responding to an incident, firefighters may receive direct verbal consent from the individual. If this is not possible, a member of ARG will attempt to get consent via a follow-up phone call with the affected individual. Depending on the scenario and severity of the referral, consent may not be required. In these referrals, considerations into duty of care and dignity of risk must be made to ensure that the response is warranted by the situation.

2.7.3 Promotion of the RRR Process

The RRR process was developed as a response to a practice that had existed in an ad-hoc fashion. As the RRR process has developed and grown, there are factors which have contributed to its increased take up.

2.7.3.1 Internal Stakeholders

In 2013, the inbound referral form was created for firefighters to use when advocating for at-risk individuals. To increase and improve the inbound referral process, Denis Rich, while acting in the role of Operational Commander at the Community Resilience Department in the Western District, developed an additional tab in the "Reporting of Ops Fire Safety Issues" on the MFB intranet. This added the "Residential" tab in addition to tabs for Dangerous Goods and Building Fire Safety. To promote this change, an email was sent to all firefighters announcing the establishment of the new tab. After this, Operational Commanders visited fire stations to continue the promotion. Six months later, another email was sent to all firefighters reminding them of the purpose of the inbound referral form. To continue increasing awareness about the RRR process and the inbound referral, ARG has included information about the availability of the tab in presentations to firefighters.

This information is included in a hoarding presentation for firefighters. The information includes where to find and how to access the tab and automated form and the types of risks which can be reported. These presentations are not a mandatory part of firefighter training, but information about the RRR process is increasingly included in formal internal MFB training at various levels.

2.7.3.2 External Stakeholders

ARG engages with a broad range of the community and government sectors. This includes, but it is not limited to, community aged and disability care, mental health, community and public housing, and various departments of local government; including local laws, environmental health, and community care. These engagement activities often involve presentations or participation at local and state forums and meetings. Through this engagement, CREM and ARG are recognised as a point of contact for information related to fire prevention and other safety issues.

ARG's previous work in relation to hoarding is a significant factor in raising the awareness of MFB's fire prevention role for at-risk groups within the community and

government sectors. These stakeholders are comprised of two main groups, agencies with responsibility for the provision of community care and agencies with regulatory or legislative compliance.

Australia has a robust but complex community care service sector. Providers of care services are predominantly government funded and work within clearly prescribed policy and practice frameworks as a core component of service delivery. In addition to local, State and Commonwealth funded government departments, agencies and services, providers also include not for profit agencies. Community care services include aged and disability, social housing (public and community housing), children youth and family services, mental health for children, mental health for young people, mental health for adults, and aged care and assessment services. The services they provide may be temporary or long term. Each of these services/programs may have a single regional office or multiple providers across a region.

Agencies with regulatory or legislative compliance are smaller in number and are more often a government department of local government. These include specific departments with responsibility for local laws, environmental health, fire prevention and building services. There are 24 separate Local Government Areas (LGAs) within the Metropolitan District.

ARG regularly interacts with the agencies and/or programs described below (Table 1: Victorian Agencies: Roles and Responsibilities in Hoarding and Squalor Incidents) when taking action in relation to an inbound referral. This engagement includes both receiving inbound referrals and making outbound referrals.

Table 1: Victorian Agencies: Roles and Responsibilities in Hoarding and Squalor Incidents
(Adapted from State Government Victoria, Department of Health, "Hoarding and Squalor: A Practical Resource for Service Providers")

Agency	Role and Responsibilities
Local Government - Aged and Disability	Aged and Disability assists older people to live in their own homes with basic support. (See Commonwealth Home Support Programme and Home Care Packages below)
Local Government - Local Laws	Local laws are designed to protect and enhance the health and safety of residents and visitors and the amenity of the municipality.
Local Government - Environmental Health	Environmental Health responds to public health hazards, assessing public health risks and taking appropriate action. Determine when the situation is likely to result in a nuisance as defined under the Public Health and Wellbeing Act 2008 (PHWA).

Agency	Role and Responsibilities
Local Government - Building Services	Building Services investigates dangerous buildings and buildings that don't comply with the required permits. Gets involved when a building is deemed structurally unsound.
Local Government - Municipal Fire Prevention	Every local municipal council has the statutory responsibility to appoint a fire prevention officer to give effect to certain fire prevention provisions and notify owners of fire prevention notices. Depending on the location, these provisions must align with the CFA Act or the MFB Act.
Commonwealth Home Support Programme and Home Care Packages	In Victoria, Commonwealth Home Support Programme (HAAC) is predominantly provided by local government. Home Care Packages are the next level of care and are more often provided by not-for-profit organisations. The aim of these programs is to support older people to live safely in the community.
Community Housing Provider	The Community Housing Provider is funded by the commonwealth and provides housing for families and individuals on a low to moderate income. Not-for-profit housing organisations act as landlords for individuals who pay more than 30% of their income on housing. This provides these individuals with security of tenure and affordable rental rates.
Department of Health and Human Services (DHHS) - Housing	Provides supported and shared accommodation for people with a disability and high support needs. These accommodations can include congregate care and group homes.
Department of Health and Human Services (DHHS) - MACNI	Provides coordinated support for people 16 years and older with multiple and complex needs to achieve stability in health, housing, social connection, and address high levels of risk management and safety to the individual and the community.
Department of Health and Human Services (DHHS) - SHASP and SfHRT	Social Housing Advocacy and Support Program (SHASP): Provides case management support to clients where their tenancy is breaking down or at risk of breaking down, and works with other services to assist individuals to stabilise their tenancy. Support for High Risk Tenancies Program (SfHRT): Provides secondary and tertiary consultation, professional development and priority projects across program areas of DHHS. Strengthens human service system's response to people with complex care needs through coordination of services.
Department of Human Services - Child Protection Services	Assists families to address living conditions that may pose significant harm to children. This may include the engagement of other services (family services, municipal council, and mental health), or practical support in removing excess debris from the residence. Placing children out of the home may be necessary to ensure their safety depending on the circumstances of the specific residence.

Agency	Role and Responsibilities
Aged Care Assessment Services (ACAT or ACAS)	Comprehensively assesses the needs of frail, older people and assists them to access the most appropriate types of care and support.
Aged Persons Mental Health Services (APMHS)	Services include inpatient services, community case management, and aged persons' mental health residential care services. Primarily for people with long-standing mental illness over the age of 65, or those who have developed a functional illness, such as depression, later in life.
Adult Mental Health Services	Provide a range of components so that people have access to similar service responses and functions wherever they live. These services are aimed to people with a serious mental illness or mental disorder who have associated significant levels of disturbance and psychosocial disability due to their illness or disorder.
Child and Adolescent Mental Health Services	Provides mental health services to individuals 18 years or younger who are experiencing serious emotional disturbance.
Public Hospitals: HARP, TRAAC, and Social Work	Provides temporary allocations to support and prepare individuals for successful discharge from a hospital setting, and integration back into their homes and communities.
MFB - Fire Investigation and Analysis	Investigates incidents and fire through detailed analysis of a scene for life safety and property loss purposes, and identifies and analyses fire trends.
MFB -Building Inspections and Compliance	Reviews new and revised building legislation, conducts building inspections, and investigates new fire safety initiatives (Building Inspections and Compliance, 2009).

2.8 Summary

The risk presented by specific populations groups presents a current and future challenge for emergency services. As a result of demographic and societal trends and drivers, at-risk population groups are expected to grow. The Residential Risk Referral process is an organisational response by MFB to address risk which utilises stakeholders best placed to identify and mitigate risk. It provides a pathway through which, once identified, affected individuals at increased risk of a fire or other emergency can be connected to appropriate agencies and programs for risk treatment through assessment, support or intervention.

3.0 Methodology

The team used two main methods to develop evidence to inform this project:

1. Development of case studies from the file notes of past referrals;
2. Analysis of the RRR database to identify trends within the referrals;

3.1 Case Studies

Case studies were researched and written to illustrate the complexity and diversity of risk features which are referred (both in and out) via the RRR process. Some case studies focus on cases that required multiple interventions, referrals and agency assistance. These case studies show the complex interactions between multiple agencies that are required to reduce a single risk.

Each case study provides an outline of the demographic features, the nature of the risk, and the agencies to which the issue was referred. The information in the case studies is based closely on the information within the case-file notes relating to these referrals. They were reviewed by ARG staff to ensure that the privacy of individuals is maintained.

The case studies provide context for the analysis of the RRR data, showing layering of risks and complexity of referrals that may not be evident in the data.

3.2 Analysis of Risk Referral Database

To complete analysis for this study, ARG staff transferred information from every inbound referral into a Microsoft Access database. The information transferred to the database included data from email correspondence, phone calls, referral notes and other documents. The Access database contains three main sections: primary information about the person being referred, the cause for the inbound referral, and the agency to which MFB referred the individual (outbound referral).
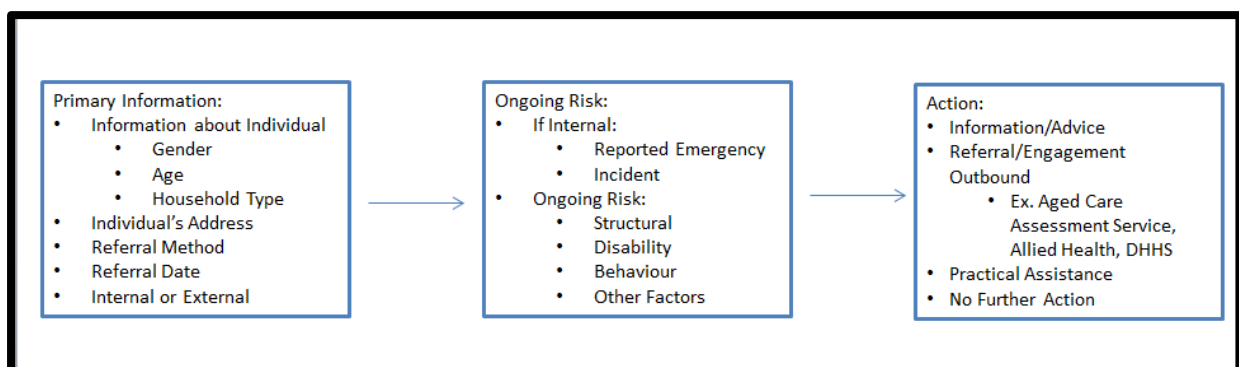

Figure 4: Concept Map of the Access Database Entry

The information about the referred individual includes location and demographic information. The section on the cause for the inbound referral has information about the submission of the referral, its origin (internal or external), date of submission, and the risk factors identified by the person submitting the referral. The section on outbound referral contains information about the agency to which the case was referred. The sections of the Access database can be viewed in Appendix C: RRR Access Database Screenshot.

The database was analysed to determine:

    a. The types of risks that are referred through the RRR process;

    b. The demographic features of people who experience increased risk;

    c. The percentage of referrals that had more than one risk identified;

    d. The increase in referrals over time;

    e. The percentages of referrals that are received from internal and external stakeholders;

    f. Whether correlations exist between internal referrals and engagement with operational firefighters;

    g. The external agencies to which risk issues are referred for follow up;

    h. The rate at which referrals are made to various external agencies.

Trends found within specific data sets were visually represented through bar graphs or pie charts.

Hoarding Notification System referrals were removed from components of the database analysis. The Hoarding Notification System (HNS) was established to increase firefighters and community safety. External agencies, family members, or the resident themselves can submit a Hoarding Property Notification Form to ARG. The Hoarding Property Notification Form only requires the address of the hoarding property. The form can be found in Appendix D: Sample HNS Form. The HNS form contains no personal information in regard to the at-risk individual. If the HNS form is submitted to ARG without further request for additional assistance, there is no engagement with the at-risk individual or the referrer. Therefore, no personal information, such as age or gender, about the at-risk individual is entered into the Access Database. The lack of personal information results in the statistical analysis being skewed to not accurately represent the referrals that ARG have facilitated. Therefore, inbound referrals consisting solely of a HNS form were extracted from the data when the analysis concerns the demographics of the at-risk individuals.

4.0 Case Studies

4.1 Diversity of Risk

This section examines six case studies that are representative of the range of risks referred to ARG by internal and external stakeholders. The case studies are examples of risk related to hoarding, squalor, age, disability and dementia that involve situations where a person has presented with a range of safety, health, and wellbeing issues. Each case study has six components: Occupant Profile, Department of Human and Health Services (DHHS) Region, Initial Engagement/Incident, Identified Risk, Action Taken and Analysis.

The case studies demonstrate:

— The wide variety of individuals referred to ARG;

— How risks can be identified in a variety of ways including emergency response or through community care assessment;

— The broad range of risks;

— The broad range of referral responses ARG uses to resolve the risk.

The final component of the case studies is the analysis where the significance of this section is discussed.

4.1.1 Case 1: Hoarding

Occupant Profile	The occupant was an elderly male resident who lived with his wife (for whom English is a second language). The couple had a teenage child. The family lived in an owner-occupied single level house that was fully detached.
DHHS Region	North East
Initial Engagement/ Incident	As a result of a recent diagnosis of dementia, the man was referred to the regional Aged Care Assessment Service (ACAS). An assessment worker visited the man but he declined an assessment and a referral to support services. While the worker was at the home, the man showed the caseworker through his house and rear yard. The caseworker had previously been to an ARG presentation on hoarding and identified a high level of risk so she contacted ARG to discuss her concerns
Identified Risks	The risks identified by the ACAS worker included: • Long grass in the front yard over a 1 metre high; • Hoarding inside the home was estimated to be at between 7 – 9 on the CIRS (Appendix E: Clutter Image Rating Scale (CIRS)); • Large containers and buckets of what appeared to be industrial chemicals in the kitchen (one next to the stove) and others near the laundry, backyard and carport which had clearly visible safety warnings; • An abnormally large number of gas cylinders in the back yard; and • A large workshop in the rear yard which appeared to have more chemicals.
Action Taken	• On the basis the person had refused services, ARG contacted the local council Local Laws which agreed to contact the occupant to arrange an inspection of the front and rear yards to quantify the risk and engage the person about the risks. • Council contacted the occupant and advised ARG that he reported he may also have explosives in the house. • ARG contacted Fire Investigation and Analysis (FIA) and the Arson and Explosives Squad who obtained a search warrant. • ARG sent an alert to MFB Operations regarding the property so that crews could perform a "drive by" for familiarisation prior to the warrant that could be executed. • Victoria Police, accompanied by an MFB Fire Investigator served the warrant. After a brief inspection, the situation was deemed an emergency incident requiring Hazmat. • Over a period of the next eight hours the street was closed off and 2000 litres of highly combustive fuels and chemicals (including two 44 gallon drums of aviation fuel in the front yard) were removed from the home. Police also removed over 20 firearms. This operation included MFB crews and Hazmat, Victoria Police, Local Council and workers from a business which specialises in chemical recovery.

Case 1: Analysis

The potential risks at this property were extremely high. In additional to the risk to the occupants, the property was several houses away from a neighbourhood playground. Without the referral from the community sector worker, it is unlikely that the risks would have been

identified. This case study demonstrates how effective interagency engagement can work to deliver an improved safety outcome. ARG works to ensure that agencies understand that at-risk individuals can be referred to MFB for information, advice and follow up. The resolution to this risk issue was complex and involved specialist expertise from a range of agencies. A community sector worker would be unlikely to encounter or work with these agencies during their usual delivery of services. MFB's role was to bring the relevant agencies together to ensure the risk was safely mitigated. One firefighter attending the incident reported that the wife of the occupant spoke to him privately to thank him as she had been unable to resolve the risks.

4.1.2 Case 2: False Alarm

Occupant Profile	The occupant was a single female living in a two bedroom apartment with two young children. The apartment was part of a large complex of apartments (over three levels) with car parking underneath. It was owned by a family member who did not reside at the same address.
DHHS Region	Bayside Peninsula
Initial Engagement/ Incident	The initial incident was for chemical smells reported by the occupant. No source or evidence of the chemicals smells was identified by responding firefighters.
Identified Risks	Over a period of six weeks MFB crews responded to an additional 9 callouts (including Hazmat) for the same complaint and no evidence could be found. Despite the occupant presenting reasonably well, the officer was concerned that the repeated false alarms may be reflective of a mental health issue given the number of calls and the lack of evidence. The officer's concerns were that if the issue was related to mental health, it may potentially place the parent and children at risk. Additionally, the ongoing false alarm responses to the address required follow up.
Action Taken	- ARG contacted the occupant by phone to follow up on the repeated calls. Based on the information provided by the occupant concerns for the occupant's safety were confirmed. - ARG contacted the local council and found that the occupant had also contacted them in relation to chemical smells which could not be identified by the council. The occupant had also provided the council with information, which was cause for concern, but they had not followed up with mental health services. - ARG contacted regional Adult Mental Health Services and was advised that they were monitoring the person's health and welfare. While they were aware of call to other emergency responders, they were not aware of MFB's involvement. The combined number of calls to emergency services was assessed as an indicator of the person's mental health. At the request of mental health, a referral was provided for them to immediately ensure the safety and wellbeing of the occupant and children.

Case 2: Analysis

Firefighters are not trained in mental health assessment; however this referral was based on a "common sense" approach. In this case, there were a number of responses to this address for which no source could be found. The firefighter was concerned for the occupant and the two children in the event that the behaviour was an indication of a mental health condition. It became clear after the referral was made that tmental health services were actively monitoring the person on the based on their own concern. This included observing the number of callouts by other emergency responders, despite being unaware of MFB's responses to the address. Within Victoria's emergency management framework, agencies do not routinely or systematically share information. In cases like this where the additional information provides a clearer picture of an individual's situation, it may make a critical difference to their health and the outcome of the situation for other people. In this situation, involving children, ensuring that a person who is the sole caregiver receives appropriate support, treatment or intervention is critical to the welfare of both the children and the individual.

4.1.3 Case 3: Squalor

Occupant Profile	Single female aged 65+ living alone in owner occupied apartment. The apartment was on the second level of an apartment building with three floors accessible by a shared internal staircase. At the time of the incident the occupant was in full time employment with direct client contact in legal services.
DHHS Region	Bayside Peninsula
Initial Engagement/ Incident	MFB Operations responded to a report of smoke from the apartment. The occupant was not home and crews used forced entry. No source of smoke or fire was identified.
Identified Risks	Inside the apartment, firefighters negotiated their way over at least one metre of glass bottles on all floor surfaces. In searching for a source of possible smoke, firefighters identified an extremely high level of squalor which included rotting food, and visible rat and pigeon infestation including rats entering the apartment through an open window. There was no access to the bathroom or toilet. A foul odour pervaded throughout the apartment and into other apartments including the one immediately below. Additional information provided by firefighters included that the odour was so noxious that firefighters were unable to enter without a breathing apparatus. The apartment below was occupied by an elderly female who showed firefighters the blackened bathroom ceiling directly under the floor of the bathroom above.
Action Taken	• The Senior Officer referred the occupant to ARG. • ARG referred to regional Aged Psychiatric Assessment and Treatment

	Team. Aged Psych engaged with Victoria Police to locate the occupant to undergo assessment.
	• The occupant was admitted to a hospital for assessment.
	• ARG contacted local council, Environmental Health, to recommend that they submit a hoarding notification until the apartment could be cleared.
	• A hoarding notification was placed on property by local council.

Case 3: Analysis

This case study demonstrates the risks and risk mitigation associated with squalor. Squalor is "an unsanitary living environment that has arisen from extreme or prolonged neglect and poses substantial health and safety risks to people living in the affected premises and their neighbours (including discarded rubbish, food scraps, rotting food, animal and human faeces)" (*Victorian Department of Health and Human, 2013*). Squalor can exist in isolation or co-exist with hoarding. In older people, squalor (with or without hoarding) is now linked to loss of capacity in relation to frontal lobe function and the loss of skills in relation to risk assessment, management and planning (Dow, 2016). These are critical functions in terms of prevention, preparedness and response of the occupant in relation to fire and other safety issues. This home was a health risk to the person living there as well as the neighbours and the firefighters who responded.

In this case study, the firefighters identified the risk and completed a referral in order to mitigate the risk. The physical state of the home can be a strong indicator of risk. For this particular household, the floors were covered in glass bottles, posing an immediate danger to the individual and to the firefighters. Unlike hoarding, squalor in older people requires specialist assessment services to establish if the individual can continue to live independently in the community.

4.1.4 Case 4: Dementia

Occupant Profile	The occupant was approximately 80 years old, female and living alone in single story house that was fully detached.
DHHS Region	Western Melbourne
Initial Engagement/ Incident	MFB firefighters responded to a fire around the occupant's bed caused by an electric blanket
Identified Risks	Through the process of establishing a cause of the fire, the occupant advised firefighters that she had seen an electrical cable coming from the cupboard near the bed. Unsure of what this was, she got a BBQ mate (like a large egg flip with a

	cutting edge) and began to hit the cord which then ignited. The occupant also advised that she had experienced a previous electric blanket fire twelve months prior but she was unable to recall the details. She did tell the firefighters that she left the electric blanket on for extended periods of time. Firefighters were concerned that the occupant may have memory loss and/or confusion which resulted in the high risk behaviour which caused the fire.
Action Taken	• ARG contacted local council, Aged and Disability, to identify whether they had any previous contact with the occupant. Council advised that the person had been a client four years prior and, because of this, would accept a referral from MFB without consent for follow up. • Council conducted a follow up visit within 48 hours. On the basis of the memory issues identified during the visit, weekend monitoring assistance was put in place by the council. • Council liaised with family who were unaware of the incident and organised an aged care assessment with the family's consent via the regional Aged Care Assessment Service (ACAS). The role of ACAS was to assess if the person was able to live safely at home and what support would be necessary.

Case 4: Analysis

Dementia is currently the single largest cause of disability in people aged over 65 (Australian Institute of Health and Welfare, 2012). It is the second largest cause of death in older Australians, and with the ageing population this trend will continue to grow to unprecedented levels (Australian Institute of Health and Welfare, 2012). In addition, older people, including those with dementia, will increasingly be cared for in a community care model in their own homes. Increasing firefighters' awareness of this issue and the different ways in which dementia affected people can present themselves will help to ensure that they are appropriately supported to minimise their risk. Individuals can be identified by emergency response, and through the MFB's partnership with various programs and agencies, and can lead to affected people being appropriately assessed and supported.

This case study is reflective of the kinds of incidents firefighters respond to that involve older people who experience memory loss. In many instances the occupant is already known to the assessment or service agencies. For affected people who are current clients, informing the provider agency of the issue provides an opportunity to re-evaluate, assess and take action in relation to the risks. In this specific situation, the occupant required a specialist assessment to identify her level of cognitive capacity. For people who are not known to services and are challenged by memory issues, the advocacy of the responding firefighters may often be the only opportunity to connect them to services for assessment and support.

4.1.5 Case 5: Home Family Day Care Services

Occupant Profile	The occupant was a female aged approximately 45 years old living in a semi-two level detached home. It was unknown who else lives at the property. The occupant was from Sudan and could not communicate in English.
DHHS Region	Western Melbourne
Initial Engagement/ Incident	MFB firefighters responded to a fire that started in the kitchen. The occupant attempted to extinguish the fire and had sustained burns to her hands. Firefighters also identified a group of children all under school aged in the care of the occupant. Smoke alarms were present in the home but they were not working.
Identified Risks	A friend of the occupant arrived after the fire was extinguished and firefighters were able to establish that the person runs a family day care program from the home. Their concerns were that the smoke alarms were not functional and that when the fire started the person attempted to extinguish the fire rather than evacuate herself and the small children in her care.
Action Taken	• ARG contacted the regional Department of Education and Early Childhood Development who fund family day care services and set the policy framework. This policy framework establishes how the services are to be delivered including the provision of smoke alarms and what action to take in the event of a fire or other emergency. The worker advised that an increasing number of people from CALD communities provide child care services funded by the program. Generally, these children's parents are working full time within the same community. The worker was able to confirm that the policy and practice framework was inclusive of smoke alarms and fire procedures. • As a result of ARG reporting the incident the worker advised they would review the training needs of the person and scope engaging with all providers to remind them of fire safety policy and procedures and assess the training needs of providers.

Case 5: Analysis

This case study demonstrates that an inbound referral can result in not only risk mitigation action for a single incident but also potentially deliver a broader outcome. To mitigate this risk, the government department that funds the service state-wide and manages the programs policies needed to be engaged. ARG engagement with the government department ensured that the department was not only aware of the incident but also of the potential knowledge and practice gaps of other service providers of the program. Alerts to providers, refresher and skills maintenance training, and more frequent inspections are treatments that the department could implement. Refresher and skills maintenance training will ensure the program and its providers can continue to deliver safe Family Day Care Services. The unsafe practices of the Family Day Care Service where the incident occurred may have gone unreported without the initiative of the firefighters who attended the incident to make a referral. While many

firefighters are aware of issues like hoarding and squalor, identifying other on-going risks such as the one in this situation may be more difficult. Despite this, the engagement of firefighters at the incident and the collection and referral of information maximised the potential for an improved outcome.

It is also important to highlight that this case study involved an individual who is part of the CALD community. The language barrier between the individual and the firefighters caused communication to be challenging. This communication was important for firefighters to educate the individual about the risks posed by her behaviour or to ask for details in regard to the children and occupant's health and wellbeing. If the fire had escalated, and the individual and children were trapped within the house, the language barriers could have impeded the safe evacuation of both the occupants and firefighters.

4.1.6 Case 6: Disability

Occupant Profile	The occupant was a female aged approximately 50 living in an owner occupied unit with her mother and two cats. The unit was part of a cluster development. The occupant was deaf and communicated primarily through Auslan and texting. She experienced a high level of social isolation, worked part time, was on a disability pension and was the primary care provider for her mother who had dementia.
DHHS Region	Western Melbourne
Initial Engagement/Incident	MFB responded to a fire at the unit (the occupant was not home) which caused considerable damage resulting in the occupants being unable to occupy the home while repairs were made. As a result, the Senior Officer contacted Victoria Police to coordinate welfare and housing for the occupants.
Identified Risks	After the incident, the Senior Officer was contacted by Centrelink to verify that there had been a fire as the occupant had applied for a hardship grant. The worker was unable to contact the occupant. The Senior Officer was concerned that the system had broken down in relation to his referral for the welfare of the occupants. ARG identified that the occupant had temporarily relocated her mother (some distance away) but that she was still living in the badly damaged apartment with the cats and had received no assistance. Remaining at the damaged apartment was identified as a risk to the occupant's health and safety. There was additional risk of another fire resulting from ad hoc arrangements for heating, cooking and lighting.
Action Taken	• ARG attempted to contact the Victoria Police member to whom the referral had been made for assistance but was unsuccessful. • ARG contacted the occupant by text who advised ARG that she was: — Staying at the unit with the cats as she couldn't afford to go anywhere else and it was close to her part time job which she needed to keep. — The occupant had been unable to receive the messages to her

	mobile as these were voice calls not texts.
	• With consent of the occupant ARG contacted Vic Deaf to request the urgent allocation of a temporary case manager who could appropriately advocate on the occupant's behalf.
	• ARG contacted the insurance company to advise them to use text to communicate with the occupant due to her disability. ARG also further requested urgent assistance for accommodation and follow up. The insurance company provided assistance and the occupant was accommodated in a serviced apartment with her cats close to work at the expense of the insurance company.
	• ARG provided information to the occupant about smoke alarms for Deaf and hard of hearing for when the client returned to her home.

Case 6: Analysis:

This case highlights the difficulties faced by people with disabilities when trying to access and receive information and assistance after an emergency. In this situation, the system broke down. The occupant remained living in the badly damaged apartment, which was a risk to her health and safety. Ad hoc arrangements for heating, lighting and cooking would also place nearby residents at risk. Most importantly, any information being provided from external agencies to the person was inaccessible because it was not inclusive of her communication needs. The occupant greatly appreciated the firefighter's efforts in ensuring the occupant's safety. This case study illustrates that there can be gaps in the assistance that is provided to at-risk individuals if their needs are not understood. The advocacy of the firefighter, by following up the contact from Centrelink, ensured the person was eventually linked to the most appropriate agency to provide assistance.

4.1.7 Analysis of Diversity of Risk

It can be seen through these case studies that a broad range of risks that can endanger individuals, their families and the community are reported to ARG. The wide range of risks demonstrates that a single solution is not appropriate to address the variety and complexity of people and their individual situations. The RRR process addresses the need of the individual on a case-by-case basis, most often by connecting him or her to a an agency that can provide support. By providing this assistance, the risk posed by the individual is mitigated and the safety of the community and firefighters is increased.

There are a broad range of risks assessed when determining if a referral may be appropriate for an individual. Hoarding and squalor are most often referred due to the obvious signs of risks, but other risks such as lack of capacity may require a higher level of observational skill.

These case studies also demonstrate the affected individuals often have more than one identified risk, and that each risk is complex within itself. As discussed in the examples above, there is an intricate layering to these risks that requires additional care to be provided. However, the available community care programs can only provide as much assistance as the individual is willing to receive. Therefore, it is important to understand that the broad range of risks, and the complexity of each risk, presents a complicated situation that is challenging to resolve. This resolution can be achieved through the identification of these various specific risks, and referral to agencies that have the skills and knowledge to assist the individual.

These six case studies exemplify that risk is not one dimensional. The risks and the individual's circumstances create a multi-dimensional situation that becomes difficult to resolve. In order to maximise the potential of resolving these risks, it is necessary to address the individual needs of the occupant. Once the individual's situation is understood, external agencies can provide the necessary assistance to mitigate the risks which may include multiple agency engagement.

4.2 Multiple Incidents and Referrals

The RRR data base contains many properties at which there have been multiple emergency incidents or where there have been multiple referrals. Due to the current data management system, it was not possible to provide an analysis of all residential properties at which there had been multiple incidents/referrals. Instead, the following case studies provide examples of residential properties for which there have been a combination of referrals and/or incidents.

Hoarding is the common risk in all three cases and risk mitigation process for all three cases have continued over the course of several years. These cases exemplify that a single risk, such as hoarding, can result in a prolonged resolution process. Similar to the case studies in Section 4.1 Diversity of Risk, these multiple incident cases are not restricted to one population or location. Every resolution is different, and in some cases, the risk mitigation process is on-going.

In the following three examples, hoarding is the common feature. Hoarding is reported more often, by both internal and external stakeholders, than any other single risk issue. These cases also demonstrate that fire is only one hazard experienced by people affected by hoarding. Without an integrated interagency approach, this risk will continue to pose hazards. For hoarding, this is significant because unlike some other types of risk referral, such as dementia, there is no clear referral pathway that can address the diversity of affected people.

While knowledge, policy, and practice in relation to hoarding is not consistent across all government funded services, the examples below, arranged in chronological sequence, will show increases in organisations' response capacity. The development of the Victorian State Government's *Hoarding and Squalor; Practical Advice for Service Providers* has contributed to an increase in capacity and knowledge. This document outlines the actions which can be undertaken by programs and agencies within the framework of their service delivery responsibilities. MFB's improved organisational capacity has been achieved through establishing policy and practice protocols, a referral pathway, increased engagement between Operations and Community Resilience, as well as the development and roll out of the Hoarding Notification System.

4.2.1 Case 7: Hoarding, Inner East

Case Profile	
Age	Approximately 87+ and 50 +
Gender	Both occupants are female
Disability	Older female has age related mobility issues and possible cognitive issues
Household	Mother and daughter
Property Type	Detached house and since 2015 occupants are living in a caravan in the driveway as the house cannot be accessed
Risk Issue	Hoarding
DHHS Region	Inner East
History	**2009** ARG received a referral from a firefighter who has inspected the outside of the property for an enhanced response due to hoarding. The hoarding is evident from the street. The officer is concerned that one occupant is reported to be elderly and the officer has been unable to make contact. ARG contacted the local council, Aged and Disability department, who advised that they have had no contact with either occupant. Local council also advised that the hoarding issue was being managed by local council's Environmental Health department so the Aged and Disability department would not make contact with the occupants. ARG contacted the Environmental Health department and the worker advised that the matter was being taken to Magistrate's Court and will make no additional referrals for assessment or support despite the recommendation to do so. **2012** Victoria Police visited the property to conduct a welfare check and reported the living conditions of the occupants to local council. ARG was contacted by a worker from local council, Aged and Disability and asked to participate in an interagency meeting. This meeting involved Victoria Police and local council Aged and Disability, Local Laws and Environmental Health departments to discuss how to address the issue. ARG recommended that both occupants be referred for assessment by specialist agencies. ARG offered to assist in drafting the referrals. The local council used the leverage of local and environmental health laws to engage the younger occupant. MFB also provided evidence-based risk reduction advice to local council. **2016** ARG was contacted by a worker from council Local Laws department seeking information regarding any previous MFB involvement at the property. The worker advised that both occupants are now living in a caravan in the driveway as the house can no longer be accessed. Local council's Aged and Disability department were no

	longer involved. ARG provided a history of previous engagement with council over the property. ARG recommended that the Aged and Disability department be re-engaged to assist in referral and assessment to specialist agencies. ARG also recommended that the property is referred to the MFB Hoarding Notification System, which was not available in 2012.
	Referral to the Hoarding Notification System was received from council.

4.2.2 Case 8: Hoarding, North East

Case Profile	
Age	Approximately 70, 75, and 21
Gender	Two elderly females and one male
Disability	Two elderly female occupants have a range of aged related disabilities including reduced vision, limited mobility, and heart conditions
Household	Two elderly sisters living with the adult grandson of one of the sisters
Property Type	Owner occupied single level brick home with caravan in the driveway which is occupied by the grandson
Risk Issue	Hoarding and squalor
DHHS Region	North East
History	**2006** MFB responded to a fire resulting from unattended cooking. An elderly female was transported to hospital with smoke inhalation. Firefighters identify that most parts of the home are affected by a high level of hoarding and poor housekeeping. MFB understands that local council were engaged with the occupant after the fire to remove the accumulated items. **2008** MFB responded to another fire at the property. The cause was identified as unattended cooking resulting from the build-up of grease around the griller which had been left on. Fire then spread quickly to combustibles near the stove and into the roof cavity. ARG was advised that due to the damage sustained in the fire, the property could no longer be occupied and would most likely be demolished. Photos from the fire scene clearly identified that the hoarding was between 7-9 on the Clutter Image Rating Scale (Appendix E: Clutter Image Rating Scale (CIRS)). **2015** MFB Operations respond to another incident at the property resulting from unattended cooking. Firefighters refer to ARG to advise that the house has a high fuel load at the highest level on the Clutter Image Rating Scale. The property appears to also be occupied by another elderly female, who is reported to be the owner's sister. ARG contacts the female owner who advised that her elderly sister is now living with her after having knee surgery. The sister was unable to return to her own home

	(situated close by) due to the level of hoarding in her house. ARG recieved consent to refer both elderly females for assessment by Aged Care Assessment Services. ARG makes a referral to Aged Care Assessment Services with the Hoarding Notification Pack. Aged Care Assessment Services contact ARG to advise that the sisters have refused any support or services and submits a hoarding notification.

4.2.3 Case 9: Hoarding, Bayside Peninsula

Case Profile	
Age	Approximately 55+
Gender	Male
Disability	None
Household	Single person
Property Type	Two adjacent apartments on top floor of a three level apartment complex
Risk Issue	Hoarding
DHHS Region	Bayside Peninsula
History	**2013** MFB Operations respond to the property at the request of Victoria Police to remove broken glass from one of the windows. The majority of the glass had been pushed out of the frame by the weight of materials hoarded in the apartment. The hoarding was rated to be 8-9 on CIRS (Appendix E: Clutter Image Rating Scale (CIRS)). ARG receives a complaint from a resident regarding the fire risk clearly evident in a picture of the building taken at street level, showing accumulated items stacked up at the windows. ARG contacts the local council, Local Laws and Environmental Health departments for follow up and investigation. Council advises that they are unable to take action as the hoarding is confined to inside the apartments and no laws can be applied. Local council also attempt to make contact with the occupant via another department but are unsuccessful. ARG is contacted by the Body Corporate on behalf of the other owners concerned about their fire risk. ARG provides a supporting document on the risk of hoarding and fire to the Body Corporate. The Body Corporate plans to take action through the Victorian Civil Administrative Tribunal (VCAT) Civil List. ARG supplies the Body Corporate with the Hoarding Notification Pack and a notification is received and added to the system. MFB Operations also adds an additional appliance to the property based on the risk to the occupant, neighbours and responding firefighters.

<table>
<tr><td></td><td>

2014
ARG is contacted by the Body Corporate who has an order issued by VCAT to inspect the apartments to assess the level of risk after successful action at VCAT.

ARG and District Community Resilience conduct an inspection and assess the level of hoarding in both apartments at between 8 and 9 on CIRS. Copies are supplied to the occupant, Body Corporate and VCAT.

ARG negotiate with the owner for permission to supply and install smoke alarms in both apartments to provide early warning of a fire.

MFB install smoke alarms in both apartments which also provides an opportunity for crews to assess the risks and challenges to them in the event of a fire.

2015
The Body Corporate contacts ARG to advise that as a result of the action taken at VCAT approximately 14 tons of accumulated items have been removed but an estimated 7 tons remained and the process had stalled. This is due to the financial stress of the occupant in relation to the costs of legal representation and removal of the accumulated items.

The Hoarding Notification is renewed.

ARG contacts the local government Fire Prevention Officer to seek a funding commitment from council to assist in the removal of the remaining items and reduce the fuel load.
</td></tr>
</table>

4.2.4 Analysis of Multiple Incidents and Referrals

These case studies are counted as three individual cases, yet they represent nine incident/referrals in total. Their importance cannot be underestimated because they clearly demonstrate the on-going nature of risk and the challenges involved in effectively addressing this risk. The case studies also provide insight into the importance of agencies working together to achieve sustainable safety outcomes for individuals and the community. This is particularly significant in relation to an issue such as hoarding since research has identified that fires in affected homes are more likely to occur, and are less likely to be contained to the room of origin. In some types of housing such as apartments, semi-detached homes and inner metro areas where homes are closer together there is an increased potential for fire to spread to neighbouring residences (Smith, 1994).

These examples show the complications that one risk can present. They also highlight that the success of a resolution isn't guaranteed by a referral. There can be obstacles that impede the progress of the individual due to factors such as lack of communication and cooperation. The occupant can be willing to accept help, but may fail to qualify for on-going support and services through government funded programs. Resolution of a risk, like

hoarding, is also dependent on the agencies that can be engaged. For example, if hoarding is contained within a residence and does not result in a health issue (as identified in Case Study 3), neither local laws nor environmental health departments of local council can act. In 4.1.3 Case 3: Squalor, the occupant was ineligible to be assessed for or receive government funded services. This significantly impacted the actions which could be taken to address the risk.

MFB is required under the MFB Act (1958) to respond to emergencies and actively prevent them. These case studies demonstrate that prevention activities directed toward risk may require multiple attempts and the need to engage a broad range of stakeholders. Even then, these attempts are not always successful.

5.0 Results and Analysis

This chapter presents the major findings of this study based on analysis of the RRR data. The results from the analyses, and the probable reason for these results, are discussed.

The team decided to exclude the HNS information for analysis that involved demographic data because the HNS form does not include demographic data. As a result, a majority of the analysis was completed without HNS information.

5.1 Occupant Profile

For this section, data were analysed to provide an occupant profile of individuals referred via the RRR process. This profile includes identification by age, gender, disability, property type and tenure. Historically, ARG exchanged information during the referral process via telephone and, as a result, not all information about referrals was recorded. Written follow up may have also excluded personal information and provided only the address to protect the privacy and confidentiality of the referred individual. As referrals have increased over the last nine years, practice has developed to include the recording and maintenance of all available information. Another contributing factor is how the risk was identified and who identified it. For example, due to the increased community awareness of hoarding, an inbound referral may have resulted from the risk being observed at street level rather than as a result of contact with the affected person. This includes referrals from people living near a property with hoarding, and firefighters who may observe hoarding while undertaking other tasks in the community. In cases such as these, no personal information is recorded. While this study will identify improvements for consistent collection of demographic detail for internal referrals, there are specific circumstances where firefighters are unable to provide personal information. These relate to EMR incidents which are subject to confidentiality and privacy arrangements related to personal health information. It is also not part of standard practice for firefighters to identify the age of the occupants during incidents in residential settings.

5.1.1 Age

Treatment of Data: The size of the age data set includes 673 referrals as seen in Figure 5. There is no age category on the HNS form, therefore, and is not included in this analysis. Fifty-four percent (n=366) of the data collected did not include age within the occupant profile. These unknowns may be attributed to a variety of factors relating to how the referral

was submitted to ARG. Unknown data are not included in this analysis of age. The categories considered in this data set were age ranges from under 18 to 80+ years of age.
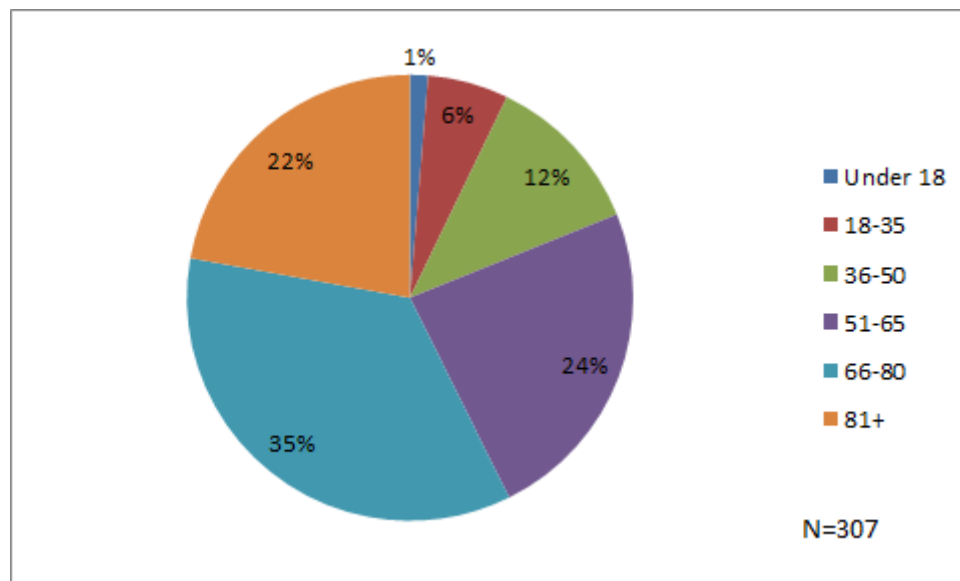

Figure 5: Percentage of Inbound Referrals by Age Range

Data Analysis:

Older people are overrepresented in Residential Risk Referrals.

As Figure 5 shows, 57% (n=176) of referred individuals are aged 65 years or over. This result is consistent with previous research done by WPI and MFB, and with data in the Fire Investigation and Analysis database. This research identified that people aged 65 years and over, are at greater risk of fire related injury or death (Aufiero et al, 2011). From 2000 to 2011, 50% of preventable residential fire fatalities involved people aged 65 years and older (Aufiero et al, 2011). Individuals aged 81 years and over represent 22% (n=68) of referrals where age is known. This is already a significant portion of referrals, and this population group is predicted to quadruple by 2061 according to Australian Bureau of Statistics population projections (Australian Bureau of Statistics, 2013). This highlights that in the future, MFB is likely to be responding to an increasing number of incidents that involve elderly people (MFESB, 2015). While fire risk is prevalent in this age group, fire is not the only risk on which this study is focused. As seen in four of the six case studies (see Section 4.0), age predisposes individuals to a variety of risks.

The rate of the inbound referrals with unknown age has remained steady since the inception of the RRR process.

From 2007 to 2015, the percentage of referrals with age unknown has remained steady around 60% (Appendix F: Occupant Profile). To further investigate the referrals with unknown ages, we checked for what actions were taken for each referral. Of the referrals with unknown age, 9.3% (n=34) were referred to services that only accept individuals over the age of 65 years. This demonstrates that some missing information may have been known but not recorded.

Children under the age of 18 years are underrepresented in these data.

Children have an increased risk of a fire injury or fatality (Australasian Fire and Emergency Service Authorities Council, 2009). However, this study found that children under the age of 18 were identified in only 1% of inbound referrals. This may be related to the provision of internal and external services for children. The parent or guardian may be the best point of contact for agencies to work with to address risk. In Victoria, DHHS Child Protection Services deliver a comprehensive response to children at risk and work holistically with families to address a broad range of risks. MFB Community Resilience Juvenile Fire Awareness Program also accepts referrals directly and provides an intervention program to reduce fire play by children and young people. Referrals for this program are accepted by internal and external stakeholders including sector workers, parents, teachers, and firefighters. In situations where children are referred in an inbound referral both of these programs have been engaged by ARG to address the risks of children. As demonstrated in 4.1.2 Case 2: False Alarm, the two children were potentially at risk due to the mental health of their mother. In making an outbound referral in this case, MFB sought to ensure that the appropriate agency was engaged which had child protection notification requirements as a part of its practice, and could address their risk through the provision of support and services to the mother. This is representative of ARG practice in other cases involving children where their risk is addressed through engaging the parent.

Summary of Key Points:

- Older people are overrepresented in Residential Risk Referrals. Fifty seven% (n=176) of referred individuals are aged 65 years or over.
- People aged 81 years and over, represent 22% (n=68) of the referred individuals. The number of older people aged 80+ is projected to increase significantly in the future.
- These findings are consistent with research in Australia and overseas which identifies older people as being at higher fire risk.

- These findings support the MFB Plan 205-18 (MFESB, 2015) analysis that an ageing population is a growing risk.

- Children under the age of 18 years are underrepresented in Residential Risk Referrals.

- Addressing the risks to children identified in RRR's is usually achieved through supporting the parent and/or engaging services with responsibilities in relation to child protection.

5.1.2 Disability

Treatment of Data: For inbound referrals, multiple disabilities may be recorded for one individual. The disability data are not isolated to people who were born with or acquired a disability before the age of 65, it includes age related disability. For internal referrals that identify disability, the identification of disability is based on the observations of the firefighters rather than a more formal approach to identifying disability which would be utilised by community care agencies. The size of the disability data set includes 333 individual referrals. All referrals to the HNS, which did not involve any other contact with the affected person or their advocate, were removed from this analysis because the form does not require the identification of disability. Physical disabilities include reduced mobility, chronic illness, sensory loss such as Deaf or hard of hearing, blind or low vision and intellectual disability. Disability is inclusive of individuals with long term mental health issues that may include being affected by medication, alcohol or other drugs.

Data Analysis:

Disability was identified as a risk factor in approximately half of the referrals.

In 49% (n=333) of inbound referrals, disability was identified as a risk factor (Appendix F: Occupant Profile). This finding concurs with previous WPI/MFB studies, that disability increases risk of fire and other emergencies. The 2011 WPI/MFB studyfound that people with a disability were 4.2 times more likely to be a fire fatality than the general public (Aufiero et al, 2011).

Physical disabilities are the most commonly referred disability type.

Physical disabilities (n=173) are identified more often than disability related to long term mental health issues (n= 68) (see Appendix F: Occupant Profile). However, while physical disability was reported more often, mental health related disability still represents a significant portion of the inbound referrals. There are 92 inbound referrals with overlap,

where both mental health related disability and physical disability were included on the inbound referral.

Summary of Key Findings:

- Disability is identified in approximately half of the referrals.
- Physical disabilities were more commonly identified, but mental health related disability still represents a significant portion of the disabilities identified.
- Multiple disabilities are commonly identified in inbound referrals.

5.1.3 Gender

Treatment of Data: Gender data includes 673 referrals. There is no gender category on the HNS; therefore, it is not included. Gender was unknown in 33% (n=225) of the referrals. These unknowns may be attributed to a variety of factors relating to how the referral was submitted to ARG.

Data Analysis:

Referrals reflect an even distribution of gender.

Out of referrals that identify gender, males account for 51% (n=226) and females represent 49% (n =222) (Appendix F: Occupant Profile). This equal representation implies that gender is not a risk factor in terms of the types of risks identified through the RRR process.

Summary of Key Findings:

- There is no evidence of a link between gender and risks identified in inbound referrals.

5.1.4 Occupancy

Treatment of Data: The size for the occupancy profile is 220 referrals. There is no occupancy category on the HNS form; therefore it is not included in this analysis. The categories analysed include single, couple, family, single parent with children, parents with adult children, housemates, and other. The "other" category represents five inbound referrals that reflect unusual occupancies.
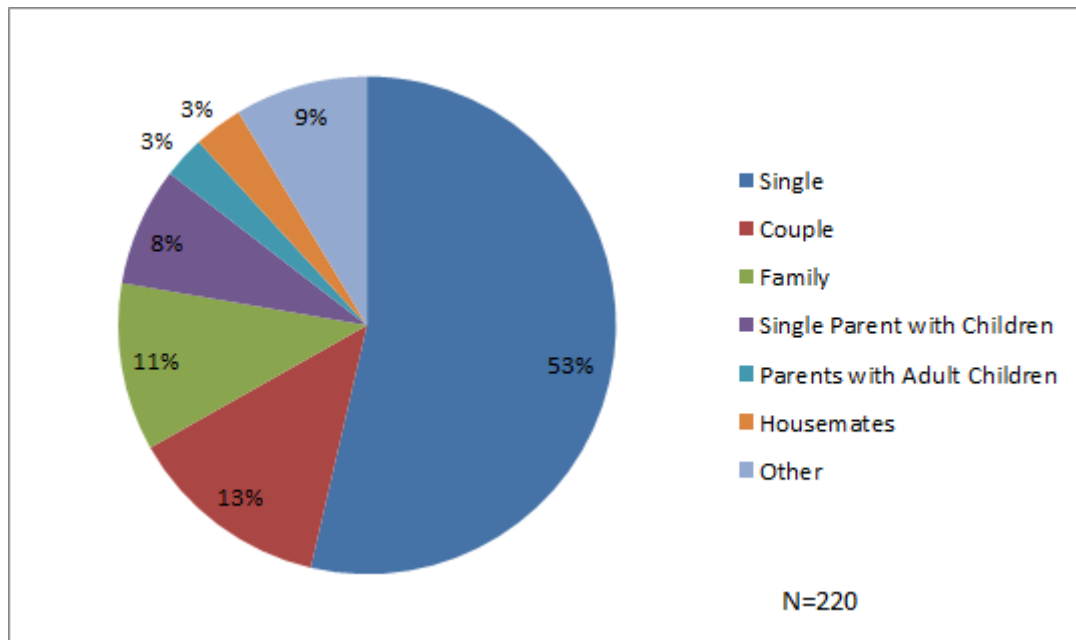
Figure 6: Percentage of Inbound Referrals with Identified Housing Profile

Data Analysis:

Inbound referrals identify single households as the most common occupancy profile (53%, n=118).

The high representation of single person households is consistent with findings from previous WPI/MFB research (Aufiero et al, 2011). That study found that 63% (n=36) of fire fatality victims lived alone. In this report, as seen in Case Studies 3 and 4, living alone is commonly identified as a risk factor by internal and external stakeholders. The number of people living alone is steadily increasing, and is predicted to increase by 65% in Australia in the next 25 years (Hele, 2015). The composition of a household may also identify what action needs to be taken and which agencies need to be engaged when a referral is received by MFB. For example, households where children are at risk may require the engagement of agencies with statutory reporting requirements for children at risk. The intersection of these trends strongly supports the need to identify risk cohorts and develop strategies to mitigate risk.

Summary of Key Findings:

- Living alone is the most identified occupancy profile in referrals. Case Studies 3 and 4 illustrate this risk profile.
- This is consistent with findings in previous WPI/MFB research from 2011 which found that the majority (63%) of fire fatality victims lived alone.

- Single households represent a growing risk in the community due to the increase in number of single person households.
- In households with children, specialist agencies are involved during the outbound referral process.

5.1.5 Property Type

<u>Treatment of Data:</u> The size of the property type data is 605 referrals as seen in Figure 7. There is no property type information on the HNS form; therefore it is not included in this analysis. Twenty five percent (n=197) of referrals did not have information regarding property type; these were excluded from the analysis. Historically, it has not been an established practice to record this kind of information, which led to a large number of unknowns. Also, on the internal inbound referral form, there is no checkbox or textbox to refer property type. The property type is either filled in later by ARG or inferred based on email correspondence as the property type may assist in identifying the tenure (i.e. social housing tenants). Property type categories are house, unit, apartment/flat, bungalow, and other. The "other" category encompasses two properties; a bookstore and a factory. These properties were non-ordinary places of residence or suspected to be places of residence.
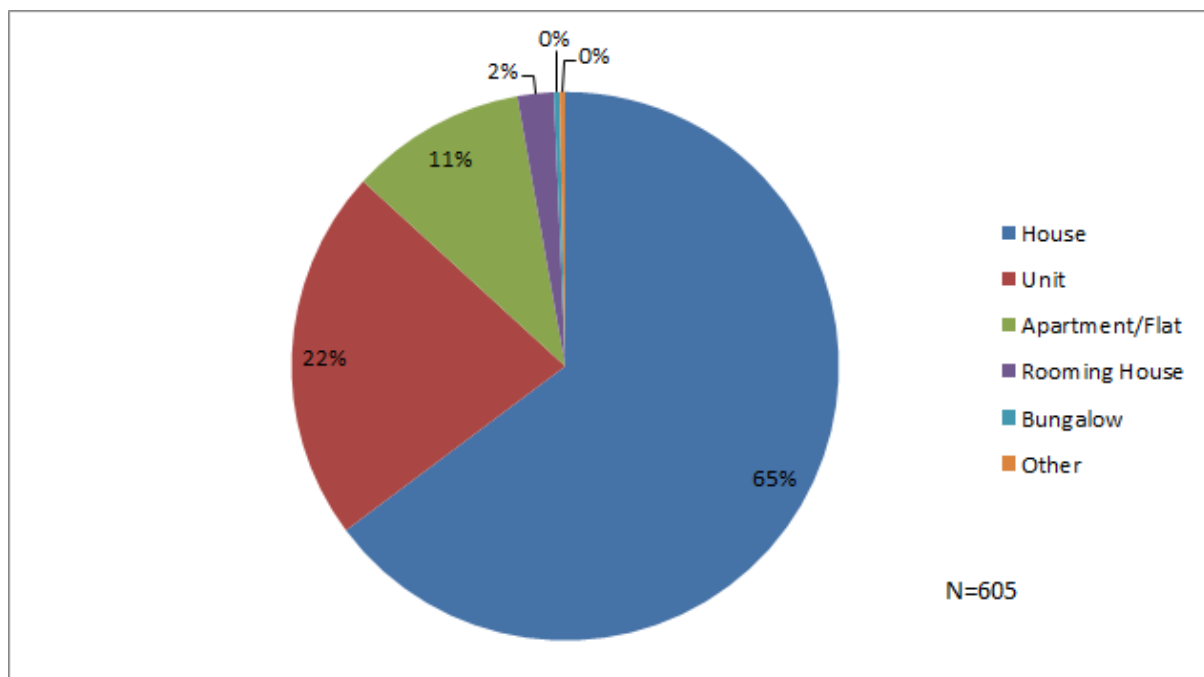
Figure 7: Percentage of Inbound Referrals with Property Type

<u>Data Analysis:</u>

The most common property type identified in inbound referrals is "houses" (65%, n=392).

Based on Australian Census information, about 77% of residents in Victoria live in a house, which is reflected in the high percentage of houses in the referrals (Australasian Bureau of Statistics, 2011). It can be inferred from these data that no particular property type is predisposed to risk.

Summary of Key Findings:

- Houses were the most frequently identified property type in referrals (65%, n=392).

5.1.6 Property Tenure

Treatment of Data: The size of the tenure data set is 374 referrals as seen in Figure 8. There is no tenure information on the HNS form, therefore is not included in this analysis. Fifty-nine percent (n=428) of the referrals did not identify tenure. This large percentage of unknowns can be attributed to restricted contact with the resident in cases such as drive by inspections related to hoarding, by both external and internal stakeholders. Categories of tenure included in this analysis are owner occupied, public housing, community housing, private rental, residential care, and other.
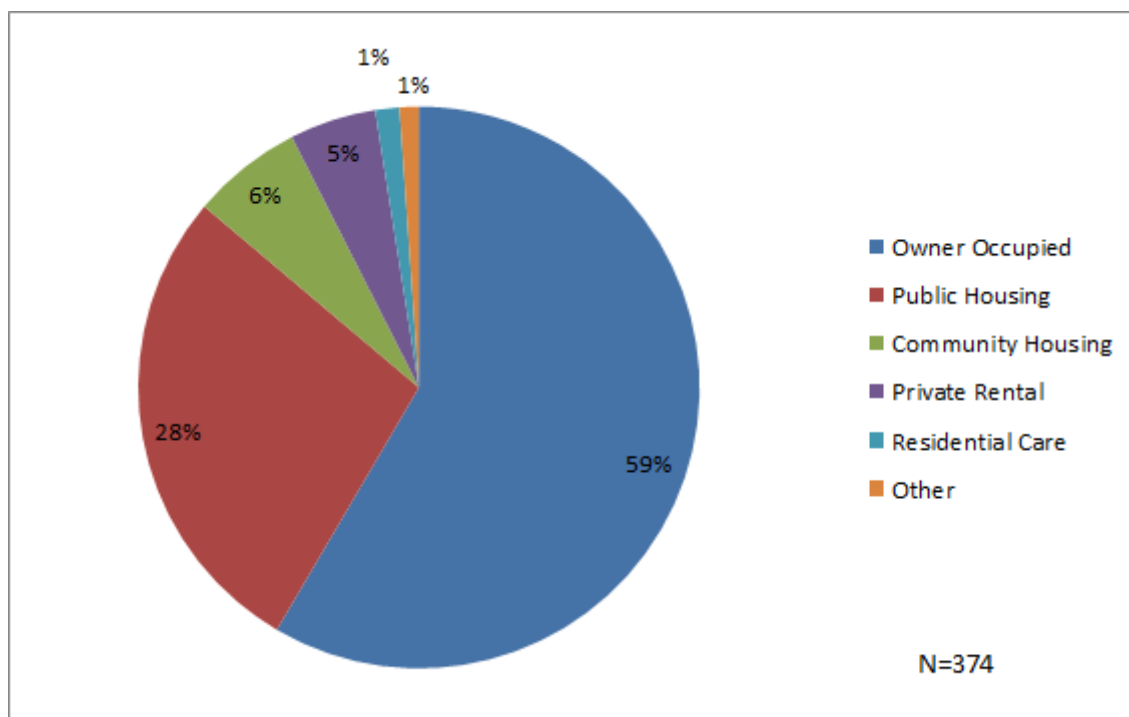
Figure 8: Number of Inbound Referrals with Identified Tenure

Data Analysis:

Owner occupied is the most commonly referred tenure type.

These data demonstrate that risk occurs regardless of the property tenure**.** Inbound referrals from all sources commonly include the tenure of the residence. This information is important because the tenure of the property informs what actions may be taken to address the risk through the engagement of specific stakeholders. In situations such as risk linked to hoarding, property tenure where the property is not owner occupied, provides leverage through which the affected person can be engaged. While ARG utilises the landlord/tenant relationship in a social housing context, this is not a practice adopted when the tenancy is a private rental. This is because private rental tenants are not provided the same access to tenancy related support to assist them to address the risk as outlined in the following section on Public Housing. In situations of private tenancy the approach of ARG is to make referrals similar to those of properties which are owner occupied. In a small number of inbound referrals the Body Corporate (which manages a residence) that contacts ARG. In these situations ARG provides information, advice and recommendations. ARG may support the action being undertaken by the Body Corporate, but may also advocate on behalf of the tenant as identified in Case Study 9.

Tenants of public housing are overrepresented.

Public housing tenants account for 28% (n=100) of all referrals. In Victoria, this same group accounts for 3.2% of the population (Tenants Union of Victoria, 2014). This overrepresentation may indicate a link between disadvantage and risk. Historically, DHHS Housing has gone above and beyond in their role as a landlord, and is very proactive in working to mitigate risk within their properties.

Summary of Key Findings:
- Referrals most often identify owner occupied residences.
- ARG does not report risks identified through internal referrals to a private landlord but makes referrals to other agencies.
- Referrals from Public Housing properties are overrepresented compared to the Victorian population. This may reflect both the proactive approach of DHHS Housing as well as a link between disadvantage and risk.

5.1.6.1 Public Housing

<u>Treatment of Data:</u> The size of the public housing data set is 118 referrals as seen in Figure 9.
There is no public housing category on the HNS; therefore, it is not included. The categories
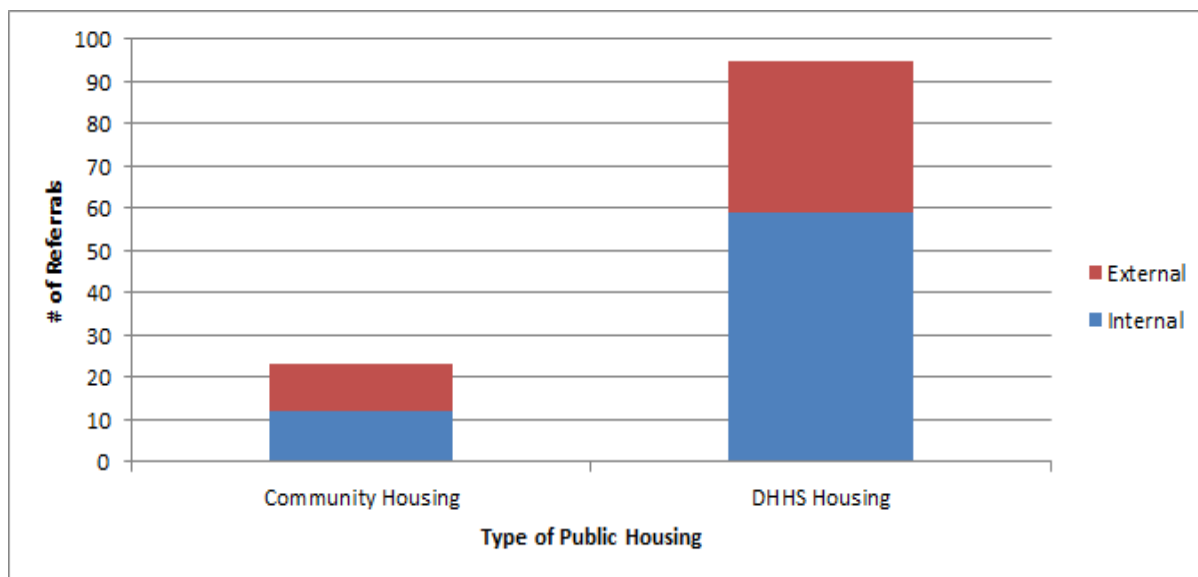analysed include community housing and DHHS housing.

Figure 9: Internal and External Referrals for Public Housing

<u>Data Analysis:</u>

The majority of referrals for public housing were internal.

MFB firefighters are proactive in reporting incidents in DHHS Housing for a range of
reasons. It has been a long standing arrangement that MFB firefighters report fire incidents in
DHHS Housing at the time of the incident to ensure DHHS is able to respond. As the RRR
practice has developed, firefighters are also referring incidents at DHHS properties to ARG
when they identify an on-going risk. The identification of public housing tenure in a referral
is an important piece of information because it guides decision around which agencies
outbound referrals should be made to.

DHHS Housing has developed support and services for tenants who may experience a
range of risks. In relation to risks such as hoarding identified by ARG and referred to the
Department, the response usually includes access to government funded services to assist
them to address the risk. ARG also receives referrals from DHHS Housing Services Officers
(HSOs). These more commonly include risk reduction advice regarding hoarding,
information about the HNS, and requests for inspections to quantify risk. ARG also develop
prioritised risk reduction advice which is often related to action being initiated by the
department via VCAT. In a referral involving a DHHS property, the organisational resources,

the knowledge of HSO's and the department's role as the landlord increases the likelihood of an outcome. In large part this is due to the leverage which results from their responsibilities as a landlord and their capacity to utilise VCAT which is an option not available in properties that are privately owned.

Out of external stakeholders, DHHS housing makes up the majority of social housing inbound referrals. This is due to it being the largest provider of subsidised housing in Victoria for people who are socially and financially disadvantaged.

Community housing providers manage housing through a subsidised model. These providers are often not-for-profit agencies and are a sector that is growing to meet the needs of the socially and financially disadvantaged to access safe, secure and affordable housing. In some referrals, Departmental properties are leased to these providers to manage, however this group includes other properties which have either been leased, purchased or purpose built by the sector.

Summary of Key Findings:

- DHHS Housing and MFB share a proactive approach to the safety of Public Housing tenants. This may account in part for the high rate of referrals for this group.

5.1.7 Geographic Distribution of Referrals Plotted Against the ABS Socio-Economic Indexes for Areas (SEIFA)

Treatment of Data: The team plotted all 802 referrals on a map of the Metropolitan District. These data included HNS referrals. The referrals were mapped with the Australian Bureau of Statistics' Socio-Economic Indexes For Areas (SEIFA). SEIFA ranks advantage and disadvantage across Australia by comparing multiple weighted categories including education, occupation, and resources. The resulting data are ranked on a decile in blocks of 30 to 60 dwellings (Pink, 2011).
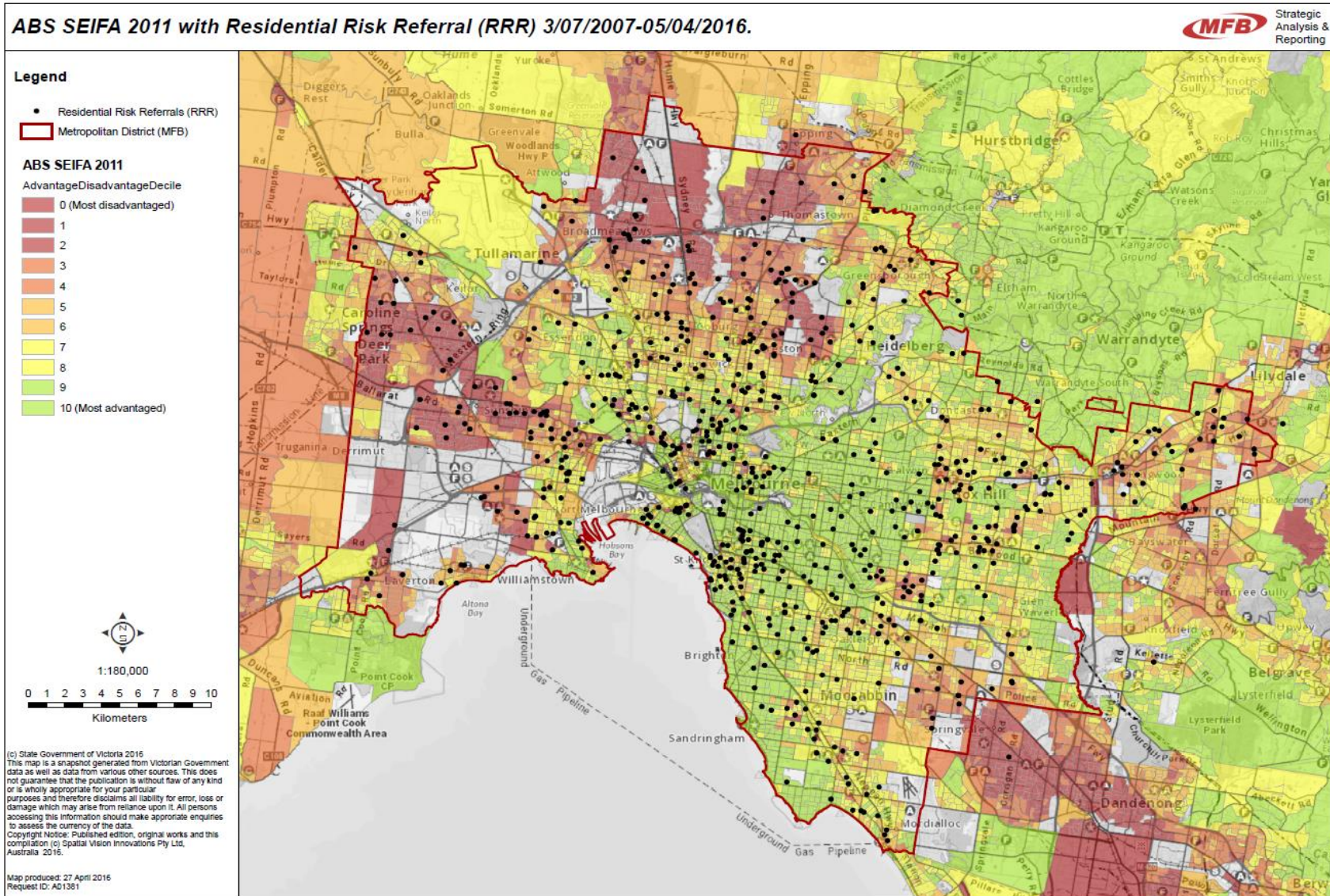
Figure 10: Map of Referral Distribution against Socio-Economic Indexes

Data Analysis:

Referral addresses are identified in areas with social and financial disadvantage.

Social and financial disadvantage was indicated in many referrals. In Figure 10, referrals are shown clustered around the areas with more disadvantage. This phenomenon occurs even in more affluent suburbs where there are small pockets of relative disadvantage. This may illustrates an intersection of disadvantage with the broader range of risks discussed in Section 5.2.1 Most Commonly Identified Risks. People living with high levels of social and financial disadvantage may be less connected to services. In these instances, the RRR process becomes vital as it allows firefighters and external stakeholders to advocate for these at-risk individuals.

Summary of Key Findings:

- Referral addresses appear to be more commonly located within areas with social and financial disadvantage. Further research is required to confirm the extent and nature of the relationship between referrals and relative disadvantage.

5.2 Risk Profile

This section examines the risks noted in inbound referrals by analysing commonly identified risks, frequency of risks, and the comparison of risks. The RRR process categorises risk into four broad groupings:

- Structural Risks focus on the state of the residence;

- Disabilities describe any limitations that may affect an individual's ability to identify or respond to an emergency;

- Behavioural factors are actions taking place within the residence, such as hoarding, squalor, and high risk behaviour like ad-hoc heating systems;

- Other risk factors are additional risks that don't necessarily fit into any of the other three categories; examples of other risk factors can include living alone, social and financial disadvantage and communication issues (i.e. CALD).

The risks are identified based on the observation of the person making the referral and their experience with an occupant.

5.2.1 Most Commonly Identified Risks

Treatment of Data: Of the 673 inbound referrals, 2095 risks were identified in the top 11 categories. Data from Hoarding Notifications are included. Hoarding notifications are entered into the database as hoarding and access and egress.
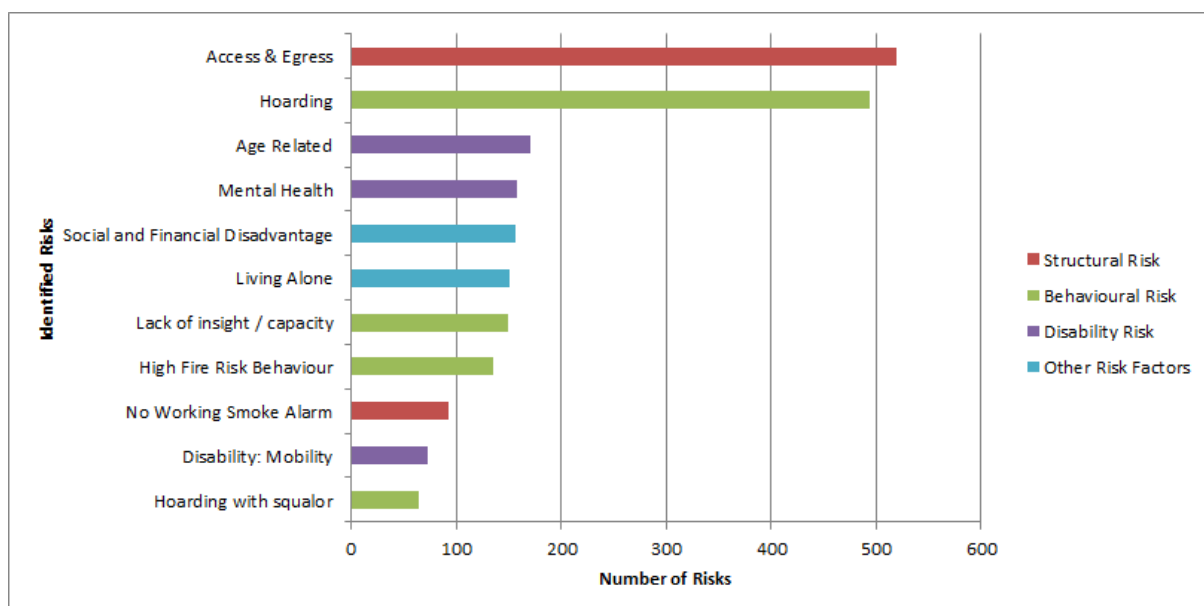
Figure 11: Most Commonly Identified Risks by Internal Stakeholders

Data Analysis:

The four most commonly identified risks are: hoarding, access and egress, age related disability, and mental health

Figure 11 shows that Access & Egress and hoarding are the most commonly identified risks. These two risks are interrelated and are often identified in conjunction with each other. This could be due to the impact of past RRR and HNS presentations provided by ARG to numerous stakeholders, which address the risks of hoarding and access and egress to the individual, community and firefighters. In Figure 11, age related disability, mental health and social and financial disadvantage were the third, fourth and fifth most identified risks. There are no formal presentations that address these three risks, therefore, it should be highlighted that stakeholders are identifying a wide range of risks and referring those risks to ARG.

There may be other risks that are interrelated, similar to hoarding and access and egress. Age related disability may be interrelated with living alone, as it is demonstrated from Figure 11 that single household type are the most commonly identified household type, and in Figure 11 that age may predispose an individual to risk. Both age related disability and living alone are amongst the top six most commonly identified risks.

Summary of Key Findings:

- The three most commonly identified risks are hoarding, access and egress, and age related disability.
- The RRR process is more focused on an individual's risks rather than structural risks.
- A wide range of risks are being identified by internal and external stakeholders.

5.2.2 Less Commonly Identified Risks

Treatment of Data: The data size for the less commonly identified risks is 251 risks as seen in Figure 12. Data from Hoarding Notifications are included. Hoarding notifications are entered into to the database as hoarding and access and egress. Refer to above (Section 5.2 **Risk Profile**) for information about risk categories.
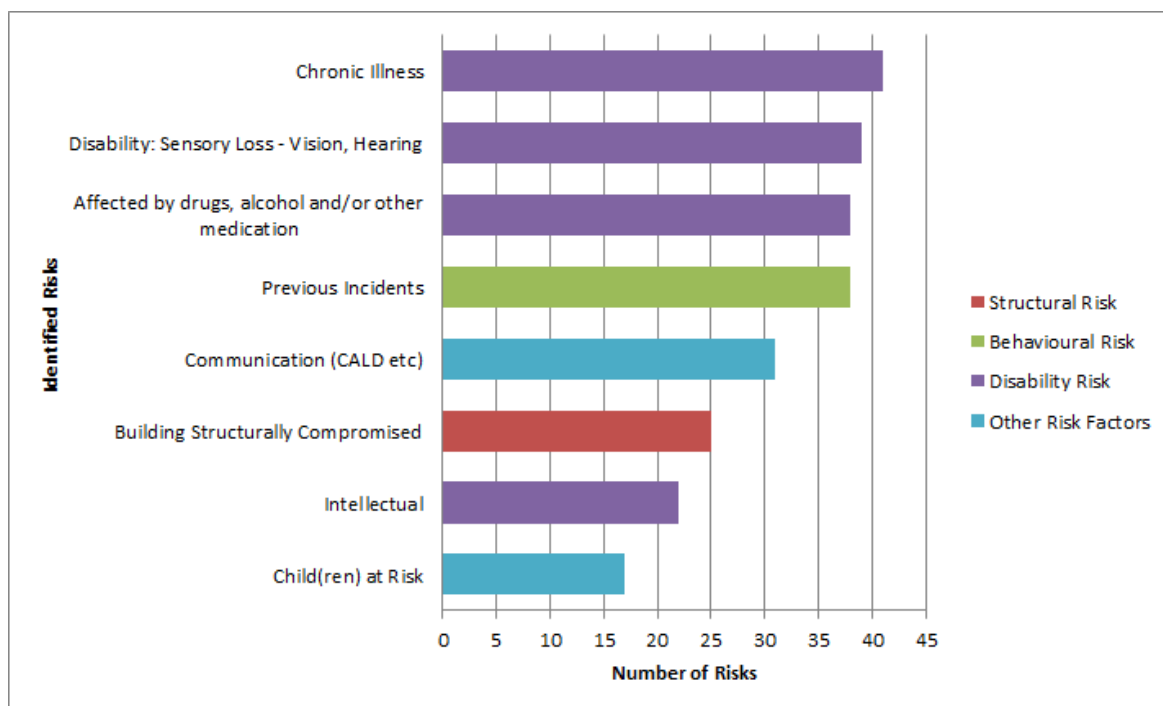
Figure 12: Less Commonly Identified Risks by Internal and External Stakeholders

Data Analysis:

Less commonly identified risks include: chronic illness, sensory loss, and drug and alcohol-related impairment.

Although these risks are being identified less frequently than others, firefighters and external stakeholders have an understanding that these risks may contribute to future incidents. As demonstrated in the case studies, there is an extensive diversity of risk. These risks may be less commonly identified for a variety of reasons such as these risks occur less frequently. In the case of external referrals it may also be because the agency is already addressing other risks. There may be risks that are not as prevalent and, therefore, may not be represented in this study.

Risk related to people who are CALD is often identified as having a relationship to risk in terms of fire, emergencies and vulnerability. The relationship between CALD and risk in a residential context is harder to quantify and there is a lack of research in this area. This study found 24 referrals where CALD was identified as CALD being a risk feature, and of these, only six were identified with no other risk. Three instances were found in which CALD was identified with issues related to competency/lack of insight and four in which the person was CALD and Deaf. The other risks were social isolation, living alone and social and financial disadvantage. This information is based on a small number of examples but it does

illustrate that CALD is more likely to be one of a complex series of related risks rather than a risk in itself in the context of the RRR process.

Summary of Key Findings:

- Internal and external stakeholders are identifying and referring a broad range of risks.
- CALD is likely to be one of a more complex series of risks, rather than a risk in itself.
- Some risk features may be underrepresented in this study.

5.2.3 Frequency of Risks

Treatment of Data: The data size for the frequency of risks is 673 referrals. HNS is not included in this data set because only two risks (hoarding, and access and egress) are reflected in such referrals. This analysis considered the frequency of the risks in each referral. The categories of this analysis correspond to the number of risks present in each referral.
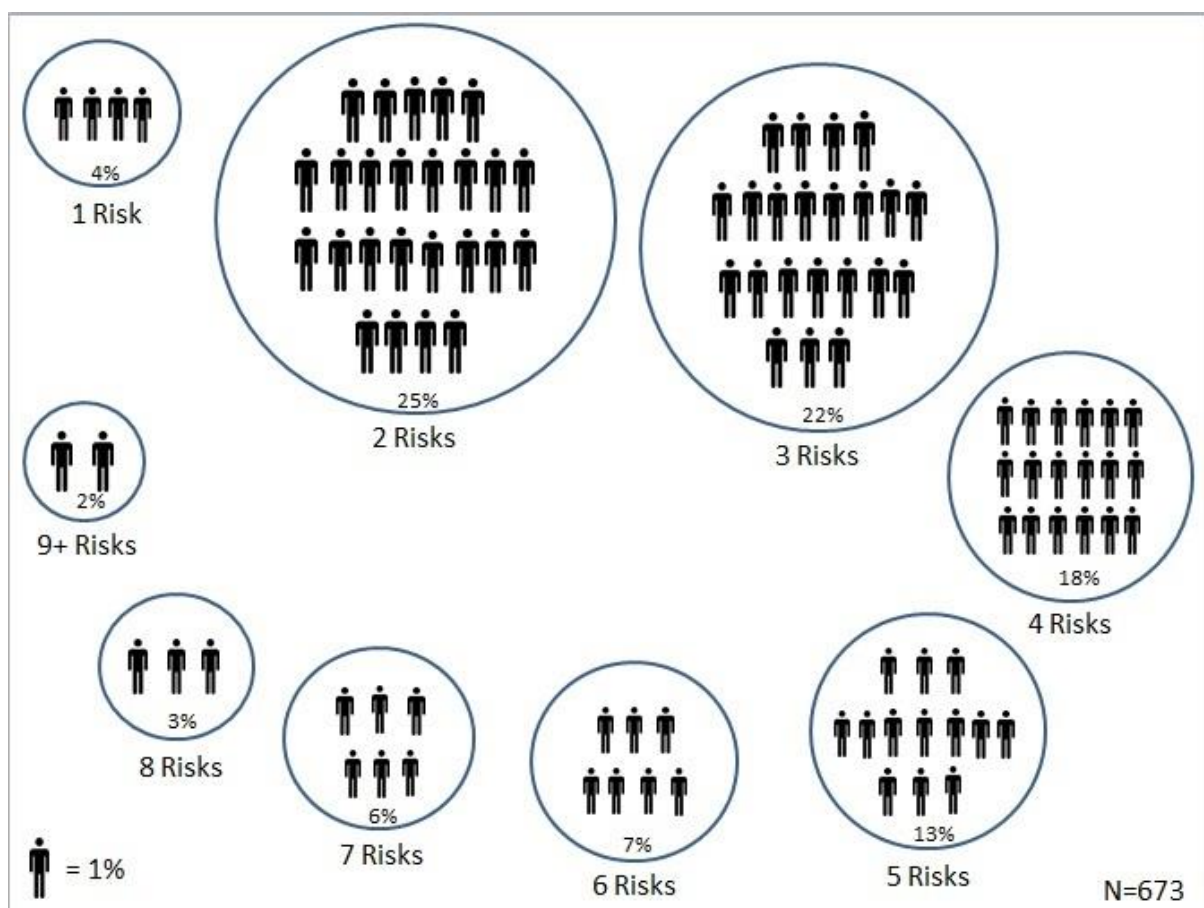
Figure 13: Number of Risks Identified per Inbound Referral

Data Analysis:

A majority of referrals identify more than one risk (96%).

Frequency of risk refers to the number of individual risks that are present for each inbound referral. On average, inbound referrals identify 3.9 risks, with the majority of referrals identifying between two and five risks. Approximately 2% of referrals identified nine or more risks. Figure 13 illustrates that individuals and households being referred live with a broad range of risk features. The low number of inbound referrals identifying one risk demonstrates that both internal and external stakeholders are referring individuals that require help to mitigate a range of risks they're experiencing.

Firefighters identified 4.2 risks on average, while external stakeholders identified 3.5.

External stakeholders, such as community care agencies, are trained to detect risk factors that could prevent individuals from identifying or responding to emergencies. Firefighters, without receiving formal training are able to identify multiple risks. This shows that firefighters are performing risk assessments that identify risks associated with either the individual or the environment and are using the RRR process to advocate for the at-risk individual.

Summary of Key Findings:

- Ninety-six percent of inbound referrals from internal and external stakeholders identify more than one risk.
- Firefighters identified 4.2 risks on average, while external stakeholders identified 3.5.
- External stakeholders are trained to identify risk factors and are contacting ARG in relation to fire related risks.
- Firefighters are performing risk assessments and advocating for the at-risk individual through the RRR process.

5.2.4 Identification of Risks by Firefighters
Treatment of data: The data size of this comparison of risks identified includes external stakeholders (n=1189 risks) and internal stakeholders (n=1705 risks). HNS is included in this data set. All risk factors were analysed in this data which can be found in Table A5 in Appendix G: Table of all Risk Factors- Firefighters vs. External (Risk Profile).

Data Analysis:
Firefighters identify a broad range of complex risks.

Hoarding and access and egress issues accounted for 68.6% of all risks identified by external stakeholders. See table in Appendix G: Table of all Risk Factors- Firefighters vs. External (Risk Profile). This is because ARG is recognised as having specialist knowledge in relation to fire safety and related risks such as hoarding. These same categories only accounted for 35% of risks identified by firefighters. Mental health, high fire risk behaviour, and lack of insight and capacity together accounted for 20.8% of all risks identified by firefighters (n=1705), and only 7.2% risks identified by external stakeholders (n=1189). This finding is significant on the basis that firefighters are not specifically trained to identify the types of complex risks as evidenced in our findings. This demonstrates a previously undocumented element of response capacity in MFB firefighters. The action of making a referral is a direct result of their response to an emergency. The linking of these two actions suggests that firefighters understand the duality of the organisational responsibilities in relation to response and prevention and the intrinsic link in building individual and community resilience.

Summary of Key Findings:

- Only 35% of referrals by firefighters are related to hoarding and/or squalor compared with 65% of external referrals from community and government agencies;
- Firefighters understand the duality of the organisational responsibilities in relation to response and prevention through making a referral as a direct result of an emergency incident.

5.2.4.1 Most Commonly Identified Risks by Firefighters

Treatment of Data: The data analysed in this section considers the top nine identified risks by firefighters. From these 673 referrals, 1343 risks were identified. Data from Hoarding Notifications are not included.
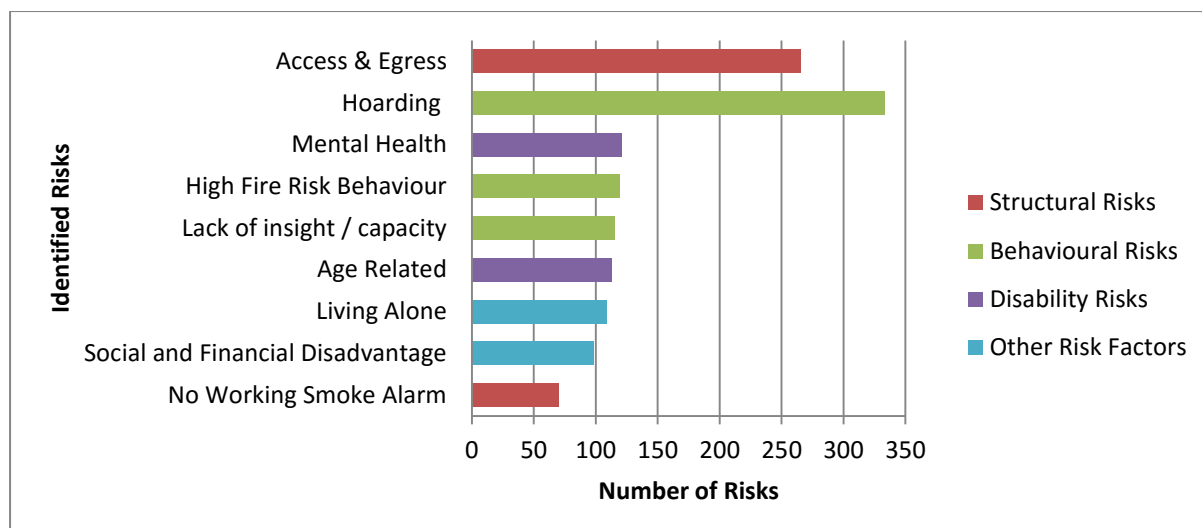
Figure 14: Most Commonly Identified Risks by Firefighters

Data Analysis:

The most commonly identified risks by firefighters include access and egress, hoarding, mental health and high fire risk behaviour.

As stated in Section 5.2.1 Most Commonly Identified Risks, there has been extensive research and presentations to stakeholders on the risks associated with hoarding. This may explain the increased number of referrals submitted by firefighters that identify hoarding and access and egress as a risk. Firefighters are also identifying mental health, high fire risk behaviour, and lack of insight/capacity as risks despite there being no training or information that address these risks specifically. Firefighters are aware that these risks can lead to future incidents and affected individuals may require external support. No working smoke alarm was the second most identified structural risk. This could be because a fire is the most common incident, where a risk is being identified and referred via the RRR process by firefighters (Figure 14). Also, firefighters note the presence and working order of smoke alarms in the house for their AIRS incident report.

Summary of Key Findings:
- Firefighters, even without formal training, are identifying and articulating a broad range of risks that include mental health, high fire risk behaviour, and lack of insight/capacity.

5.3 Inbound Referrals

This section of data analyses the number of external and internal inbound referrals that have been submitted to ARG from 2007 to 2016. This section will closely examine what internal and external stakeholders are submitting as inbound referrals.

Treatment of Data: The RRR data includes 673 inbound referrals. HNS data are not included in this data set. The data is analysed for number of internal and external referrals by year from 2007 to 2016.
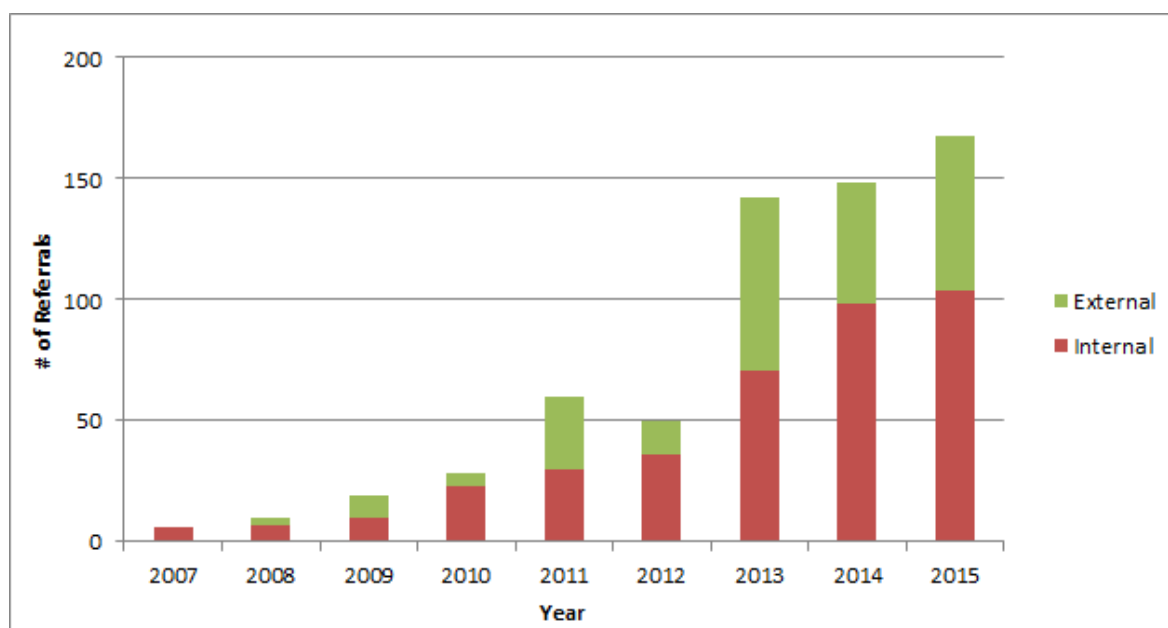
Figure 15: Internal and External Inbound Referrals per Year

Data Analysis:

The number of referrals per year has been increasing since 2007.

Figure 15: Internal and External Inbound Referrals per Year shows the number of inbound referrals that have been received over the course of 8 years (from 2007 to 2015) from both internal and external stakeholders. Inbound referrals submitted by firefighters (internal) increased by 47.7% on average per year. It can be seen that there is a large increase in the total number of referrals in 2013 (n=141) from 2012 (n=50). This increase is most likely a result of the development of a new process for firefighters to report residential risk issues via a tab on the MFB intranet and the promotion of its availability. From 2013 to 2014, the number of inbound referrals from external stakeholders has reduced. Due to the large percentage of external referrals to MFB regarding hoarding, the reduction may be due to the release of the Victorian Department of Health and Human Services document "*Hoarding and*

Squalor: A Practical Resource for Service Providers". In addition to providing a comprehensive understanding of both hoarding and squalor, the document also identifies referral pathways and other recommended practices. The release of this document may have increased knowledge, practice and the organisational capacity of a growing number of agencies.

Summary of Key Findings:

- The overall number of inbound referrals from internal and external stakeholders has steadily increased by an average of 53% per year since 2007.
- The increase in inbound referrals from internal and external stakeholders during 2013 could be a result of the HNS and "*Hoarding and Squalor: A Practice Resource for Service Providers*" document.

5.3.1 Inbound Referrals from External Agencies

Treatment of Data: The data size for inbound referrals received from external stakeholders is 262 referrals. HNS is excluded from this dataset.
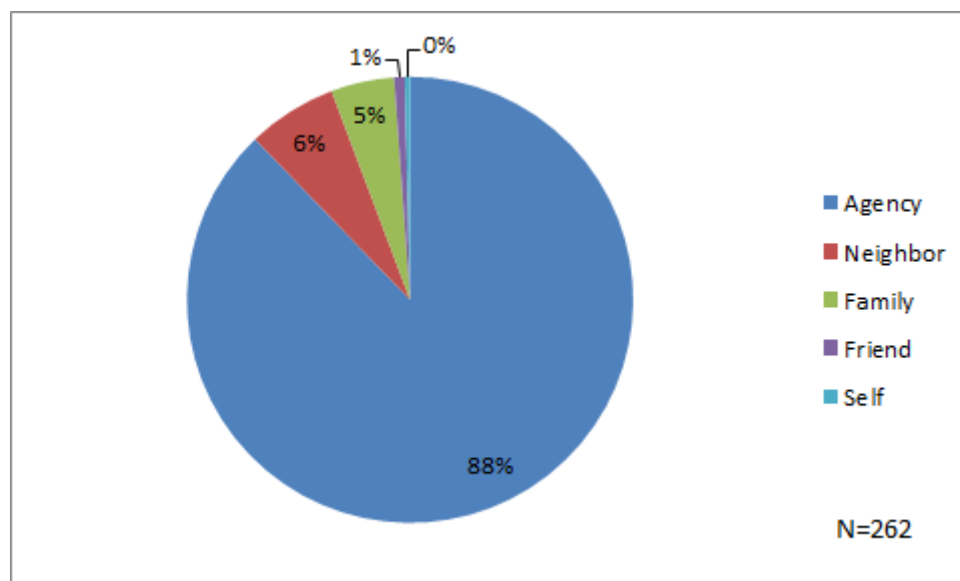
Figure 16: Percentage of Inbound Referrals Received from External Stakeholders

Data Analysis:

Referrals from external stakeholders are mainly from community and government agencies (~88%, n=262).

ARG has engaged with the community and government sector through a range of initiatives at a local, state and national level. Over the past decade, this has included raising

awareness about new and emerging issues such as hoarding abd squalor, and supporting agencies and programs that work with high risk groups to achieve improved safety outcomes for their clients and workers. As a result, ARG is recognised and contacted by sector workers in relation to clients' fire and emergency risks. Inbound referrals are also received from family members and friends of people at risk. Like agency based referrals, these referrals more often involve the provision of information and advice. Neighbours also refer issues to ARG; these most often involve situation in which hoarding is observed.

Summary of Key Findings:
- Out of external inbound referrals, community and government agencies are most commonly submitting referrals to ARG making up 88% of inbound external referrals.

5.3.1.1 External Inbound Referring Agencies

Treatment of Data: The inbound referring agencies data set includes 230 referrals. HNS data is excluded from this dataset. The categories that are analysed include: Local Government, Packaged Care Provider, Allied Health, Community Housing Provider, DHHS Housing, Aged Care Assessment, Victoria Police, Mental Health, Acute Health, MFB, and other. MFB is on the list of inbound referring agencies because other departments within MFB can make referrals to ARG.
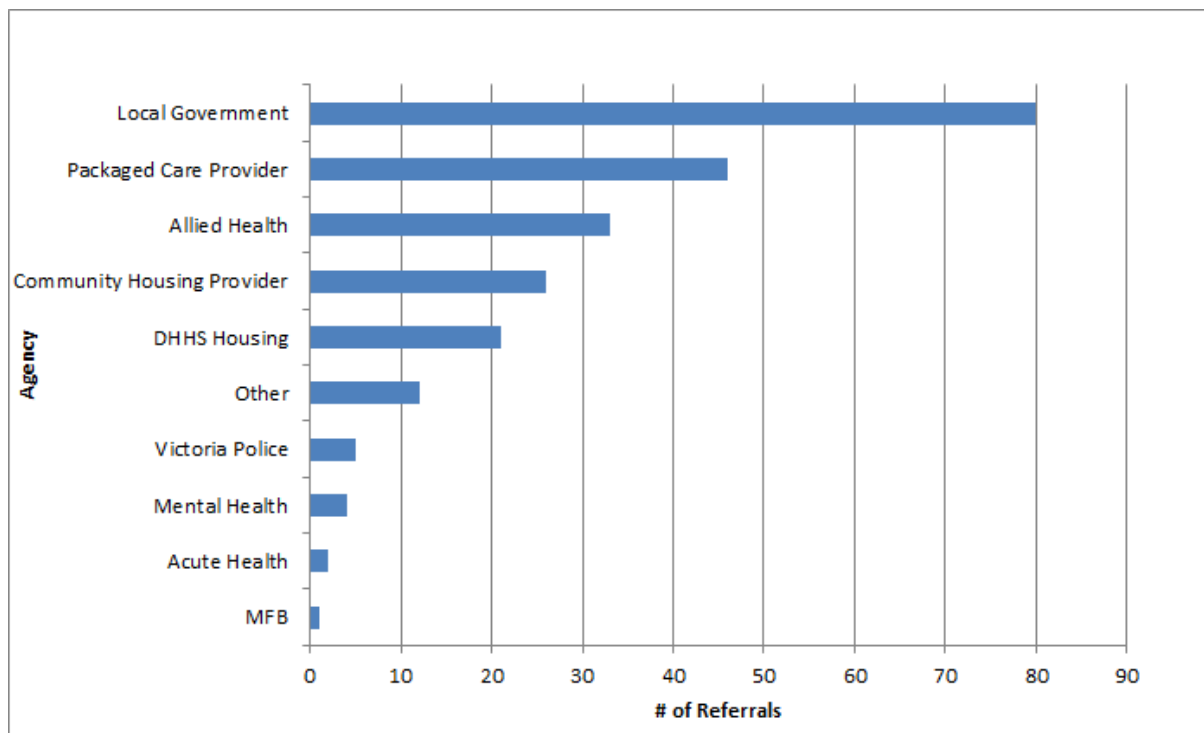
Figure 17: Number of Inbound Referrals Received from External Agencies

Data Analysis:

A wide variety of external agencies that are submitting referrals contact ARG in relation to risk issues.

The inbound referrals received from external agencies were categorised to determine which agencies are most commonly engaging ARG. The analysis indicates that the RRR process is accessible to multiple stakeholders. The agencies that identified at-risk individuals most commonly were local government agencies. The wide variety of agencies that have submitted inbound referrals infers that the RRR process has the potential to address a broad range of risks.

Summary of Key Findings:
- A wide range of agencies contact ARG as inbound external referring agencies.

5.3.2 Inbound Referrals from Firefighters

As defined in Section 2.7 **MFB Residential Risk Referral Process**, the RRR process is not a substitute for command and control arrangements which require firefighters to call Victoria Police if there are immediate welfare concerns for a person when responding to an emergency. The RRR process is a non-urgent response to address ongoing issues which are likely to result in another fire or other emergency. The risk of fire or another emergency is

often one risk in a more complex range of risks the person may experience. The team analysed the features of referrals from firefighters between 2007 and 2016. In addition, the team provided analysis to identify which internal engagement strategies were most likely to support an increase in reporting based on activities in Eastern and Western Districts.

Treatment of Data: The size of this data set shown in Figure 18 is 385 referrals. HNS is not included in this analysis. The map displays referrals made in each district by year.
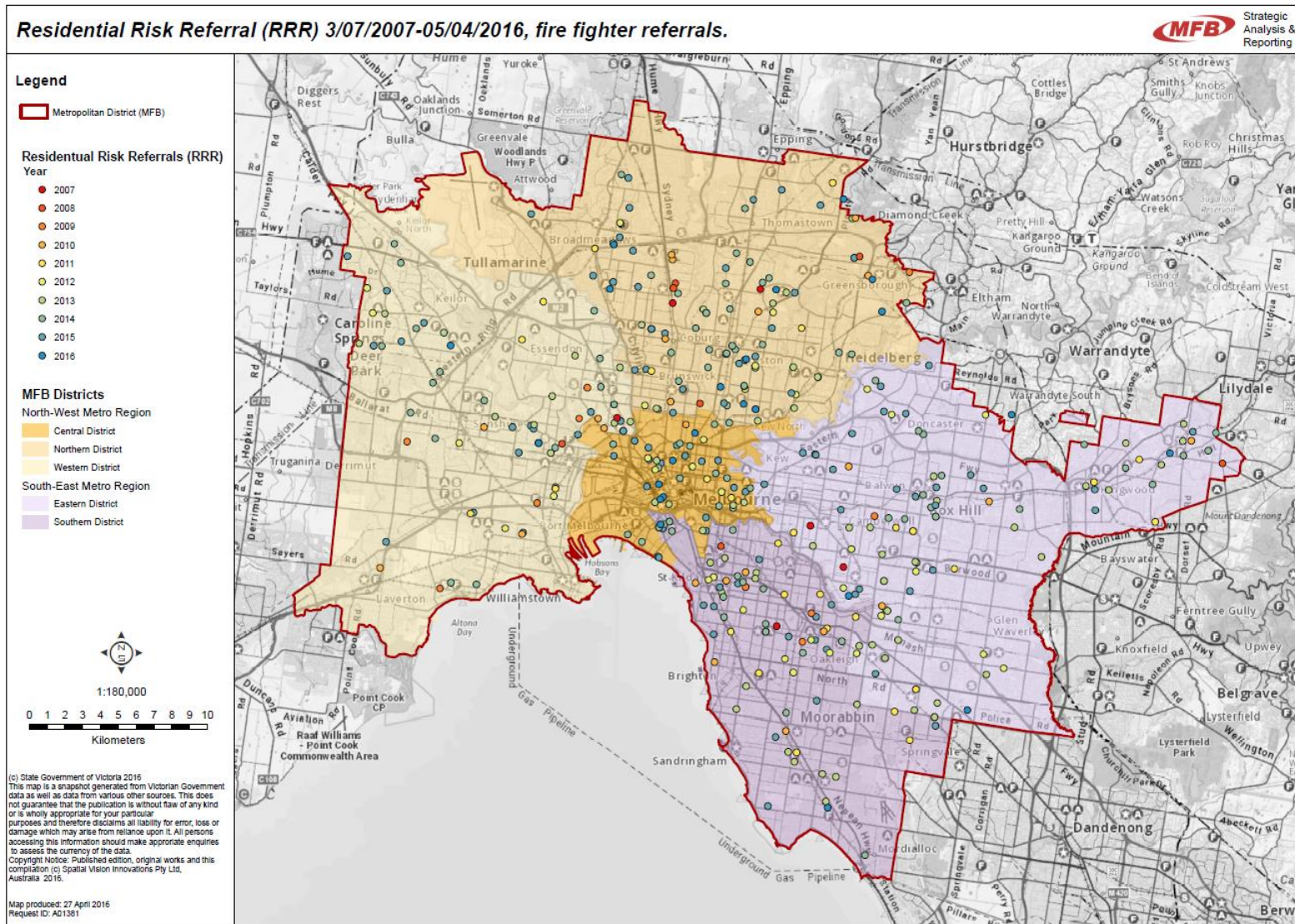
Figure 18: Map of Fire Fighter Referrals by District

<u>Data Analysis:</u>

Firefighters across all MFB Districts identify and refer at-risk individuals.

This map (Figure 18) demonstrates that firefighters, regardless of their location, are identifying risks and advocating for at-risk individuals. It is important to note that the population demographics of each district may contribute to the number of inbound referrals that are submitted. Firefighter referrals do not follow any geographic pattern and appear to be based on the risks they encounter during the course of their response activities.

<u>Summary of Key Findings:</u>

- Inbound referrals are coming from firefighters across all of the MFB districts.
- The reasons for the geographic distribution of referrals are complex and unclear.

5.3.2.1 Internal Inbound Referrals by District

The following section examines the distribution of inbound referrals from the five MFB districts and assesses whether there is a demonstrable relationship to RRR presentations. Firefighters can respond to emergencies in multiple districts if necessary (including the CFA region), and there are multiple ranks at each station. Each rank has received different degrees of familiarisation that could impact their knowledge in regard to the RRR Process.

<u>Treatment of Data:</u> The size of this data set shown in Figure 19 is 385 referrals. HNS is not included in this analysis. These data are categorised based on year and referring district. There are MFB fire stations located along the MFB/ CFA boundary. These fire stations often respond to residences within the CFA region and vice versa. There were a total of 8 referrals received regarding residences in CFA region. These were excluded because ARG refers the residences to CFA centrally at CFA's Burwood headquarters.
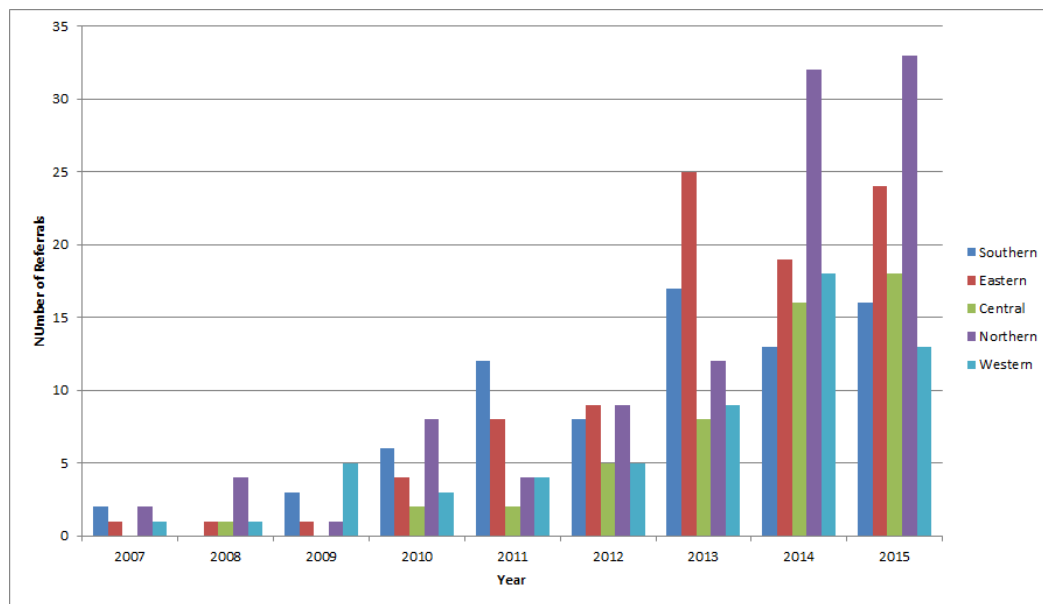
Figure 19: Number of Inbound Referrals Received from MFB Districts (2007-2015)

Data Analysis:

The number of inbound referrals submitted by firefighters has been increasing since 2007 for all districts.

From 2007 to 2015, the total number of inbound referrals from firefighters increased by an average of 47.7% each year. This was particularly evident in 2013 and 2014, when there was a large increase in referrals from all districts. As identified in Section 2.7.3 Promotion of the RRR Process, a new system for firefighters to report issues in residential properties was developed in 2013 and promoted to firefighters across all shifts and platoons. This promotion aimed to raise firefighters' awareness of the RRR process and appears to have resulted in an increase in referrals across all districts from 2013-2014. The variability in the number of referrals received yearly from each district could be representative of the at-risk residences with which firefighters engage. There could be extensive spans of time where firefighters are not encountering at-risk individuals or residences. However, when firefighters do attend an incident that involves an at-risk individual, they appear to be referring those risks in to ARG via the RRR process.

Summary of Key Findings:

- The number of inbound referrals from firefighters has increased by 47.7% on average per year since 2007.

- The years 2013 - 2014 experienced the largest increase of inbound referrals from firefighters; this could be due to the instalment of the HNS and the promotion of the RRR process by Operational Commanders.
- The variability of the number of inbound referrals from firefighters across the districts could be representative of the number of at-risk individuals with whom firefighters encounter.

5.3.2.1.1 Referral Rates and Training Comparison

The team examined two districts, Eastern District and Western District, to determine the impact of the RRR presentations on the number of referrals.

Treatment of Data: The data size in the analysis of the Eastern district is 151 referrals. As seen in Figure 20, this analysis represents the referrals made by firefighters in the Eastern and Western District between the years of 2007 to 2015.
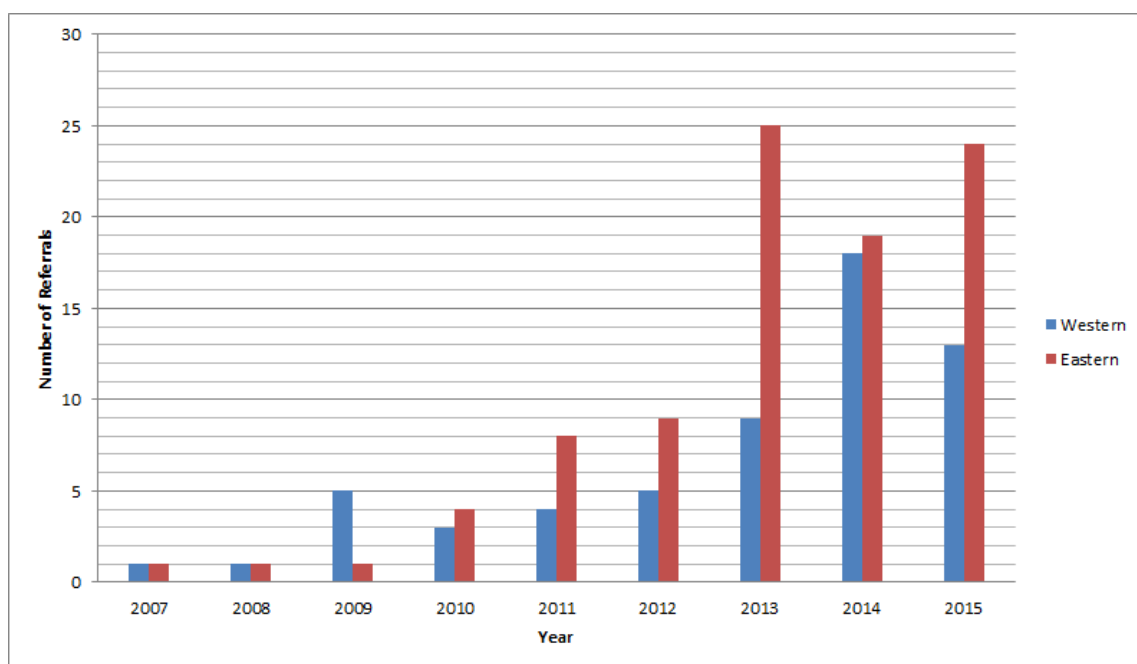
Figure 20: Number of Inbound Referrals Received from Eastern and Western Districts

Data Analysis:

It is difficult to quantify the impact of various modes of training on the rate of referrals.

As identified in Section 2.7.3 Promotion of the RRR Process, a intranet application to enable firefighters to make referrals relating to residential properties was developed in 2013 and promoted to firefighters across all shifts and platoons by Operational Commanders. Over

the following 12 months ARG conducted information sessions across all stations and platoons in Eastern District. The team tried to identify if there was relationship between these two distinct activities and the number of referrals made in two Districts. Between 2012-2014 Eastern District received information about the RRR process from Operations Commanders and through information sessions delivered by ARG. Western District only received the information from Operations Commanders. The time period was chosen because it captures the year before the RRR was developed and it includes the year following the promotion of the RRR by ARG. Also it ensures that there is sufficient time for the practice to be applied by firefighters and any resulting trends.

In 2012, Eastern and Western District each submitted fewer than 10 referrals. In 2013, Operations Commanders promoted the development of the RRR to all MFB shifts/platoons. The number of referrals from Eastern District increased by 64% (n=25). Western District submitted a total of 9 referrals. In 2014, ARG promoted the RRR to every shift/platoon within the Eastern District. During that year, ARG received 19 referrals from the Eastern District. The number of referrals from Western District doubled from 2013, increasing to a total number of 18 referrals in 2014. These findings are inconclusive, as both districts had peaks in the number of referrals submitted during 2013-2014 despite receiving different modes of promotion. However, these findings may suggest that promotion of the RRR is more effective when being delivered by Operations Commanders.

Summary of Key Findings:
- The provision of information about the RRR process to firefighter from Operations Commanders appears to have been more effective than promotion by ARG. However the result of this analysis are inconclusive.

5.4 Most Common Type of Incident which results in a RRR

Treatment of Data: The data size of this analysis included 413 incidents. The "other" category includes drive by inspections, walk-ins, and non-emergency calls. Incidents include fire, false alarm, smoke alarm, EMR, lock in/out, assisted Victoria Police/AV, and gas leaks.
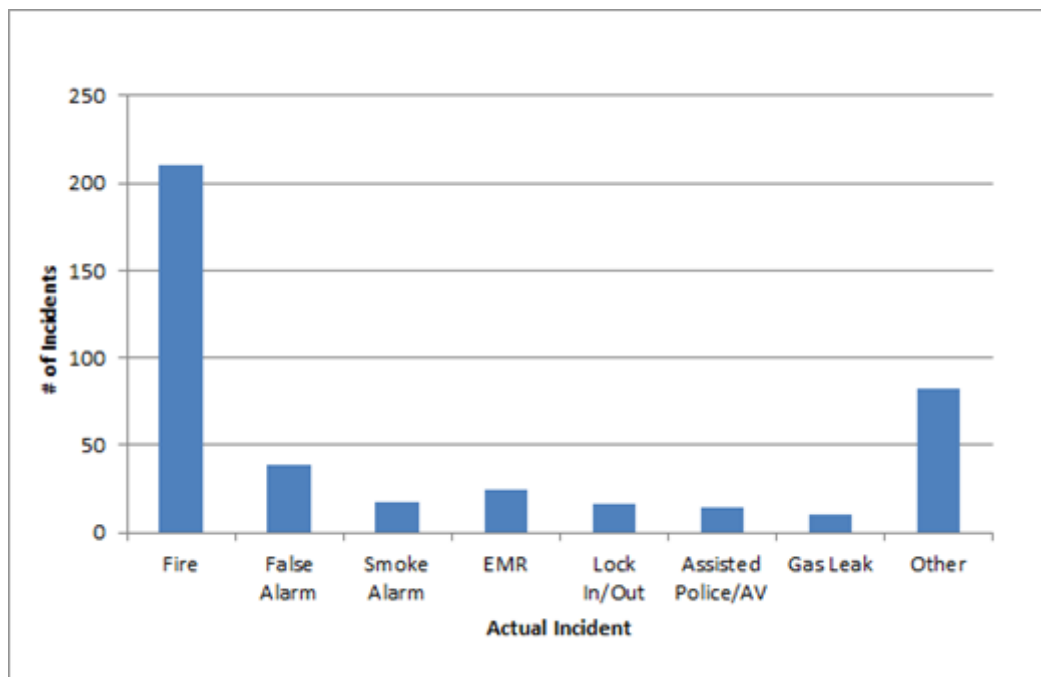
Figure 21: Actual Incident and Occurrence Rate

Data Analysis:

Firefighters are identifying at-risk individuals at a variety of incidents.

While fire is the most common incident where firefighters identify at-risk individuals, there are a variety of incident that result in firefighters making a referral via the RRR process. This demonstrates that firefighters are performing risk assessments at all types of incidents, and are advocating for at-risk individuals they may encounter. For example, false alarms are the second most common incident. While attending a false alarm it appears that firefighters are assessing the situation and environment for additional risks. An example of this is in 4.1.2 Case 2: False Alarm where a firefighter identified a potential underlying risk after attending repeated false alarms at the same address.

Summary of Key Findings:

● Firefighters are identifying ongoing risks and making referrals via the RRR process at a variety of incidents; not just fires.

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5.5 Outbound Referrals

There is no standard response to a referral due to the diversity of risks reported and the individual circumstances of affected people. The treatment to address each risk is different based on the person's age, level of disability, property tenure and the composition of

the household. As the RRR process has developed, policy has been developed to ensure the outbound referral process is reflective of community services practice and also reflects MFB's role in risk mitigation. ARG has developed and follows the Residential Risk Referral Manual which is maintained through a continuous improvement practice. Team members receive induction, mentoring and support to undertake the activity. The following section illustrates the actions involved in responding to a RRR.

Treatment of Data: The size for the referral response data set is 1309 actions identified, as seen in Figure 22. HNS is included in this analysis. The four categories in this analysis are advice, referral, practical assistance, or no further action taken. "Advice" may include information targeted to the particular set of risks identified in a referral. A "referral" means that ARG has contacted another agency, such as a community care agency, that has the appropriate duty of care to the affected individual. "Practical assistance" may include the installation of smoke alarms if there is no other option. The "no further action" category is a misnomer. This category was created in the database and is not well defined. Reasons "no further action" may have been checked off in the Access database may include death of an individual in the residence or lack of information to enable ARG to take any action. Also, as the RRR process has progressed, the category of "no further action" has evolved as well. Originally this category denoted anytime an official outbound agency referral was not made. Currently, this category is used to describe actions in which limited or no engagement occurred.

Two referral response categories are examined in greater detail. The "referral" section shows the agencies with whom ARG engages to respond to an affected individual's needs. The "no further action" section discusses the evolution of this category, and how classification of responses has changed since the beginning of this process.
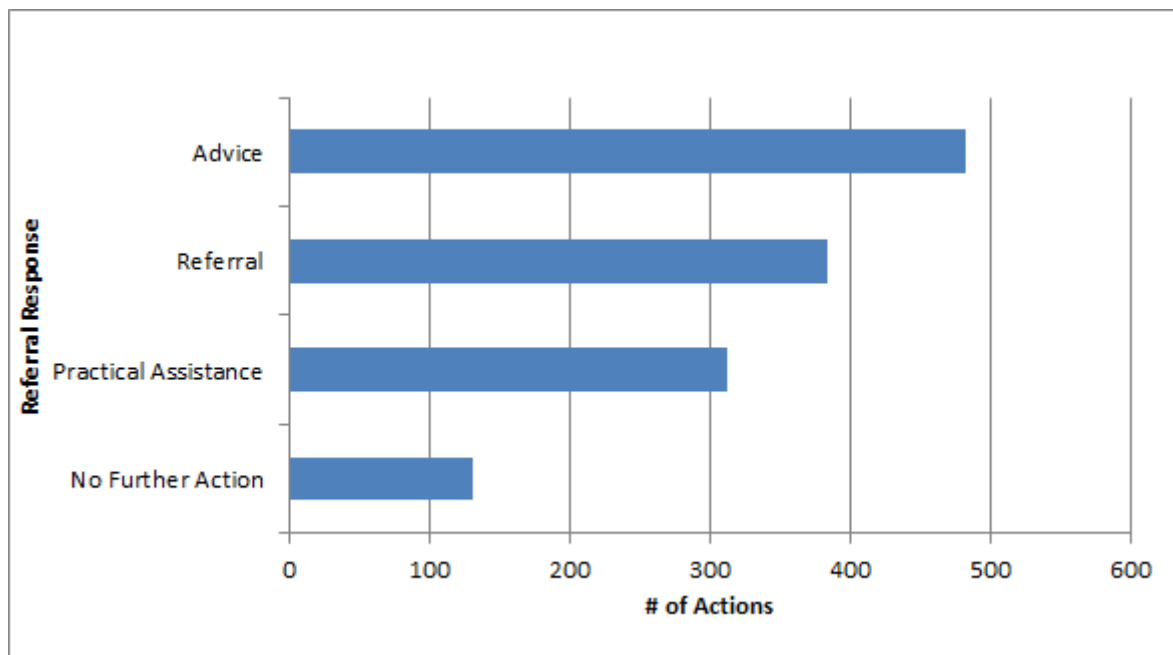
Figure 22: Number of Actions per Referral Response

Data Analysis:

ARG assesses each inbound referral and responds on an individual basis.

There are often multiple actions taken for each referral, as shown by the case studies in Section 4.0, which can also include contacting multiple agencies. The data size illustrated in Figure 22 demonstrates the extent of actions taken per response. Affected individuals and their advocates, including community and government agencies, may receive advice targeted to address the specific risks identified in a referral. The practical assistance provided by MFB is limited to actions that are within MFB's role and responsibilities, and for which funding is provided. When MFB provides practical assistance, it includes actions such as placing an alert on a property through the Hoarding Notification System, or sometimes supplying and installing smoke alarms in situations where no other form of risk mitigation is available. ARG makes a referral to an external agency that is funded to address the risk of the affected individual as part of its role and responsibilities. ARG often engages a number of agencies and organisations to determine the most appropriate response and connect the individual to resources applicable to their situation. Although there are four distinct categories of referral response, the response taken in relation to an individual often includes more than one action.

Summary of Key Findings:

- The response by ARG to inbound referrals is made on a case by case basis.
- The responses to referrals can vary, but usually include more than one action.

● Outbound referrals are to agencies that are funded to address the identified risk as part of their program and/or legislative/regulatory role and responsibilities.

5.5.1 ARG Outbound Referrals to External Agencies

Treatment of Data: The data size of outbound referrals to external agencies includes 464 engagements over 384 referrals. HNS data are included. This analysis reveals the frequency of outbound referrals from ARG to various external agencies regarding an at-risk individual.
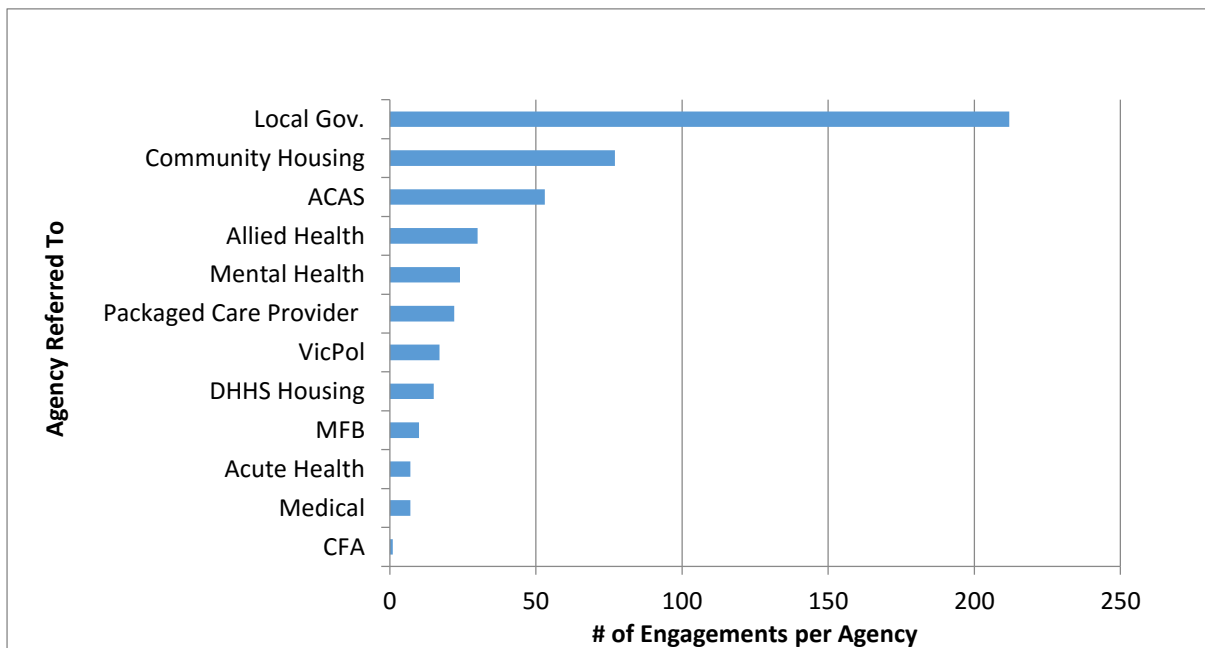

Figure 23: Number of Inbound Referrals Referred to each Agency

Data Analysis:

ARG engages a broad range of agencies in the referral process.

ARG focuses on making referrals to agencies whose role and/or program responsibilities are most likely to address the risk and deliver an improved outcome for the affected individual. This practice may require the engagement with multiple agencies for one referral to determine the most appropriate care for the affected individual. Contacting agencies also aids in determining current or previous contact with the affected person. ARG often directs referrals to local government, as seen in Figure 23, due to the varied departments with separate responsibilities and capacity. ARG also refers frequently to DHHS housing, ACAS, and a variety of health services. Referrals are also made internally to other departments within MFB including Juvenile Fire Awareness (JFAIP), Building Inspection and Compliance, and Fire Investigation and Analysis.

Summary of Key Findings:

- ARG engages the program and/or agency most likely to assist and support the affected individual to deliver an improved safety outcome.
- More referrals are directed to local government than any other single agency; these referrals are to a range of departments within local governments.

5.5.1.1 Outbound Referrals to Local Government Authorities (LGAs)

Treatment of Data: The data size for outbound referrals to LGAs is 186 referrals, as shown in Figure 24. HNS is included in this data set.
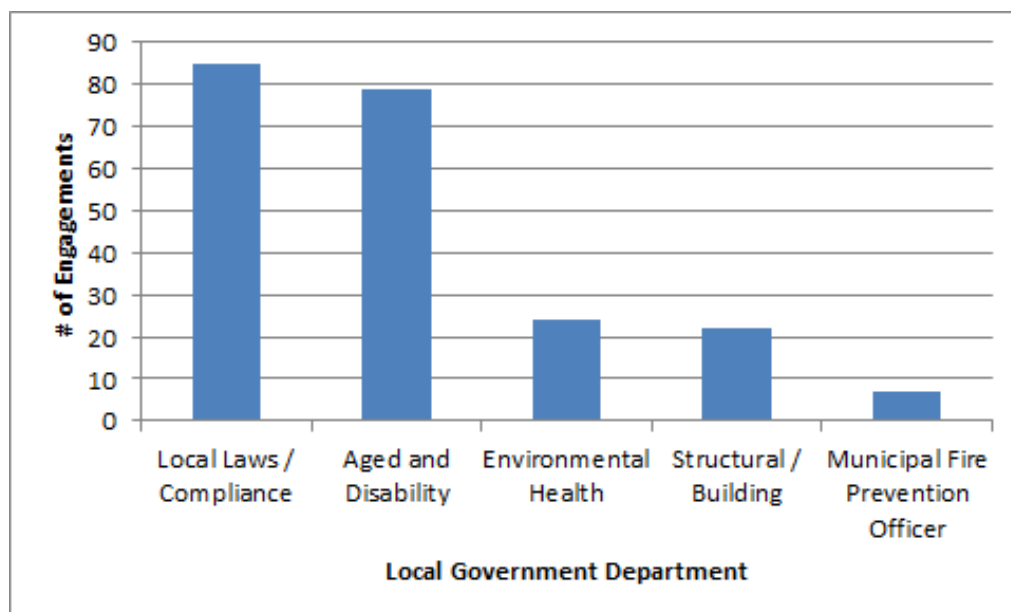
Figure 24: Number of Referrals Referred to Local Government Authorities

Data Analysis:

ARG most frequently refers to the Local Laws and Aged and Disability departments of local government.

Referrals are not made in isolation and even though local government referrals are the most prevalent, these departments may not have been the only point of contact in addressing a referral.

Local Laws and Compliance may be involved in referrals where there is hoarding visible from the street. In these referrals, Local Laws and Compliance may engage the individual on the premise of unsightly or unkempt property. This mode of engagement can be

used when there is insufficient reason to contact or engage the affected individual in another way.

Local Government Aged and Disability departments may be contacted when the subject of the referral has an age-related disability. The rate of referrals to this agency may increase as the ageing population grows.

Local Government Environmental Health departments may be engaged for cases of squalor within a residential context. When environmental factors within a residence are affecting the health of the occupant or neighbours, Environmental Health may enter a residence to determine the source of the hazard.

Local Government Structural and Building departments are usually engaged by ARG when a referral indicates that there is a loss of structural integrity at a residence. An increased risk of loss of structural integrity is usually due to the presence of hoarding.

The least commonly contacted local government department is the Municipal Fire Prevention Officer. This officer has only been contacted in specific cases where the officer had leverage with the affected individual.

Summary of Key Findings:

- Local Laws and Aged and Disability are the most frequently contacted areas of local government in outbound referrals.
- The Environmental Health department has leverage in referrals that include squalor.
- The Local Laws and Compliance, and the Structural and Building departments have been used to engage affected individuals where hoarding was present in the referral.
- The high level of referrals to Local Laws is likely to result from referrals about hoarding observed from street level with no other information.

5.5.2 No Further Action

Treatment of Data: The size of the no further action data set was 150 reasons for no further action taken across 131 referrals. HNS data are not included in this analysis. Categories within "no further action" are insufficient information, declined referral, deceased, press/release photo, letter sent, and unable to contact.
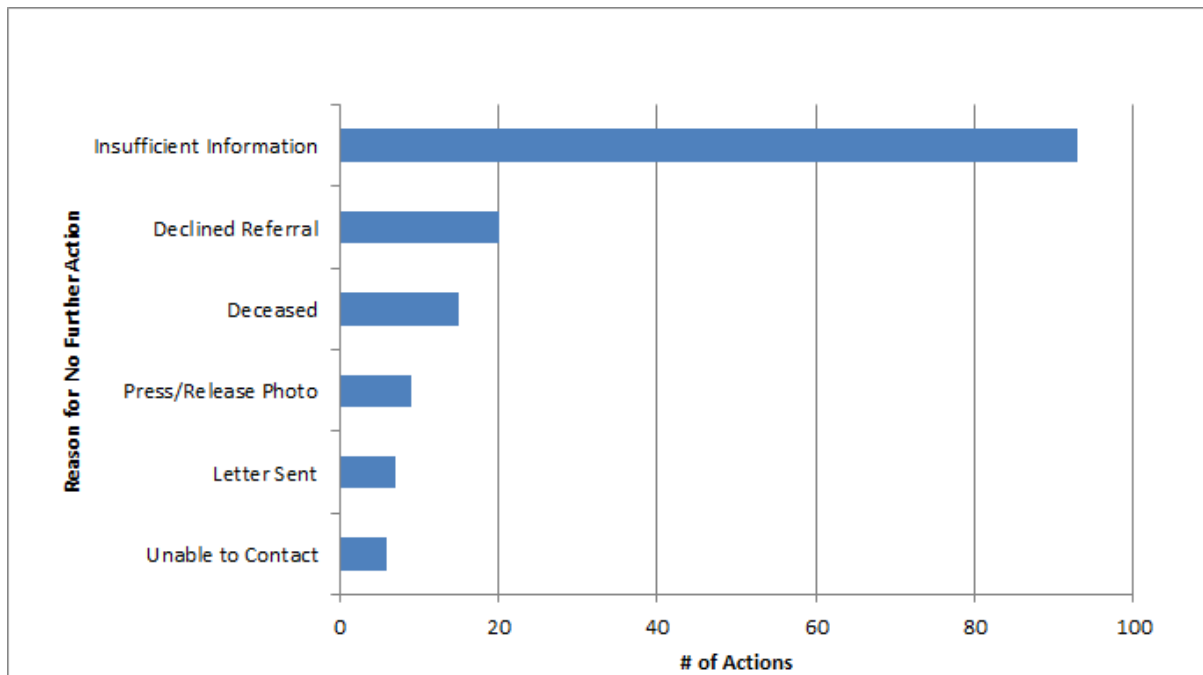
Figure 25: Number of Referrals with No Action Taken

Data Analysis:

Missing information from an inbound referral can make engagement with a referred individual difficult.

The "no further action" option in the database was designed to capture a referral for which no action was taken when, in actuality, it meant a formal outbound referral had not occurred. Due to the large number of referrals where no further action was denoted as ARG's response, the team decided to examine these data in greater detail. Out of these 131 referrals, 79 showed instances where no further action was the only response made to a referral. These 79 referrals are explored in greater depth in Section 5.5.2.1.

Summary of Key Findings:

- "No Further Action" accounts for 19% of all referrals.
- "No Further Action" is a misleading category title. Our analysis identified that significant actions occurred in cases that were identified as no further action in the dataset.
- Insufficient information is the largest reason for "No Further Action". This lack of information makes engagement with an affected individual difficult or impossible.

5.5.2.1 "No Further Action" Category by Year

Treatment of Data: The data size of this analysis included 79 instances where "no further action taken" was the only response denoted. This data set does not include HNS. This is shown in an annual context in Table 2.

Table 2: No Further Action Taken by Year

Year	Referrals containing "No Further Action Taken" Only	
	Number of Referrals	Percent of Total Referrals
2007	5	83%
2008	0	0%
2009	6	35%
2010	3	11%
2011	8	13%
2012	6	13%
2013	18	14%
2014	19	16.5%
2015	14	10%

Data Analysis:

Use of "no further action" as a category does not accurately reflect actual practice.

The team examined the "no further action" data because of the size of the data (n=79) and what it may reveal in terms of a gap in practice. This process involved examining the data set related to other actions taken. Shown in Table 2, the referrals where "no further action taken" was the only category selected is a much smaller portion of this data. ARG is responding to these referrals in an active manner. As identified in previous sections of the report "no further action" may have been ticked on the basis that a referral did not occur.

The team also examined "no further actions" over the last six months. Three instances were identified and analysed to identify what, if any, actions occurred.

1. The first instanced involved a residence that was referred via the HNS. The incoming referral failed to provide the appropriate information to enable a notification to be

uploaded to the system. A follow up email was sent to the referrer advising them on how to resubmit the notification.

2. The second referral involved a concerned neighbour calling ARG to discuss hoarding in the property next door, which has also damaged the fence between their properties. The person was provided with information and advised to contact local council.

3. In the third instance, the referral was submitted by firefighters following a cooking fire in the home of an elderly man who was CALD and only proficient in Greek. A neighbour heard the smoke alarm and called 000 as the man was unable to take any action including evacuation due to Parkinson's disease. As the man lived with his son ARG attempted to contact the son to advise him of services and smoke alarms linked to personal alarms but were unsuccessful. ARG sent a letter to the man with this information.

As demonstrated through this investigation, the three instances of "no further action" involved a number of risk mitigation actions in each case. This indicated that current practice does follow up referrals, but not all outcomes include an actual outbound referral.

Summary of Key Findings:
- ARG is responding to referrals categorised as "no further action" in an active manner.

6.0 Limitations

The findings from this project are subject to a number of limitations. The following section details these limitations.

6.1 MFB Practices

The RRR process grew out of firefighter advocacy for people who experience risk. While this practice is now underpinned by policy, in its early stage it was conducted with less formality and allocated few organisational resources. As a result, some data required to conduct a comprehensive analysis of all referrals were either missing or inconsistently recorded. For example, information related to the age and other details of the affected person was initially only discussed during phone contact with an external agency either making or accepting a referral. As identified in Section 5.1.1 Age, this has resulted in a high number of cases where the age is unknown; on the basis that it was not documented.

Many of the work practices that resulted in poor or inconsistent recording of data have been addressed, but outstanding gaps will be noted in our recommendations.

6.2 Access Database

As the RRR process developed and the number of referrals increased, the workload for ARG also increased, resulting in a limited focus on data management. The data collection system for this study is comprised of two parts: the archived records of referrals and interactions (filed by residential address), and an Access database. The first component is the system is used on a daily basis by the ARG team. Each file contains emails, inbound referrals, actions taken, and other supporting documents. Accessing the documents on the basis of chronology and type of information is an ongoing challenge.

For the purposes of this study, an Access database was created which involved the review of each file container and the transfer of information into the database for analysis. The transfer of the information into the database was resource intensive. Inadequate consideration was given to how the structure of the database would affect our ability to conduct data analysis. An example of the limitations of the Access database is that multiple referrals and/or incidents to the same address cannot be analysed. For example, if an address has had six separate instances where inbound referrals and/or incidents have occurred, these are represented as one incident. In response to this limitation we developed example case studies of multiple incidents and/or referrals in a separate section (Section 4.2 **Multiple**

Incidents and Referrals). We address a number of the above limitation in the recommendations (Section 7.2).

6.3 AIRS Database

The Australian Incident Reporting System (AIRS) is the national system used to report on the fire service responses to fires, accidents, hazmat incidents, false alarms and other incidents. Data collected in AIRS has a strong focus on the structural and logistical aspects of the incident. AIRS data has provided evidence to enable fire services to influence and advocate for change in the built environment. In contrast, AIRS does not require emergency services to identify information about the people who experience a fire or other emergency. While AIRS does provide a free text description box, it does not include prompts or advice about what information will be of value. This report has identified a number of trends and drivers which will result in unprecedented demographic and social change in the community over the coming decades. For fire services, this will bring new challenges as many of these developing trends involve groups at higher risk of a fire or other emergency. Modernising AIRS to systematically record demographic information would ensure that important information about whom is more at risk of having a fire or other emergency is collected on a national scale. As in previous WPI/MFB studies, we will address this gap in AIRS data collection in our recommendations

7.0 Conclusion and Recommendations

This chapter summarises the findings from this project and provides recommendations for improvements to the process and recommendations for further research.

7.1 Summary of Key Findings

This section includes the key findings from data representing 802 residences recorded in the ARG residential risk database between 2007 and 2016.

7.1.1 Occupant Profile

- Older people are overrepresented in Residential Risk Referrals. Fifty seven% (n=176) of referred individuals are aged 65 years or over. People aged 81 years and over, represent 22% (n=68) of the referred individuals. The number of older people is projected to increase significantly in the future.

- These findings are consistent with research in Australia and overseas which identifies older people as being at higher fire risk and support the MFB Plan 205-18 (MFESB, 2015) analysis that an ageing population is a growing risk.

- Children under the age of 18 years are underrepresented in Residential Risk Referrals. Addressing the risks to children identified in RRR's is usually achieved through supporting the parent and/or engaging services with responsibilities in relation to child protection.

- Disability is identified in approximately half of the referrals. Physical disabilities were more commonly identified, but mental health related disability still represents a significant portion of the disabilities identified. Multiple disabilities are commonly identified.

- There is no evidence of a link between gender and risks identified in inbound referrals.

- Living alone is the most commonly identified occupancy profile in referrals. Case Studies 3 and 4 illustrate this risk profile. This is consistent with findings in previous WPI/MFB research from 2011 which found that the majority (63%) of fire fatality victims lived alone. Single households represent a growing risk in the community due to the increase in number of single person households.

- Referrals most often identify owner occupied residences, but referrals from public housing properties are overrepresented. DHHS Housing and MFB share a proactive

approach to the safety of public housing tenants. This may account in part for the high rate of referrals for this group; it may also be indicative of a link between disadvantage and risk.

- Referral addresses appear to be more commonly located within areas with social and financial disadvantage. Further research is required to confirm the extent and nature of the relationship between referrals and relative disadvantage.

7.1.2 Risk Profile

- The RRR process is more focused on an individual's risks rather than structural risks. A wide range of risks are being identified by internal and external stakeholders. The three most commonly identified risks are hoarding, access and egress, and age related disability.

- Ninety-six percent of inbound referrals from internal and external stakeholders identify more than one risk. Firefighters identified 4.2 risks on average, while external stakeholders identified 3.5.

- External stakeholders are trained to identify risk factors and are contacting ARG in relation to fire related risks. Firefighters are performing risk assessments and advocating for the at-risk individual through the RRR process.

- Firefighters, even without formal training, are identifying and articulating a broad range of risks that include mental health, high fire risk behaviour, and lack of insight/capacity. This indicates that firefighters understand the duality of the organisational responsibilities in relation to response and prevention through making a referral as a direct result of an emergency incident.

- Firefighters are identifying ongoing risks and making referrals via the RRR process at a variety of incidents; not just fires.

-

7.1.3 Inbound Referrals

- The overall number of inbound referrals from internal and external stakeholders has steadily increased by an average of 53% per year since 2007.

- A wide range of agencies contact ARG as inbound external referring agencies. Community and government agencies are most commonly submitting referrals to ARG making up 88% of inbound external referrals.

- Inbound referrals are coming from firefighters across all of the MFB districts. The variability of the number of inbound referrals from firefighters across the districts could be representative of the number of at-risk individuals with whom firefighters encounter.

- The years 2013 - 2014 experienced the largest increase of inbound referrals from firefighters; this could be due to the installation of the HNS and the promotion of the RRR process by Operational Commanders.

- The provision of information about the RRR process to firefighter from Operations Commanders appears to have been more effective than promotion by ARG. However this analysis is inconclusive.

7.1.4 Outbound Referrals

- The response by ARG to inbound referrals is made on a case by case basis. Responses usually include more than one action.

- Outbound referrals are made to agencies funded to address the identified risk as part of their program and/or legislative/regulatory role. ARG engages the program and/or agency most likely to assist and support the affected individual to deliver an improved safety outcome.

- More referrals are directed to local government authorities (LGAs) than any other type of agency. Referrals are made to a range of departments within LGAs. Outbound referrals to LGAs are most frequently made to the Local Laws and Aged and Disability departments.

7.2 Recommendations

We have composed a series of recommendations based on analysis of the RRR process. These recommendations are consistent with the strategic actions in both the MFB Plan 2015-2018, and the Community Resilience Strategic Plan 2015-2018.

7.2.1 RRR Process

This study identified that inbound referrals to ARG are increasing. The Community Resilience Strategic Action Plan 2015-2018 recognises that risks present in the community are not new, but they are converging and demand attention and action (CREM, 2015). The team recommends MFB Community Resilience department consider the following recommendations.

Initial Assessment

When referrals are received from internal or external stakeholders, ARG standard procedure is to check RRR data to identify if there has been prior engagement with the affected individual at that address. However, this is not the only organisational source of data available to establish a risk profile. The Emergency Response Information Catalogue (ERIC) contains a record of all incidents MFB has attended. In some referrals, ERIC is used to gain additional information. Making this part of standard procedure may provide increased insight into the risk of the occupant if there have been previous incidents at the same address.

Recommendation

- *That ARG establish an additional procedure to check ERIC to identify any previous incident over a 24 month (or other predetermined) period.*

EMR

MFB's role as a provider of Emergency Medical Response (EMR) has grown in recent years. This service is delivered within the state of Victoria's Health Services Framework and the recording of personal information about affected individuals is limited due to privacy and confidentiality provisions. As a result, inbound referrals from firefighters in relation to EMR incidents exclude most identifying information about the affected individual, including the name. In many cases, mitigating risk identified by firefighters may be critical to a person's ability to live safely and independently in their home following the incident. ARG has found that immediate engagement with allied health, and social workers post-incident result in the sharing of information to enable an appropriate action that can mitigate the individual's risk

without compromising privacy and confidentiality provisions. Engagement and follow-through with key stakeholders may identify an improved process for managing cases that are referred through EMR incidents.

Recommendation

- *ARG should explore this issue further and develop a briefing paper to engage key agencies in the identification and improvement of current practice at an interagency level regarding EMR cases.*

Data Management

Since its inception in 2007, the RRR process has developed and the number of inbound referrals has increased by an average of 53% each year. ARG is now facing complications in accessing data quickly and chronologically, identifying previous incidents and engagement, accessing supporting documents, identifying which agencies have been involved in each referral, and running regular reports and analyses. Currently, these activities are resource and time intensive, and unsustainable. The current system is over reliant on the personal knowledge of individuals within the department to provide a comprehensive understanding of specific referrals.

Recommendation

- *That ARG develop a business case for the purchase of an IT case management system to effectively manage RRR data and improve the accessibility and analysis.*

Effectiveness of Referrals

Certain risks are being referred to ARG at a greater rate than other risks. To ensure that the RRR process can provide evidence of emerging risks and trends, a case management system must be able to generate reports on the demographic profile and risks that are being identified through the RRR process. For example, RRR data could be used to estimate the percentage of population affected by hoarding and/ or squalor related issues.

Recommendation

- *That any case management system procured by ARG should have the ability to generate ad-hoc reports on referrals data to generate evidence of emerging trends, risks and other issues.*

7.2.2 Engagement

Inbound referrals come to ARG from two main channels: external and internal stakeholders. Internal stakeholders are firefighters who have responded to an incident where risk is present. External stakeholders include community care agencies and family, friends and neighbours of affected individuals. All these sources of inbound referrals are vital to the growth and success of the system.

Internal Stakeholders (firefighters)

The RRR process is used by firefighters to report ongoing risk identified at incidents. This practice acknowledges that firefighters are in a unique position to identify people experiencing risk, and illustrates the importance of their role in risk mitigation as well as the building of community resilience. Firefighter use of the RRR process has largely occurred outside of any formal training framework. While information sessions about the process have been delivered in some MFB districts, an integrated training model will promote the growth and success of the RRR process.

Recommendations

That ARG engage with the Organisational Learning and Development department to develop training for firefighters in relation to the RRR process. This would include:

- *Training on the RRR process as a component of MFB promotional courses. The priority of this training should be for Station Officer and Senior Station Officer, followed by Leading Firefighter.*
- *Information about the range of risk issues which can be referred via the RRR process.*
- *The development of information about the RRR process for skills maintenance training sessions to be delivered at station level.*
- *The inclusion of RRR information in the MFB Emergency Response Guidebook.*
- *The development of a periodic report for each district on RRR activities within the district.*
- *Review of the RRR form (including user feedback) to identify improvements through the inclusion of features such as drop down boxes to serve as prompts.*
- *Consideration of innovative training modules that include educational videos and practical identification of risk. These modules could be used as a refresher activity between scheduled trainings to promote confidence in making referrals.*

External Stakeholders

External stakeholders that refer risk to ARG include a range of stakeholders including government departments, agencies and program providers. This is a result of the engagement activities by ARG with these sectors through presentations, information sessions, forums, and stakeholder and network group meetings. In addition to supporting improved individual safety outcomes, this activity also provides an opportunity to promote the education of issues like fire and other hazards, and maximises the potential of this information being part of a holistic practice in relation to people at risk.

Recommendation

- *That ARG continues to engage external stakeholders in a variety of ways to raise awareness about fire safety and other life safety issues for at-risk groups and to promote the use of the RRR process by external stakeholders.*

- *Create a pamphlet to distribute at ARG presentations including contact information and summarising salient points in the process.*

7.2.3 AIRS Database

The Australian Incident Reporting System (AIRS) is the national system used to report fire and emergency service responses to fires and other incidents. Data collected in AIRS has a strong focus on the structural and logistical aspects of the incident. AIRS does not require emergency services to identify information about the people who experience a fire or other emergency.

Recommendation

- *That MFB advocate for the AIRS database be significantly modernised to record demographic information. Important information about who is more at risk of having a fire or other emergency should be collected on a national scale. A more comprehensive database could provide information about potential residential risks.*

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Appendix A: Interview with Marc Gautreau

Clinical Associate Professor of Emergency Medicine, UMASS, Massachusetts, USA

What types of services do you provide?

We respond to all 911 calls for medical emergencies in Worcester and Shrewsbury. In addition, we provide tactical EMS medical support to the Massachusetts State Police.

What kinds of training do you have to participate in to become EMS personnel?

Paramedics complete about 1000 hours of training (after a ~200 hour EMT basic course). In addition there is extensive ongoing training they must complete annually to maintain their certification.

Does UMass EMS often work with other emergency response services such as the fire department?

Yes, both the fire department and police department frequently respond to medical calls to provide security or additional manpower. The fire department also responds as a "first responder" since they can often arrive at high priority calls earlier. There are about 3-4 times as many fire trucks as ambulances in the city.

How does this inter-agency cooperation work? How do they contact you if they need further assistance?

Often, the fire department and EMS ambulances communicate on a shred frequency. The EMS dispatchers (located at UMass Hospital) and the fire/ police dispatchers (located at police headquarters) can also communicate directly by phone or by radio.

Is there a referral system in place? If so, what is the general protocol?

Not sure what you mean by a referral system. If you are asking if we refer callers to alternatives to the emergency department, the answer is currently no. Such a system is being contemplated, though. It is not clear the form it will take, as it is likely several years away.

When responding to an incident, what are some indicators that additional resources are needed to provide aid to an individual?

Dispatchers are specially trained to ask a series of questions regarding the patient's status in order to determine the severity of the call. This system, called Emergency Medical Dispatch or EMD uses a set of protocols to determine the resources needed. In addition, information from the caller about number or severity of injuries in a car accident, for example, or updates from first arriving units such as police can provide indicators of the need for additional resources.

What is the criteria you use to determine whether or not an incident requires attention from an outside agency?

Some include severity of patient (are they breathing, conscious, etc. Distance from responding resources may also play a factor, so that if there is a close-by fore company and

the ambulance is coming from across the city, the fire department may respond for initial stabilization.

What agencies (if any) do you contact the most often? This can include any of the social service agencies available

Typically, we work with the local police and fire services. If we run out of ambulances, we do have contracts with private ambulance services in the city that can back us up. We do work with some of the local social service agencies in certain situations, such as elders in need of services, but usually this is done in the emergency department.

What is the standard procedure if an incident involves an individual with mental illness or disability?

The paramedics do have a lot of training in managing these situations, and are generally very good at de-escalating behavioural emergencies. Anyone who needs primarily a mental health evaluation is still brought to the emergency department, because by law they are required to get a medical screening exam. This is done to make sure there are no medical issues masquerading as psychiatric issues, such as encephalitis, and also to address any ongoing medical issues that might interfere with or need to be considered in the course of their psychiatric care.

Appendix B: Interview with Jason Rhodes
Chief of the Center for Emergency Medical Services, Rhode Island, USA

What types of services does the EMS department provide?
Here in the State of Rhode Island municipally managed EMS, as a function, often exists as part of a fire department. In some instances, EMS is operated as a separate agency and in one instance, it is a function of the local police department. RI area private EMS mostly performs non-emergency transports and inter-facility transfers. However, the licensing requirements of municipal and private EMS are identical and the state does not view any separation in the services private vs. municipal services provide.

What is the rigor of training that one must participate in to become an EMS personnel?
The State of Rhode Island requires all EMS training to occur at an accredited educational institution and provide a curriculum which is seated on the National EMS Educational Standard produced by the National Highway Transportation Safety Administration (NHTSA). The standard may be accessed at this link: http://www.ems.gov/pdf/811077a.pdf

Does the department often work with other emergency response services such as fire and police?
Since September 11th, it has been realized that the individual functions of each response agency, inclusive of Emergency Medical Services, does not work well in a vacuum or exclusively in the functions we consider to attribute to that particular agency. Rather, working with partner public safety agencies to have instances of cross training and cross understanding of department roles and responsibilities.

How does this inter-agency cooperation work? How are departments contacted if further assistance is needed?
Since September 11th and the requirements included within the Homeland Security President Directive (HSPD) series (found here at: https://www.dhs.gov/presidential-directives) have required all emergency response agencies work in a more collaborative manner especially in terms of on-scene management, effective and efficient deployment of resources and inter-operable communications.

When responding to an incident, what are some indicators that additional resources are needed to provide aid to an individual?
Some of the most obvious indicators that additional resources are needed in terms of EMS include the number of patients upon arrival, the condition of a vehicle at an accident scene, or when it is determined that additional human resources are needed to appropriately handle the complexity of an injured or ill patient.

Indicators that additional public safety resources which are beyond the scope of EMS include arriving to find a disturbance, fire, hazardous materials incident or incident which requires technical rescue.

What criteria does the department use to determine whether or not an incident requires attention from an outside agency?

A scene size-up is completed and the size-up helps to determine the facts of the incident and whether or not additional resources are needed. The size up includes the following assessments: (1) gather facts; (2) assess and communicate the damage; (3) consider probabilities; (4) assess your own situation; (5) establish priorities; (6) make decisions; (7) develop plans of action; (8) take action; (9) evaluate progress.

What agencies (if any) does the department contact the most often? This can include other emergency services or social service agencies available.

I would suggest that EMS to hospital contact occurs the most. As more services adopt mobile integrated health and community paramedicine models, these services will be interacting more frequently with primary care physicians.

For more information on mobile integrated health, please visit:

http://www.ncsl.org/research/health/expanding-the-primary-care-role-of-first-responder.aspx

Is there a referral system in place to aid residents in being connected with applicable social service agencies?

As of today, this service is limited and often times hinge on emergency services relative to patient self-neglect or abuse. In Rhode Island, we are working towards developing alternatives to hospital emergency departments as an endpoint for those persons suffering from alcoholism. More social service interaction will emerge as more services engage in community paramedicine/mobile integrated health models.

If there is a referral system currently in place, what is the general protocol applying to it?

Currently, wide spectrum social service referrals are not embedded within the EMS function.

What is the standard procedure for an incident involving an individual with a mental illness or disability?

Presently, we do not have a protocol or standing order for mental illness. Patients are treated according to recognized standards. If further information is needed EMS personnel can access on-line medical control for assistance.

Do you have any other information/anecdotes that you believe would be beneficial to us?

The trade publication "EMS World" has a section for "street stories" which have anecdotes from across the country. You can access that section of the on-line magazine at:

http://www.emsworld.com/article/10843578/real-life-ems-emt-paramedic-stories

Appendix C: RRR Access Database Screenshot

Figure A26: Access Database- Primary Info Tab

Figure A27: Access Database- Ongoing Risk Internal Tab

Figure A28: Access Database- Actions Tab

Appendix D: Sample HNS Form

Figure A29: Sample HNS Form

Appendix E: Clutter Image Rating Scale (CIRS)

Figure A30: Clutter Image Rating Scale- Kitchen

Figure 9 Clutter Image Rating Scale (CIRS) Page 2 of 3

Figure A31: Clutter Image Rating Scale- Bedroom

Figure 9 Clutter Image Rating Scale (CIRS)

Figure A32: Clutter Image Rating Scale- Living Room

Appendix F: Occupant Profile

Appendix F1: Occupant Profile Unknown Percentages

*Table A3: Percent of Unknown Occupant Profile Information (N=802)*

Occupant Profile: Unknowns by Percentage						
Category	Age	Gender	Tenure	Property Type	House Profile	Total
Internal Referrals	45.12%	23.90%	40.49%	17.56%	62.93%	410
External Referrals	77.55%	61.99%	65.82%	32.40%	82.91%	392

Appendix F2: Occupant Profile Unknowns by Year

*Table A4: Total Unknown Occupant Profile Information by Year (N=802)*

| Occupant Profile: Total Unknowns by Year						
Year	Age	Gender	Tenure	Property Type	House Profile	Total
2007	33.33%	50.00%	66.67%	50.00%	33.33%	6
2008	60.00%	10.00%	50.00%	20.00%	60.00%	10
2009	36.84%	15.79%	52.63%	26.32%	36.84%	19
2010	57.14%	14.29%	42.86%	21.43%	39.29%	28
2011	60.00%	16.67%	51.67%	26.67%	51.67%	60
2012	52.00%	16.00%	44.00%	16.00%	46.00%	50
2013	61.54%	44.23%	44.87%	22.44%	77.56%	156
2014	60.71%	45.41%	51.53%	23.47%	79.59%	196
2015	66.97%	57.01%	50.68%	28.51%	84.62%	221
2016	58.93%	50.00%	62.50%	26.79%	69.64%	56

Appendix F3: Disability
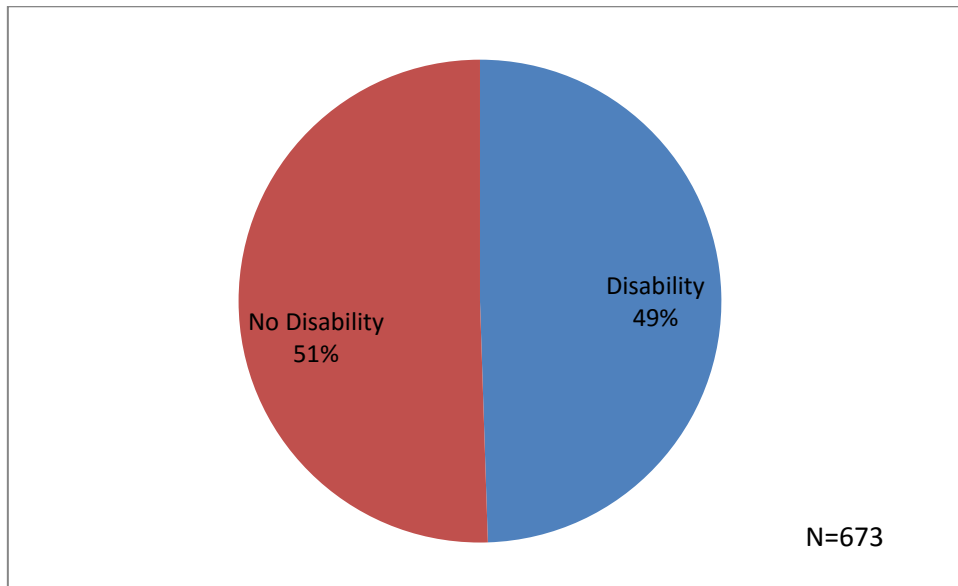
Figure A33: Disability Profile (N=673)

Appendix F4: Physical vs. Mental Disability
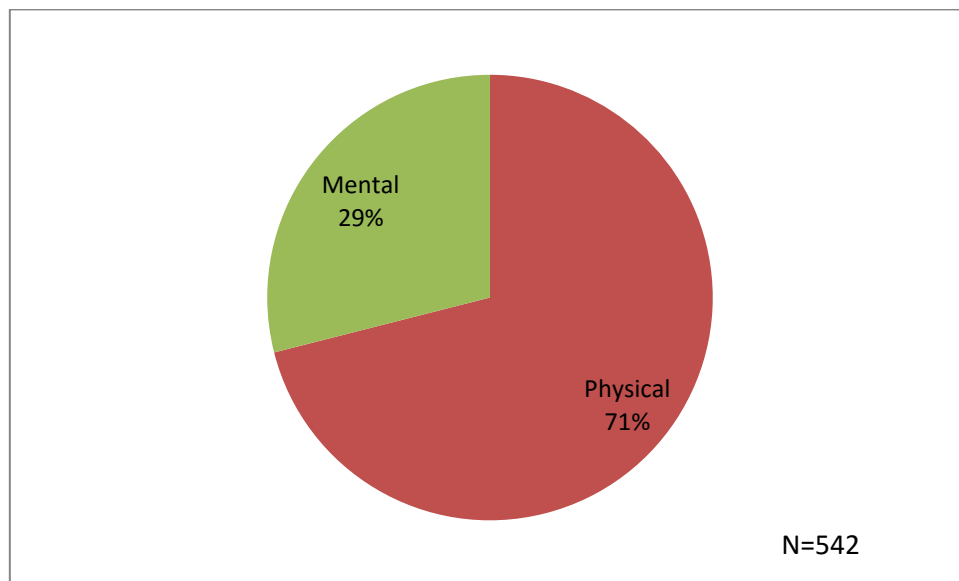
Figure A34: Breakdown of Physical vs. Mental Disability (N=542)

Appendix F5: Breakdown of Gender
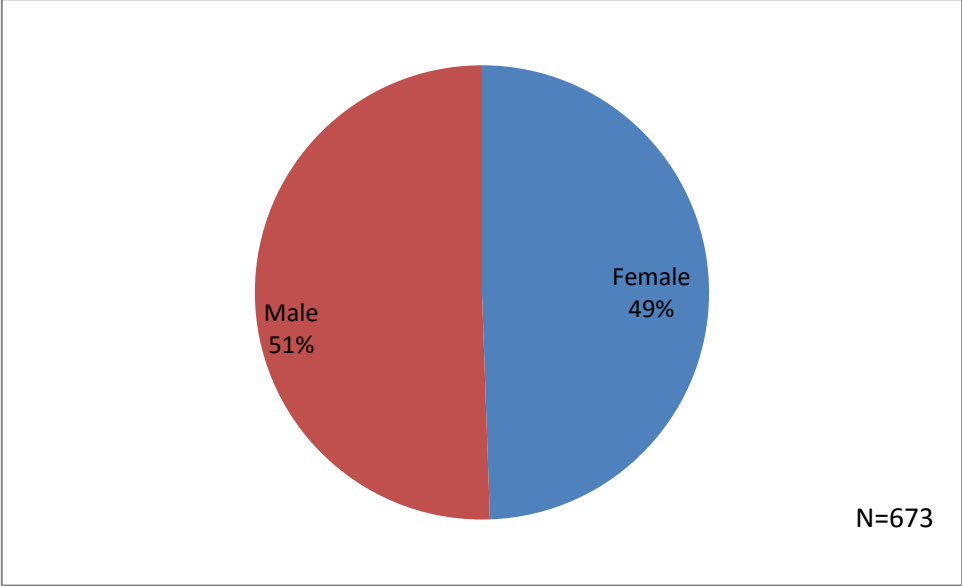
*Figure A35: Breakdown of Gender (N=673)*

Appendix G: Table of all Risk Factors- Firefighters vs. External (Risk Profile)

Table A5: All Identified Risk Factors (Firefighter vs. External Referrals) (N=2894)

Firefighters			External		
Risk Feature	**No. referred**	**%age**	**Risk Feature**	**No. referred**	**%age**
Access & Egress	265	15.54%	Access & Egress	383	32.21%
Hoarding Internal	220	12.90%	Hoarding Internal	375	31.54%
Mental Health	121	7.10%	Hoarding External	58	4.88%
High Fire Risk Behaviour	119	6.98%	Age Related	57	4.79%
Lack of insight / capacity	115	6.74%	Financial Disadvantage	48	4.04%
Age Related	113	6.63%	Living Alone	42	3.53%
Hoarding External	113	6.63%	Mental Health	36	3.03%
Living Alone	109	6.39%	Lack of insight / capacity	34	2.86%
Financial Disadvantage	72	4.22%	Disability: Mobility	25	2.10%
No Working Smoke Alarm	70	4.11%	No Working Smoke Alarm	22	1.85%
Hoarding with squalor	49	2.87%	Social Isolation	19	1.60%
Disability: Mobility	47	2.76%	High Fire Risk Behaviour	16	1.35%
Affected by drugs, alcohol and/or other medication	37	2.17%	Hoarding with squalor	15	1.26%
Previous Incidents	36	2.11%	Chronic Illness	11	0.93%
Social Isolation	33	1.94%	Building Structurally Compromised	9	0.76%
Disability: Sensory Loss - Vision, Hearing	32	1.88%	Intellectual	9	0.76%
Chronic Illness	30	1.76%	Disability: Sensory Loss - Vision, Hearing	7	0.59%
Communication (CALD etc)	25	1.47%	Abandoned House	6	0.50%
Building Structurally Compromised	16	0.94%	Communication (CALD etc.)	6	0.50%
Building Procedures	13	0.76%	Child(ren) at Risk	4	0.34%
Illegal rooming house / overcrowding	13	0.76%	Medical Oxygen in place	2	0.17%
Intellectual	13	0.76%	Previous Incidents	2	0.17%
Child(ren) at Risk	13	0.76%	Illegal rooming house / overcrowding	1	0.08%
Abandoned House	8	0.47%	Affected by drugs, alcohol and/or other medication	1	0.08%
False Alarm	8	0.47%	Squalor no hoarding	1	0.08%
Squalor no hoarding	7	0.41%	ASE	0	0.00%
ASE	5	0.29%	Building Procedures	0	0.00%
EWIS	2	0.12%	EWIS	0	0.00%
Medical Oxygen in place	1	0.06%	False Alarm	0	0.00%

Appendix H: Department of Human Services Areas (Victoria, Australia)
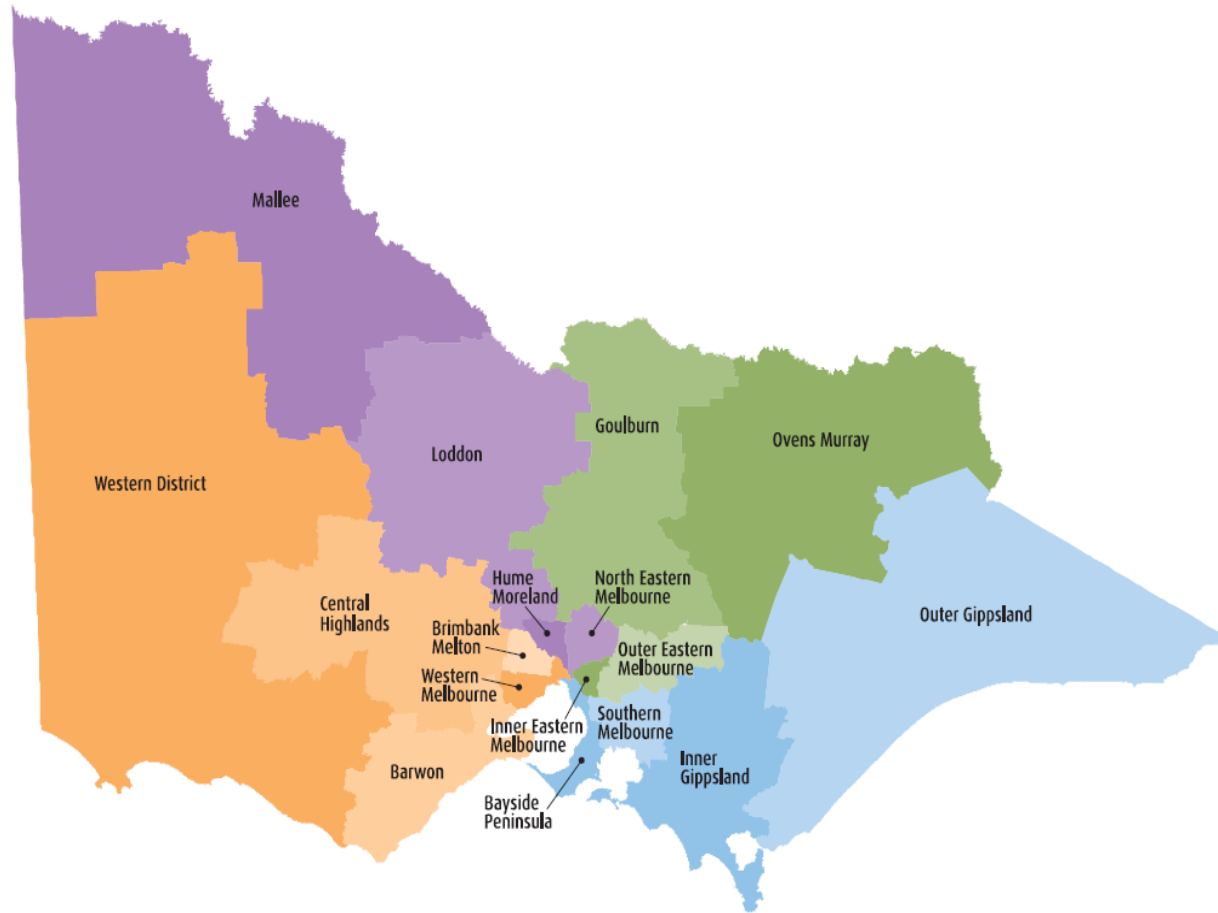
Figure A36: Map of Department of Human Services Areas in Victoria, Australia

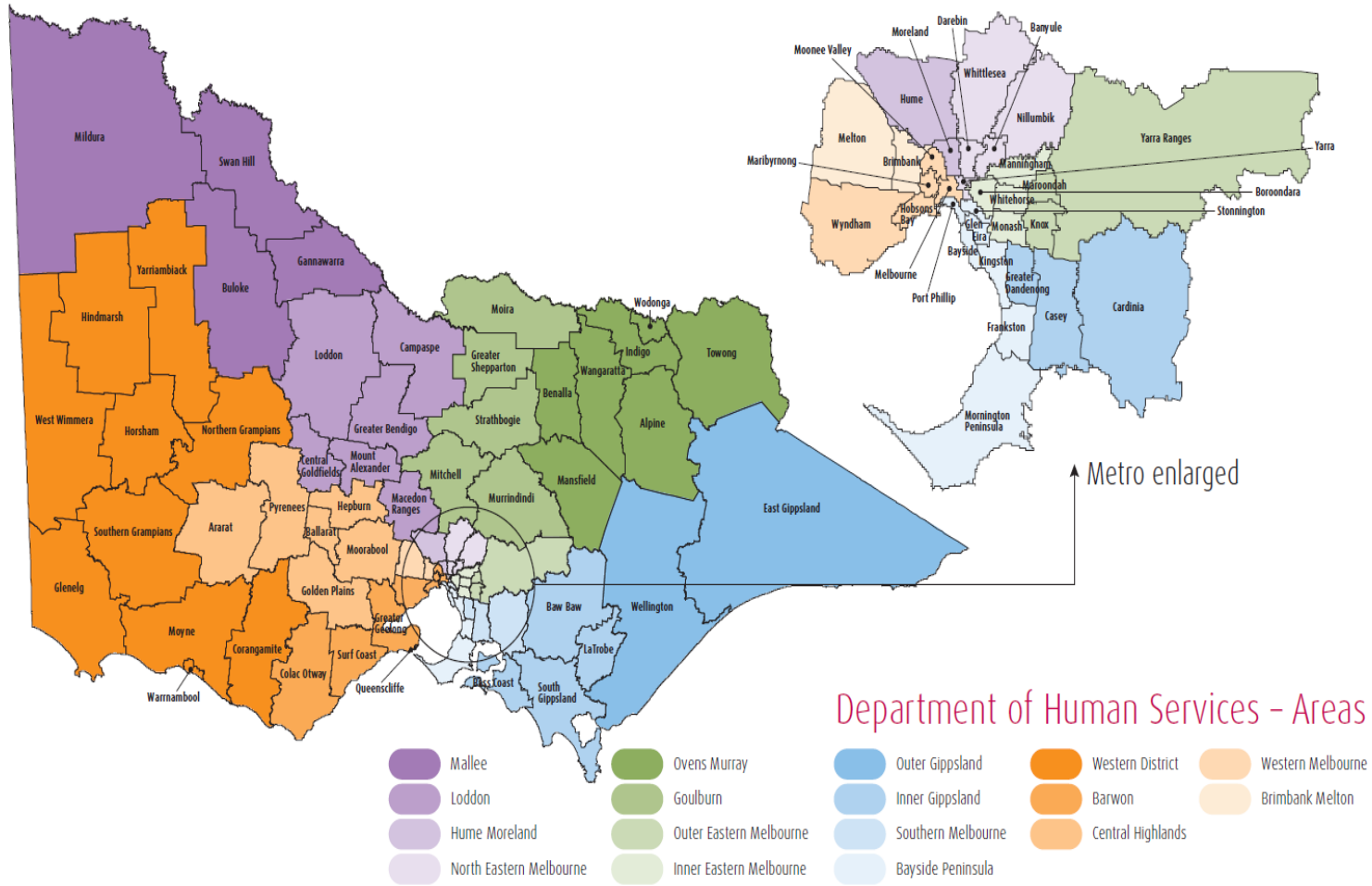**Appendix I: Department of Human Services- Local Government Areas (Victoria, Australia)**

Figure A37: Map of Department of Human Services- Local Government Areas in Victoria, Australia

Appendix J: RRR Presentations by ARG

Appendix J1: Presentations in Eastern District

Table A6: Presentations in MFB Eastern District

RRR Presentation Locations in Eastern District	Dates of RRR Presentations
Nunawading	9/07/2014 11/07/2014 15/07/2014
Ringwood	9/07/2014 11/07/2014 15/07/2014 21/07/2014
Burwood	29/07/2014 18/08/2014
Oakleigh	28/04/2014 29/07/2014 31/07/2014 5/08/2014
Templestowe	31/07/2014 5/08/2014 18/08/2014
Total Number of RRR Presentations:	16 at combined drill
Total Number of Platoons Reached:	44

Appendix J2: Presentations in Western District

Table A7: Presentations in MFB Western Districts

RRR Presentation Locations in Western District	Dates of RRR Presentations
Laverton	20/10/2015 27/10/2015 29/09/2015
St. Albans	20/10/2015 21/09/2015
Newport	25/11/2015 07/10/2015
Deer Park	18/11/2015 21/09/2015 07/01/2016
Sunshine	23/09/2015 28/09/2015
Spotswood	23/09/2015 21/09/2015
Altona	28/09/2015 27/10/2015 18/11/2015
Footscray	21/09/2015 25/11/2015 07/01/2016
Taylor Lakes	21/09/2015 26/11/2015
North Laverton	23/09/2015 17/10/2015 01/12/2015
Ascot Vale	17/02/2015 02/12/2015 03/12/2015 15/01/2016
Keilor	23/09/2015 29/09/2015
Western District Office	15/01/2012
Total Number of RRR Presentations	33
Total Number of Platoons Reached	33