



Municipal Fire Management Plan

2015-2018



This iteration of the Knox Municipal Fire Management Plan was finalised in September 2015.

© Copyright: Knox Municipal Emergency Management Planning Committee

AUTHORISATION

This Municipal Fire Management Plan was adopted as the second iteration of the Knox Municipal Fire Management Plan, in partnership with the committee and Council at the Council meeting on 22 September 2015 listed below.

Signed: SIGNATURE ON FILE Date: 06/10/15

Steven Dickson
Chair of the
Knox Municipal Emergency Management Planning Committee

Signed: SIGNATURE ON FILE Date: 06/10/15

Cr Peter Lockwood
Mayor
Knox City Council

CONTENTS

ACRONYMS	4
1. Introduction	5
2. Vision, mission & objectives	10
2.1 Vision.....	10
2.2 Mission.....	10
2.3 Objectives.....	10
2.4 Alignment with regional objectives	10
3. Engagement and communication.....	11
3.1 Community and stakeholder engagement plan.....	11
4. Summary of the environmental scan and assumptions for the future.....	13
5. Risk assessment	16
5.1 Risk assessment process	16
5.2 Victorian Fire Risk Register - Bushfire	17
5.3 Victorian Built Environment Risk Assessment Process	17
5.4 Bushfire Management Overlay and Bushfire Prone Area	17
5.5 Risk assessment.....	21
5.6 Fire risk assessment matrix.....	26
5.7 High risk treatment plan	36
5.8 Shelter options.....	39
6 Action Plan.....	40
7 Monitor and improve	43
7.1 Monitoring and evaluation.....	43
7.2 Review	43
7.3 Reporting.....	43
7.4 Continuous improvement.....	43
ATTACHMENTS	44

ACRONYMS

BFM	Bushland Fire Management
BMO	Bushfire Management Overlay
BPA	Bushfire Prone Area
CFA	Country Fire Authority
CFA Act	Country Fire Authority Act (Vic) 1958
DHHS	Department of Health and Human Services
DTPLI	Department of Transport, Planning and Local Infrastructure
DELWP	Department of Environment, Land, Water, and Planning
EMMV	Emergency Management Manual Victoria
ESV	Essential Services Victoria
HAZMAT	Hazardous Materials
IAP2	International Association for Public Participation Australasia
IFMP	Integrated Fire Management Planning
KCC	Knox City Council
KPI	Key Performance Indicator
MEMP	Municipal Emergency Management Plan
MEMPC	Municipal Emergency Management Planning Committee
MERO	Municipal Emergency Resource Officer
MFPO	Municipal Fire Prevention Officer
MFPC	Municipal Fire Prevention Committee
MFMP	Municipal Fire Management Plan
ParksVic	Parks Victoria
PPRR	Prevention, Preparedness, Response, Recovery
RSFMPC	Regional Strategic Fire Management Planning Committee
SFMP	State Fire Management Planning Committee
SFP	Special Fire Protection
SOP	Standard Operating Procedure
SWOT	Strengths, Weaknesses Opportunities and Threats
TFB	Total Fire Ban
V-BERAP	Victorian Built Environment Risk Assessment Process
VFRR-B	Victoria Fire Risk Register – Bushfire
VICPOL	Victoria Police
VICSES	Victoria State Emergency Service

1. Introduction

Fire management planning in the State of Victoria is undertaken to ensure adequate management of all aspects of fires from prevention through to response and recovery. It brings together a range of agencies and organisations to discuss, plan and manage fire with the community. It aims to provide quality outcomes for communities at risk.

This plan, prepared by a working group of the Knox Municipal Emergency Management Planning Committee (MEMPC), reflects the shared responsibilities of government, fire agencies and communities. It demonstrates a collaborative approach between responsible agencies and covers both public and private lands, and is a 3 year plan to be reviewed on an annual basis.

The plan is a written presentation of the dynamic and continually evolving fire planning process undertaken in the Knox municipal area.

The Knox municipal area of the Eastern Metropolitan region is located in the State of Victoria, Australia. Within this there are a diverse range of environments vulnerable to all types of fire hazard. The State Fire Management Strategy 2009, along with the Emergency Management Manual Victoria (EMMV), provides direction for the development and implementation of structures, systems, processes and products that improve fire management planning in Victoria.

Approaches to fire management are framed by the assessment of risk. This includes an analysis of the fire risks and identification of options for positive change. It places greater emphasis on addressing underlying causes and seeking long-term, sustainable solutions that incorporate the four essential elements of emergency management of planning, preparedness, response and recovery.

Consultation, participation and engagement are essential to enable an integrated approach to fire management. This plan documents how agencies involved in fire management within the Knox municipal area actively participate in this process.

Municipal fire management planning

The Municipal Emergency Management Planning Committee (MEMPC) established a working group to determine procedures subject to the guidelines provided in the EMMV.

The working group replaced the existing Municipal Fire Prevention Committee (MFPC) and does not alter existing requirements for municipal councils to make statutory appointments of a Municipal Emergency Resource Officer (MERO) and a Municipal Fire Prevention Officer (MFPO).

The MEMPC are responsible for integrated planning at the municipal and local level. Members of these committees work collaboratively, meet at appropriate intervals, share planning information and produce the Municipal Fire Management Plan (MFMP).

The fire management planning process is managed and supported with the technical expertise of the relevant fire services. The working group is responsible for writing the MFMP, ensuring implementation of the actions detailed in the plan, and monitoring the effectiveness of those actions.

The members of the Knox working group review and report fire management planning actions to the MEMPC who, in turn, report to the Knox City Council (KCC) and other stakeholder agencies with accountabilities in the MFMPs, and raise matters to the Eastern Regional Strategic Fire Management Planning Committee (RSFMPC) when required.

Agencies working together with the community

The Knox MFMP brings together all agencies with legislative responsibility for fire management to collectively work with the community to effectively and efficiently prepare for, respond to and recover from fire. The Knox MFMP assesses bushfire, chemical incidents and structural fire and will be further investigated and developed as the risk assessment tools for these areas are developed and reach maturity.

Key agencies involved in the planning process include:

Agency	Responsibilities
Country Fire Authority (CFA)	Emergency service agency that prevents and responds to bushfires, structural fires, chemical fires, road accidents, rescues and other emergencies.
Department of Environment, Land, Water and Planning (DELWP)	Responsible for fire suppression and preparedness on public land in coordination with Parks Victoria.
Department of Health & Human Services (DHHS)	Provides recovery advice, information and assistance to communities and municipalities affected by an emergency event which endangers or threatens to endanger the safety or health of any person in Victoria.
Department of Transport, Planning & Local Infrastructure (DTPLI)	Leads and supports development of liveable communities, including improving urban planning and development, particularly in outer suburbs and growth areas.
Knox City Council - MERO	Responsible for coordinating Council's resources in response to community emergencies, as required under the Victorian Emergency Management Act 1986.
Knox City Council - MFPO	Under the Country Fire Authority Act 1958 (CFA Act) this role is required to be appointed by Council to undertake and regularly review council's fire prevention planning and plans.
Knox City Council - Strategic Planning Officer	This role prepares, reviews and participates in the development of land use planning and development strategies, policies and projects.
Metro Trains	Metro Trains operate Melbourne's train network. The Metro train network has 15 lines and 212 train stations, servicing more than 200 million customer journeys per year.
Parks Victoria (ParksVic)	Responsible for managing and expanding Victoria's parks networks.
SP AusNet	Transports high voltage electricity from where it is generated into electricity distribution networks. It is also a gas distribution network.
VicRoads	Manages the Victorian arterial road network and its use as part of the overall transport system.
Victoria Police (VICPOL)	VICPOL provides a 24-hour police service to the Victorian community. VICPOL is also responsible for the effective coordination of resources or services in response to emergencies and for: relocation/evacuation; registration of evacuees – in conjunction with the Australian Red Cross; and provision of media coordination.
Victoria State Emergency Service (VICSES)	Prepares and responds to floods, severe storms, earthquakes, road crash rescue and conducts search and rescue operations in bush and alpine areas.
Vic Track	Vic Track is the owner of Victorian railway land and infrastructure which is leased to public transport operators

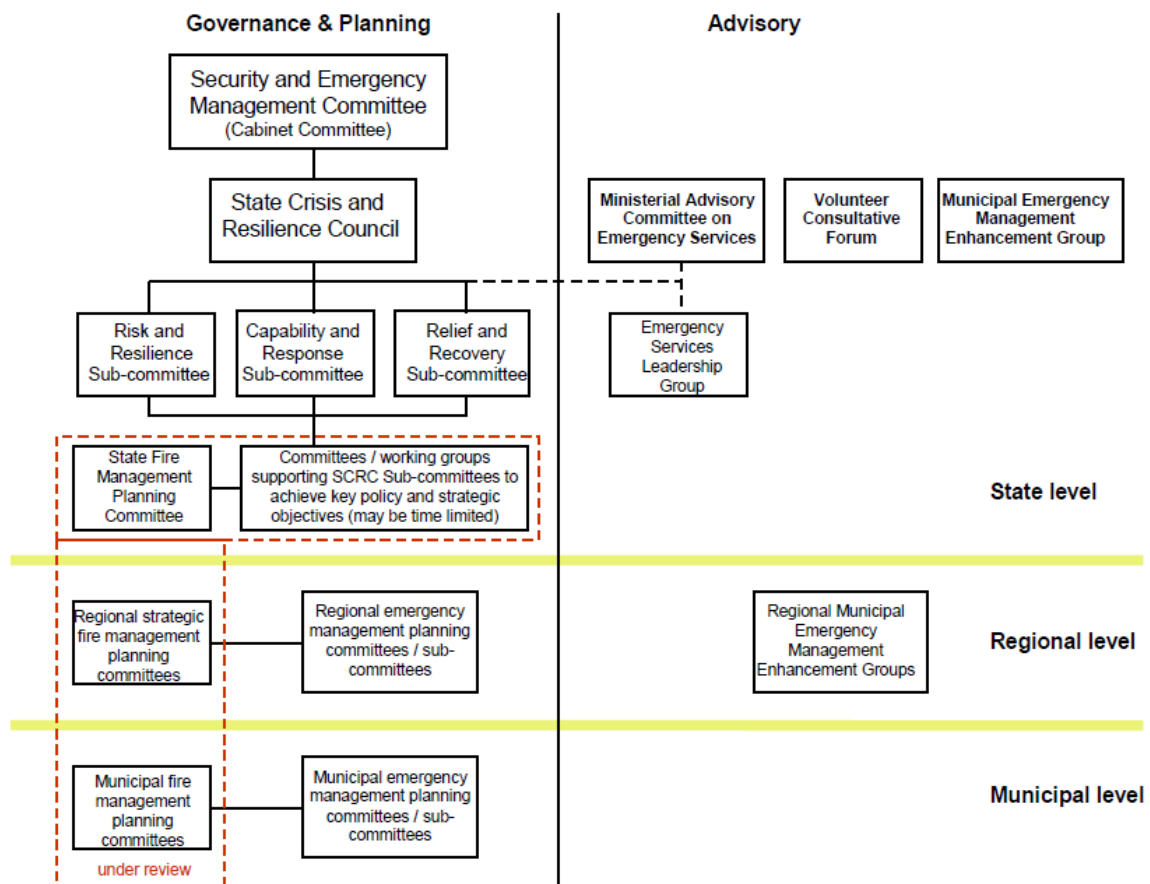
Knox Municipal Fire Management Plan

The Knox MFMP has been prepared and will be maintained as a sub-plan to the Municipal Emergency Management Plan (MEMP) to ensure that the linkages across fire prevention, preparedness, response and recovery programs are consistent and holistic. The MFMP is risk-based, having regard for the social, economic, built and natural environment aspects of fire, and will prove to be a useful tool for agencies and personnel involved in fire management planning activities. The MFMP also contains appropriate reference to other applications of fire, including ecological and cultural.

Legislative arrangements for the operation of fire management planning are detailed in Part 6a of the EMMV (<http://www.emv.vic.gov.au/policies/emmv>). The Knox Municipal Fire Management Planning Committee resolved that the committee be dissolved in July 2014 with all decisions requiring formal process to be managed by the MEMPC.

An overview of the State's emergency management and planning committee structure is presented in Figure 1.

Figure 1: An overview of the State's emergency management and planning committee structure (EMMV, March 2015 p. 6-2)



The planning process

The Knox MFMP documents the process undertaken and presents the outcomes of this collaborative process. Requirements in accordance with the CFA Act for municipal fire prevention planning will continue to be met through this new process. It follows a continuous planning process.

The planning process can be seen as a series of steps that result in the development, maintenance and refinement of the MFMP. Each of the stages guide the planning process that Knox has followed and will continue to do so into the future. The community and organisational engagement process follows the planning cycle (Figure 2) and is documented in the following sections of this document.

Figure 2: Emergency management planning process (EMMV, January 2011, p. 6-3)



The following table outlines the planning process at regional, municipal and local levels.

Table 1: Regional, municipal and community planning contexts (adapted from IFMP Guidelines Table 1 p. 10)

Governance	Regional Context	Municipal Context	Community Context
Governance	Strategic	Operational	Consultative
Timeframe	10-year planning cycle	3-year planning cycle	Annual planning cycle
Geographic coverage	Large areas that cross many ownership, administrative and management boundaries	Single municipality	Identified town and surrounding community
Stakeholder and partner interests	State, regional and municipal	Regional, community and local level	Community and local level
Planning environment	Broader landscape land management agencies, government, utility, entitles and landholders likely to have management plans	Municipal area or district; business and property owners that are less likely to have formal management plans	Municipal area or district; business and property owners that are less likely to have formal management plans
Size and scale	Organisations with large resource and asset bases, with application across whole region; delegated authorities	Business and small landholders, such as farmers and residents with less delegation and resource capacity	Business and small landholders, such as farmers and residents
Stakeholder decision-making processes	Part of the regional (resource allocation)	Regional and/or local (program delivery)	Community (consultation & engagement)
Local plans	Part of the region	Part of the municipality	Part of the community
Primary plan linkages and integration	Links upwards to the state strategy and is informed by Municipal Fire Management Plans in the region; no state or municipal planning duplication	Provides input in to, and is developed with reference to, Regional Strategic Fire Management Plan; no state or regional planning duplication	Provides input in to, and is developed with reference to, Municipal Fire Management Plan; no state, regional or municipal planning duplication
Data and information	National, state and regional	Regional and municipal	Community

2. Vision, mission & objectives

2.1 Vision

Active partnerships with our community, emergency services and local government, working together; to reduce the destructive impact of fire on communities and the environment and strengthen community resilience to the effects of fire by providing a greater understanding of fire management planning within the community and the environment.

2.2 Mission

Agencies of Knox working together with communities to reduce the impact of fire. This will be achieved by the objectives listed in Section 2.3 of this document.

2.3 Objectives

- Lead fire management planning across the Knox municipal area in prevention, preparedness, response and recovery (PPRR);
- Develop fire management plans based on shared knowledge;
- Work with the community to manage fire;
- Deliver outcomes that address fire risk in the local environment regardless of boundaries;
- Identify significant natural, social, built and economic environments at risk within the Knox municipal area and in consideration of neighbouring communities;
- Ensure effective community engagement; and
- Commit to continuous improvement.

For each of these objectives there is a goal set and an action defined in order to achieve these goals. This information is presented in the action plan located in section 5.2 of this document.

2.4 Alignment with regional objectives

The development of the vision and mission for the Knox MFMP were guided by the Regional Strategic Fire Management Plan vision and mission. The Regional vision aligns with the State vision:

Fire management in the Eastern Metropolitan region that delivers:

- active participation of community, the sector and government working together in fire management planning to reduce the destructive impact of fire on communities and the environment;
- communities that are resilient to the effects of fire;
- greater understanding of the fire sector within the community; and
- healthy natural, social, built and economic environments.

Eastern Metropolitan Region Strategic Fire Management Plan mission:

Agencies of the Eastern Metropolitan region working together with communities to reduce the impact of unplanned fire.

The region will achieve this by the following key themes:

- Committee becomes the driver (lead body) for fire management planning across the region;
- Building and using knowledge;
- Working with the community to manage fire;
- Delivering cross tenure outcomes that address fire risk at a landscape and regional level;
- Effective communications and marketing;
- Continuous improvement; and
- Identifying and treating significant natural, social, built and economic environments at risk.

3. Engagement and communication

Community participation is an integral part of risk management. The engagement plan used identifies key stakeholders and the level, method and timing of stakeholder engagement for this Plan, and has been developed using International Association for Public Participation Australasia (IAP2). The engagement levels within IAP2 are as follows:

Inform

Provide appropriate detailed and accurate information to assist stakeholders in developing a shared understanding of the complexity of issues, alternatives and possible solutions.

Consult

Utilise stakeholder expertise and diversity to obtain input into analysis, alternatives and develop key decisions.

Involve

Work directly with the suite of key stakeholders throughout the various processes to ensure key issues and intent are understood and considered.

Collaborate

Partner with key stakeholders in each aspect of decision making. This includes the development of alternatives, and the identification of contributions and priority actions with a clear understanding of the responsibilities of each stakeholder.

Empower

Foster and promote transparent and accountable processes that allow each stakeholder organisation to empower themselves through key actions and the implementation of responsibilities (IAP2, 2011).

3.1 Community and stakeholder engagement plan

Objective & commitment

Objective	Commitment
To gather local knowledge, develop community ownership and responsibility for fire management planning, educate the community to build fire management planning skills and understanding.	To better integrate the management of fire and increase the safety of the Knox communities.

The key stakeholders that were identified as part of this planning include key representation from agencies and organisations, which individually represent the community through their own engagement strategies.

One of the key gaps identified as part of this planning process is how Council engages with its community. The Knox MEMPC has committed to undertake coordinated multi-agency engagement practices over the next twelve months in order to develop a more integrated approach and community involvement.

Engagement Process

Stakeholder	Details	Level of Engagement	When
Knox community	Broader Knox community	Inform & collaborate	Ongoing
Knox MEMPC	Knox MEMPC established under the Emergency Management Act (1986), to conduct emergency management planning.	Empower	Endorsement and ongoing
	Knox MEMPC established to ensure fire management planning across all agencies at a local level.	Empower	Ongoing
Knox City Council	Endorsement role	Empower	Endorsement of the Knox MFMP
Eastern Metropolitan RSFMP	Eastern Metropolitan RSFMP established to ensure fire management planning across all agencies at a regional level.	Inform	Quarterly
Relevant Knox City Council staff	Strategic planning, MFPO, land managers, environment	Collaborate	As required
Yarra Ranges Shire Council	Neighbouring Council with a shared risk	Consult	As required

4. Summary of the environmental scan and assumptions for the future

Description of the Knox municipal area

The Knox municipal area is located 25 kilometres east of the Melbourne Central Business District. The district boasts a green, leafy image extending to the foothills of the picturesque Dandenong Ranges. Knox municipal area is one of the most populous and diverse municipalities in Victoria, with more than 154,000 residents living in eleven suburbs.

Aerial view of Knox municipal area and surrounding municipalities



Location and land tenure

The Knox municipal area is located at the foothills of the Dandenong Ranges and includes the geographic area known as the City of Knox. This area is 114 square kilometres and includes predominant land tenures of Parks Victoria, Knox City Council and private land & property owners. It is also supported by eight local CFA Brigades and borders the Metropolitan Fire District.

Surrounded by major parks, with five creeks running through the Knox municipal area, Knox celebrates, and protects, its' environment. It has a strong and growing business, educational and industrial life, and is located close to growing markets and transport hubs.

The City of Knox is a major hub of cultural, commercial, business and innovative activity in the eastern suburbs of Victoria's capital city. It is the gateway to both a major growth area in Melbourne and the urban-rural fringe.

Population and demographic information

The population of the Knox municipal area is approximately 154,000 spread over 114 square kilometres and 11 suburbs. Suburbs include Bayswater, Boronia, Ferntree Gully, Knoxfield, Lysterfield, Rowville, Scoresby, The Basin, Upper Ferntree Gully, Wantirna and Wantirna South.

Age structure

Table 2 profiles the City of Knox population from the 2011 census data, and shows the highest age group of people living within the city's boundaries at 2011 was the 45 to 54 year age group.

Table 2: Age structure of City of Knox

Age Group:	2006 Census			2011 Census			Change
	Males	Females	Persons	Males	Females	Persons	2006-2011
0-4 years	4,635	4,347	8,982	4,753	4,156	8,909	-73
5-14 years	10,531	10,310	20,841	9,537	9,115	18,652	-2,189
15-19 years	5,756	5,659	11,415	5,499	5,376	10,875	-540
20-24 years	5,135	4,925	10,060	5,262	4,992	10,254	194
25-34 years	9,175	9,386	18,561	9,307	9,434	18,741	174
35-44 years	10,647	11,719	22,366	10,262	11,094	21,356	-1,010
45-54 years	10,632	11,459	22,091	10,739	11,560	22,299	208
55-64 years	7,904	8,032	15,936	8,954	9,539	18,493	2,557
65-74 years	3,834	4,043	7,877	4,990	5,320	10,310	2,433
75-84 years	2,099	3,024	5,123	2,485	3,247	5,732	600
85 years and over	599	1,448	2,047	827	1,734	2,561	504
Total persons	70,947	74,352	145,299	72,615	75,566	148,181	2,882

Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011.

In summary between 2006 and 2011 census the largest changes in age structure for the City of Knox were:

- An increase in the age group 55 to 64;
- An increase in the age group 65 to 74;
- A decrease in the age group 35 to 44, and
- A decrease in the age group 5 to 14.

Culturally and Linguistically Diverse Communities (CALD)

The Knox municipal area has a diverse population with 41,500 residents born overseas (28% of the total population) and 17% of residents from non-English speaking backgrounds. The top ten listed countries of birth other than Australia includes United Kingdom, India, China, Malaysia, Italy, Germany, Hong Kong, Greece, Cambodia and Egypt.

With the exception of the United Kingdom, the remaining nine countries are quite evenly split, and provide the Knox municipal area with a diverse cultural landscape.

Vulnerable groups

Within the Knox municipal area there are several vulnerable groups:

- **Lower socio economic groups.**
- **Senior citizens and residential care facilities.** 13% of the population is aged 65 years and older. There are 25 residential aged care facilities and a further 4 supported residential service facilities within the Knox municipal area, 17 older person independent living

complexes and retirement villages. An emerging trend is for older people to remain living in their own homes and have care services delivered at home.

- **Hospitals.** There are four hospitals within the Knox municipal area, two public (The Angliss and Wantirna Health) and two private (Knox Private and Melbourne Eastern Private Hospital).
- **Children and young people.** Nearly 30,000 children in the area are under 15. There are 45 schools in the Knox municipal area, both public and private, and one tertiary education institution.
- **Special assistance.** In the 2011 census a percentage of the population were defined as people who need assistance in their day to day lives with any or all of the following activities; self-care, body movements or communication. Persons were only included if their stated reason for assistance was something other than old or young age. This question can assist us in our continued planning for supporting our vulnerable community during a fire. Around 6,000 people answered as needing assistance.

Assumptions for the future in the Knox municipal area

Different areas within the Knox municipal area have different functions based on both era of development and amount of new housing opportunities. Boronia, Bayswater, Knoxfield, Rowville, Scoresby and The Basin are expected to attract some families and older adults and retirees, while losing relatively large numbers of young adults leaving home. Wantirna is expected to experience a large loss through migration in young adults leaving home to establish new households elsewhere. Ferntree Gully by contrast is expected to attract family households again as the area regenerates. The variety of function and role of the small areas of this municipal area mean that population outcomes differ significantly.

There are also significant differences in the supply of residential property within the Knox municipal area that will have a major influence in structuring different population and household futures over the forecast period. Wantirna South, Rowville and Ferntree Gully are expected to experience the largest amount of new residential development over the forecast period, followed by Boronia and Bayswater. This development will generally take the form of medium density development and development of former non-residential uses, however in the case of Rowville and Ferntree Gully, some small pockets of greenfield development will occur in the early forecast period. By contrast, The Basin and Upper Ferntree Gully are not expected to add significant numbers of new dwellings over the forecast period.

Recent history of fire in the Knox municipal area

While bushfires are historically significant in the Knox municipal area, recent history indicates that large bushfires have predominately occurred in municipal areas directly bordering the Knox municipal area such as the Dandenong Ranges fires in 1997 that impacted parts of The Basin, Ferntree Gully and Upper Ferntree Gully, and the Churchill Park fire in 2009. However, the Quarry Road bushfire on 7 February 2009 (Black Saturday) had the potential for widespread damage to Ferny Creek and the Dandenong Ranges and posed a significant potential threat to life and property. This fire is a clear indicator of the potential for bushfires starting within the Knox municipal area and causing significant threat to Knox municipal area and neighbouring communities.

The Knox municipal area has a history of suspicious fire events. For the period 1 July 2012 to 30 June 2013, 51 reported arson incidents occurred within this area (data obtained from VICPOL). A small percentage reported were grassfires, while the majority of incidents were damage to property and infrastructure. There are serious consequences from bushfire due to arson, with the potential to impact heavily upon our environment and residents. To address the issue of bushfire arson prevention, VICPOL have implemented a strategy with a primary focus upon prevention, intelligence and enforcement strategies. This state wide approach involves effective cooperation with partners at a State and local level. Within the Knox municipal area during the average bushfire season, on those days activated as severe, extreme or code red, intensive police, Knox Local Laws, DELWP and ParksVic patrols focus upon high bushfire arson locations and time periods.

5. Risk assessment

5.1 Risk assessment process

When developing a fire management strategy it is necessary to undertake a risk management process. The AS/NZS ISO 3100: 2009 Risk Management standards provide a risk management model used to guide decision making in a wide range of applications including emergency management and fire safety. This standard defines risk as the chance of something happening that will have a negative impact on objectives.

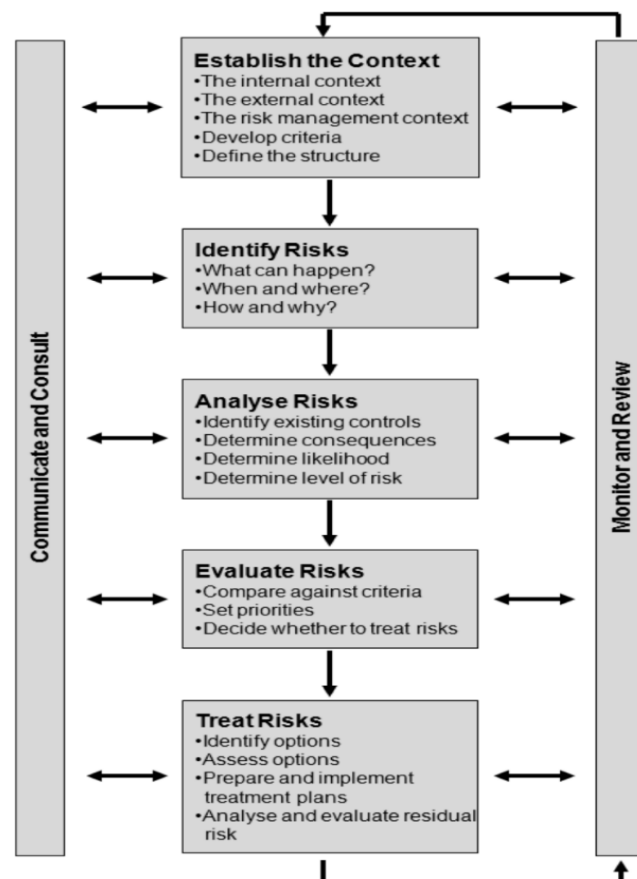


Figure 3: AS/NZS ISO 31000: 2009 Risk management – Principles and guidelines (Standards Australia, 2009)

In the Knox municipal area the risk assessment process is informed by the environmental scan and the use of fire specific risk assessment processes and tools.

Risk assessment processes and tools that inform the risk assessment process are:

- Victorian Fire Risk Register (VFRR-B)
- Victorian Built Environment Risk Assessment Process (V-BERAP)
- Bushfire Management Overlay
- Bushfire Prone Area mapping

5.2 Victorian Fire Risk Register - Bushfire

The Victorian Fire Risk Register - Bushfire (VFRR-B) was used to identify and address bushfire risks within the Knox municipal area. The VFRR-B is reviewed as required. Risk identification is ongoing as the municipality changes.

The VFRR-B is a systematic process that helps to identify assets at risk from bushfire, assesses the level of risk to these assets and highlights the treatments currently in place along with the responsible agencies for implementing these strategies. Outputs from the VFRR-B inform and support this plan.

The assets of the VFRR-B are divided into four classes; human settlement, economic, environmental, and cultural heritage.

5.3 Victorian Built Environment Risk Assessment Process

The Victorian Built Environment Risk Assessment Process (V-BERAP) is used to improve the assessment of fire and hazardous material risks in the built environment. The 10 steps of the V-BERAP is the definitive risk management process for structure fire and HAZMAT incidents in the State of Victoria. The MFB has developed this program in conjunction with other key stakeholders, including CFA, the Victorian Building Authority and the 5 pilot Councils. Knox has worked closely with MFB on the development of this process and on the technical working group for the guidelines.

The Knox pilot is due to commence in early 2016. As the V-BERAP will be the underpinning framework, the MFB will facilitate the process and discussion, along with other partners in fire management. CFA has agreed to provide MFB with Knox risk data sets, critical for decision making.

Under development is the Victorian Emergency Risk Management System (VERMS). VERMS will be a comprehensive, simple-to-use web based risk management system that can accommodate multiple hazard contexts (all-hazards) to operate at any geographical area (all-levels). VERMS is the information technology based tool that collates the outcomes of V-BERAP.

5.4 Bushfire Management Overlay and Bushfire Prone Area

The following two controls are also used to inform risk identification and prioritisation the delivery of treatment programs for bushfire in Knox.

Bushfire Management Overlay

The Bushfire Management Overlay (BMO) is established under the Victorian Planning Provisions, mapping developed by the State government and administered by local government identifies land in Victoria that may be at risk from bushfire. Land identified as BMO in the local planning scheme may require a planning permit to develop or subdivide.

Bushfire Prone Area

Bushfire prone areas (BPA) are designated under Regulation 810 (Building Regulations 2006) as areas that are subject to or likely to be subject to bushfires. This building control aims to regulate the construction standards of residential buildings depending on the level of bushfire risk posed to the planned dwelling. Properties in designated BPA's will require Bushfire Attack Level assessment and minimum constructions standards applied.

After identifying the risks Knox Fire Management Planning working group apply expert knowledge and experience whilst analysing and prioritising risk using a matrix. This process also takes into consideration current controls. The outcome of the process produces a range of actions that will guide the Knox MEMPC to minimise risk and improve public safety in the fire environment.

The risk assessment methodology requires the working group to:

- Identify the likelihood of an event occurring;
- Identify the consequence of an event occurring;
- Identify current controls in place to manage the risks;
- Identify a corresponding risk level of the event occurring (based on the matrix below);
- Make an assessment of the effectiveness of the controls; and
- Identify a suite of new controls, risk mitigation and treatment measures (goals/actions).

Based on these assessments, participants then identify a suite of risk preparedness, prevention, response and recovery measures.

Table 3: Measuring the likelihood of a hazard occurring

Level	Descriptor	Description In any one year, the likelihood of the event occurring is:
A	Almost certain	Close to 100% - annually
B	Likely	33% - once in every three years
C	Possible	10% - once in every 10 years
D	Unlikely	3% - once in every 30 years
E	Rare	1% - once in every 100 years

Table 4: Measuring the consequence of a hazard occurring

Level	Indicative guide to potential consequences					
	People	Infrastructure	Public Administration	Environment	Economy	Social Setting
Catastrophic	50+ lives lost Hundreds injured 1,000+ houses destroyed 2,000+ people displaced 10,000 – 30,000 livestock lost.	Loss of critical infrastructure and / or services for 24-48 hours to the Melbourne metropolitan area.	Significant State-wide outrage. Royal Commission or other similar inquiry leading to changes in policy and practice.	Permanent total loss of one or more ecosystems or critical habitat elements. Loss of nationally significant cultural assets.	\$1 billion or 30% of State revenue.	Severe disruption to community wellbeing over a whole area or large part of it for a period of many years.
Major	10 fatalities as a direct result of the event 300+ houses destroyed 500+ people displaced 10,000 – 30,000 livestock lost Significant loss of agricultural breeding stock.	Loss of critical infrastructure and / or services for 8-16 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for up to a week.	Significant regional and local outrage, with some occurring at state level. Parliamentary or other inquiry leading to changes in practice.	Permanent partial loss of one or more ecosystems or critical habitat elements. Extinction of a species or significantly increase the likelihood of extinction to almost certain that intervention such as captive breeding programs are required. Loss of state significant cultural assets.	Damage costs including legal actions and/or industry impacts (tourism, forestry, wine and grape, etc) to the value of more than \$300 million.	Severe disruption to community wellbeing over a wide area of for more than 24 months.
Serious	5 fatalities as a direct result of the event Large number of people affected by the event 100+ houses destroyed 200+ people displaced 3,000 – 10,000 livestock lost.	Loss of critical infrastructure and/or services for 2-5 hours to the Melbourne metropolitan area. Loss of services to a major regional city / several suburbs for 3-4 days.	Some outrage at local and regional level.	Long term disturbance to one or more ecosystems or critical habitat elements. National response and/or support for animal welfare. Loss of regionally significant cultural assets.	Damage costs including legal actions and/or industry impacts (tourism, forestry, wine and grape etc) to the value of more than \$100 million.	Severe disruption to community wellbeing over a moderate to large area for a period of months.
Important	Single fatality and/or multiple serious injuries requiring hospitalisation as a direct result of the event Up to 30 houses destroyed 50+ people displaced 3,000 – 10,000 livestock lost.	Loss of critical infrastructure and / or services for 1 hour to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for 1 day. Loss of services to a local community for a week.	Local outrage and concern	Temporary disturbance to one or more ecosystems or critical habitat elements. Local response and/or support for animal welfare.	Damage costs including legal actions and/or industry impacts (tourism, forestry, wine and grape etc) to the value of more than \$30 million.	Localised disruption to community wellbeing over a small area for a period of weeks.

Table 5: Determining a risk level for each hazard – the risk matrix

Having determined the likelihood and expected consequence of a hazard occurring, an overall level of risk can be identified through the use of the following matrix.

Likelihood	Consequence			
	Important	Serious	Major	Catastrophic
Almost certain	Moderate	High	Extreme	Extreme
Likely	Moderate	High	High	Extreme
Possible	Low	Moderate	High	High
Unlikely	Low	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate

Table 6: Recommended action for each risk category

The following levels of action are recommended for each of the risk categories:

Risk category	Recommended action
Extreme risk	Must be managed with a detailed plan – will require resources and training
High risk	Requires immediate planning – resource priority and training
Moderate risk	Manage by specific monitoring or response procedures
Low Risk	Manage by routine procedures

Table 7: Determining the effectiveness of control measures

Descriptor	Guide
Fully effective	Nothing more to be done except review and monitor the existing controls. Controls are well designed for the risk, are largely preventative and address the root-causes and management believes that they are affective and reliable at all times. Reactive controls only support preventative controls.
Substantially effective	Most controls are designed correctly and are in place and effective. Some more work to be done to improve operating effectiveness of management has doubts about operational effectiveness and reliability.
Partially effective	While the design of controls may be largely correct in that they treat most of the root-causes of the risk, they are not currently very effective. There may be an over-reliance on reactive controls. OR

	Some of the controls do not seem correctly designed in that they do not treat root-causes, those that are designed correctly are operating effectively.
Largely ineffective	Significant control gaps. Either controls do not treat root-causes or they do not operate at all effectively. Controls, if they exist, are just reactive.
None or totally effective	Virtually no credible control. Management has no confidence that any degree of control is being achieved due to poor control design and / or very limited operational effectiveness.

5.5 Risk assessment

Current controls

The following table has been designed to describe current controls used in the risk matrix.

Control Category	Control	Hazard Control Type	Responsibility
Community education	Fire Ready Victoria program - Household Bushfire Assessment tool	<ul style="list-style-type: none"> Bushfire 	CFA
	Hazardous atmospheres – Shelter-in-Place education program	<ul style="list-style-type: none"> Industrial/commercial fire Chemical spill (hazardous materials (HAZMAT)) 	CFA
	Community Information Guide	<ul style="list-style-type: none"> Bushfire 	CFA
	Total Fire Ban (TFB) days, Fire Danger Periods & Fire Danger Ratings	<ul style="list-style-type: none"> Bushfire 	CFA/Bureau of Meteorology
	Fire Danger Rating signage and Fire Ready signage	<ul style="list-style-type: none"> Bushfire 	CFA/KCC
	Community education program	<ul style="list-style-type: none"> Bushfire 	DELWP/ParksVic
	Police Proactive Patrol – Operation Bushfire	<ul style="list-style-type: none"> Bushfire 	VICPOL
	Community Fire Guard program	<ul style="list-style-type: none"> Bushfire 	CFA
	Brigade advice	<ul style="list-style-type: none"> Bushfire Public accommodation fire Single incident fire Industrial/commercial fire Chemical spill (HAZMAT) 	CFA
Community information	<ul style="list-style-type: none"> Bushfire Public accommodation fire Single incident fire Industrial/commercial fire Chemical spill (HAZMAT) 	All	
Hazard Reduction	KCC's Hazard Clearance program <ul style="list-style-type: none"> Bushland Fire Management (BFM) plans 	<ul style="list-style-type: none"> Bushfire 	KCC

Control Category	Control	Hazard Control Type	Responsibility
	<ul style="list-style-type: none"> ▪ Fire prevention notices ▪ Permits to burn 		
	Fire Operations Plans	<ul style="list-style-type: none"> ▪ Bushfire 	DELWP/ParksVic
	Electrical Safety Act	<ul style="list-style-type: none"> ▪ Bushfire 	KCC/SP Ausnet
	Road Management plans	<ul style="list-style-type: none"> ▪ Bushfire 	KCC/VicRoads
	Hazard Trees Management Planning	<ul style="list-style-type: none"> ▪ Bushfire 	KCC
Ignition Management	Police Arson program/Fire Setter strategy Operations Fire Setter, TFB days	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire 	VICPOL
	Fire patrols – Operation Bushfire Patrols	<ul style="list-style-type: none"> ▪ Bushfire 	VICPOL
	Operation HUSSAR (Covert Operation Dandenong Ranges)	<ul style="list-style-type: none"> ▪ Bushfire 	VICPOL
	Essential services maintenance	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	Utilities
	Security	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	
	Road Management plans	<ul style="list-style-type: none"> ▪ Bushfire 	KCC/VicRoads
	VicRoads Bushfire Roads Risk Assessment	<ul style="list-style-type: none"> ▪ Bushfire 	VicRoads
	Hazard Trees Planning	<ul style="list-style-type: none"> ▪ Bushfire 	Responsible Land Manager
	Legislation & regulations	Wildfire Management Overlays	<ul style="list-style-type: none"> ▪ Bushfire
Bushfire Prone Areas		<ul style="list-style-type: none"> ▪ Bushfire 	DTPLI
SP Ausnet – plans for substations		<ul style="list-style-type: none"> ▪ Bushfire 	SP Ausnet
Emergency management plans		<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies

Control Category	Control	Hazard Control Type	Responsibility
	Industry Codes of Practice	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Occupational Health & Safety	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Certification & accreditation of facilities	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Sprinkler & alarm systems	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire 	All agencies
	Health regulations	<ul style="list-style-type: none"> ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Electrical regulations	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire 	All agencies
	HAZMAT regulations	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Environmental protection regulations	<ul style="list-style-type: none"> ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
Evacuation & vulnerable persons	Vulnerable persons register	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	KCC/VICPOL/ funded agencies
	VICPOL Evacuation Plans	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	VICPOL

Control Category	Control	Hazard Control Type	Responsibility
	Community Information Guides	<ul style="list-style-type: none"> ▪ Bushfire 	CFA
	KCC Aged Care Vulnerable Persons register	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	KCC
	KCC Children Services High Fire Danger Rating Policy and Procedure	<ul style="list-style-type: none"> ▪ Bushfire 	KCC
	Eastern Metropolitan Region Emergency Relief Centre Guidelines	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	Councils within Eastern Metropolitan Region
	Traffic management plans	<ul style="list-style-type: none"> ▪ Bushfire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	VICPOL/VicRoads
Response planning	Township Planning Factors	<ul style="list-style-type: none"> ▪ Bushfire 	CFA
	Practices/exercises/drills	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Agency response plans <ul style="list-style-type: none"> ▪ MEMPC 	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	Knox MEMPC
	Hazardous atmospheres – Shelter in Place planning	<ul style="list-style-type: none"> ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	CFA
Recovery planning	Agency recovery plans	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Insurance	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies

Control Category	Control	Hazard Control Type	Responsibility
	Agency business continuity plans	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	All agencies
	Municipal recovery plan	<ul style="list-style-type: none"> ▪ Bushfire ▪ Public accommodation fire ▪ Single incident fire ▪ Industrial/commercial fire ▪ Chemical spill (HAZMAT) 	KCC

5.6 Fire risk assessment matrix

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
Natural	Parklands being impacted by bushfire.	<p>Wantirna, William Morris Reserve (Melway 63 F7)</p> <p>Wantirna South, Blind Creek Corridor/Lewis Road retarding basin (Melway 64 B10)</p> <p>Ferntree Gully, Blind Creek Billabong Reserve (Melway 64 H11)</p> <p>Ferntree Gully, Forest Rd, Koolunga Native Reserve (Melway 65 B11)</p> <p>Ferntree Gully, Quarry (Melway 74 D5)</p> <p>The Basin, Sugarloaf Hill, Liverpool Road retarding basin (Melway 65 G5)</p> <p>The Basin, Wicks Reserve (Melway 65 H8)</p> <p>Boronia, Old Joes Creek Retarding Basin (Melway 65 A6)</p> <p>Wantirna, Bateman Reserve (Melway 63 F4)</p> <p>Lysterfield, Hanson/Boral Quarry (Melway 82 E7)</p> <p>Dandenong Creek Corridor (Melway 81 G9 – 81 D4)</p>	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Almost certain	Important	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Parklands being impacted by bushfire (contd).	Boronia, Forest Rd, Wirrianda Reserve (Melway 65 C10)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Low	Adequate controls in place.	Knox MEMPC
		Knoxfield, Lakewood Estate bushland (Melway 73 B2) The Basin, Mountain Hwy, Road Reserve (Melway 65 G7-H7) Lysterfield, Lysterfield Road, Road Reserve (Melway 74 B10) Lysterfield, Wellington Road, Road Reserve (Melway 83 D4) SP Ausnet, grass and bushland (Melway 82 A7-63 E3) Rowville South, Timbertop Drive, Further info on reserve (Melway 81 F4) Rowville, Heany Park Reserve (Melway 82 C6) Lysterfield, Lysterfield Lake Park (Melway 83 C12)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Likely	Important	Moderate	Maintain and review current controls.	Knox MEMPC
		Melbourne Water wetlands (Melway 81 E4)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Serious	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Waterways being impacted industrial/ commercial fire/ chemical spill (HAZMAT).	All creeks and water bodies	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Serious	Moderate	Maintain and review current controls.	Knox MEMPC
	Atmospheres being impacted industrial/ commercial fire/ chemical spill (HAZMAT).	All atmospheres	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Unlikely	Serious	Moderate	Maintain and review current controls.	Knox MEMPC
		All parklands	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Unlikely	Serious	Moderate	Maintain and review current controls.	Knox MEMPC
Economic	Businesses being impacted by bushfire.	Upper Ferntree Gully Township (Melway 74 F6) Ferntree Gully Township (Melway74 C3) The Basin Township (Melway65 G7) Rowville, Wellington Road, Boral and Hanson Quarries (Melway 82 E4)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Moderate	Maintain and review current controls.	Knox MEMPC
	Businesses being impacted by industrial/ commercial fire/ chemical spill (HAZMAT).	Commercial/ industrial estates	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Businesses being impacted by single incident fire.	All commercial businesses	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Moderate	Maintain and review current controls.	Knox MEMPC
Built	Communities (human settlement) being impacted by bushfire.	Ferntree Gully Fringe, National Park Boundary (Melway 74 E1)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Serious	High	Better promotion of Fire Ready programs. Review of fire loads abutting park.	Knox MEMPC/ CFA/ ParksVic
		Upper Ferntree Gully, North of Quarry Rd (Melway 74 D5)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Serious	High	Manage fire load within the former quarry.	KCC
		The Basin Central, Mountain Hwy (Melway G7)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Likely	Serious	Moderate	Maintain and review current controls.	Knox MEMPC
		Upper Ferntree Gully, Glenfern Road (Melway 74 E9)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Serious	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Communities (human settlement) being impacted by bushfire contd.	Wantirna, Bateman Reserve (Melway 63 F4) Boronia, Corner Colchester Road and Mountain Highway (Melway 65 D4)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Low	Adequate controls in place.	Knox MEMPC
		Upper Ferntree Gully, Rail Line, Old Belgrave Road (Melway 74 E5)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Almost certain	Serious	High	Ensure fuel reduction and education programs are relevant and integrated across agencies.	Knox MEMPC
		The Basin, Academy Drive (Melway 65 F6) Knoxfield, Lakewood Estate (Melway 73 B2) Boronia, Old Joes Creek Retarding Basin (Melway 65 A6) Wantirna South, Flamingo Reserve (Melway 63 E11) Wantirna South, Kindergarten, Flamingo Drive (Melway 63 E11)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Low	Adequate controls in place.	Knox MEMPC
		Wantirna, William Morris Reserve (Melway 63 F7)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Almost certain	Important	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Communities (human settlement) being impacted by bushfire contd.	Ferntree Gully, Forest Road, Koolunga Native Reserve, (Melway 65 B11) Lysterfield, Lysterfield Interface (Melway82H7) Rowville, Hanson Lysterfield Quarry (Melway 82 E4) Rowville South, Timbertop Drive (Melway 81 H5) Wantirna South, Blind Creek Corridor (Melway72 D3-63H12) Ferntree Gully, Blind Creek Corridor (Melway 64 F11-74 C1) Ferntree Gully, Billabong Reserve, Blind Creek Billabong Reserve (Melway 64 H11) Knox Park Primary School, Knoxfield (Melway 73 C3)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Likely	Important	Moderate	Maintain and review current controls.	Knox MEMPC
		Boronia, Wirrianda Reserve, Forest Road (Melway 65 C10)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Unlikely	Important	Low	Adequate controls in place.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Communities (human settlement) being impacted by bushfire contd.	The Basin/Sassafras (Melway 66 B7) The Basin, Sheffield Road (Melway 65 J7) Lysterfield South, Lysterfield/ Wellington Road (Melway 83 D4) The Basin, Wicks Reserve (Melway 65 H8) The Basin, Church of God (Melway65 J9) Rowville, Heany Park Scout and Guide Camp (Melway 82 C6) The Basin, Doongalla, Doongalla Road (Melway 65 J7) Ferntree Gully Fringe, National Park Boundary (Melway 74 E1) Upper Ferntree Gully, Glenfern Road (Melway 74 E9)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Serious	High	Ensure fuel reduction and education programs are relevant and integrated across agencies.	Knox MEMPC
		The Basin, The Basin Primary School, Liverpool Road (Melway 65 F6)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Serious	Moderate	Maintain and review current controls.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Communities (human settlement) being impacted by bushfire contd.	Upper Ferntree Gully Primary School, Talaskia Road (Melway 74 G6) The Basin, Salvation Army Mountain View, Liverpool Road (Melway 65 E5) The Basin, Salvation Army Rehabilitation Centre, Basin Olinda Road (Melway 65 H7)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Evacuation & vulnerable persons ▪ Response planning ▪ Recovery planning 	Substantially effective	Likely	Important	Moderate	Maintain and review current controls.	Knox MEMPC
		Upper Ferntree Gully, Railway Line (Melway 74 E5)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Almost certain	Serious	High	Ensure fuel reduction and education programs are relevant and integrated across agencies.	Knox MEMPC
	Human settlement being impacted by industrial/ commercial fire/ chemical spill (HAZMAT).	All human settlement within the vicinity of industrial estates and major road.	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Serious	High	Develop tools to further identify risk and treatment options.	Knox MEMPC
	Human settlement being impacted by public accommodation fire.	All public accommodation properties. (eg. boarding houses, nursing homes, hospitals)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Unlikely	Serious	Moderate	Work closely with key agency. Owners ensure plans are in place across PRR.	Knox MEMPC
	Critical infrastructure being impacted by bushfire.	Powerlines/supply	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Major	High	Plans in place need to be reviewed annually.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Critical infrastructure being impacted by bushfire contd.	Major roads Rail corridor	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Major	High	Work closely with key agency. Owners ensure plans are in place across PPRR.	Knox MEMPC
		Eastlink	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Serious	High	Work closely with key agency. Owners ensure plans are in place across PPRR.	Knox MEMPC
		Hospitals	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Low	Adequate controls in place.	Knox MEMPC
		Telecommunications Infrastructure	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Partially effective	Likely	Major	High	Work closely key agency. Owners Ensure plans are in place across PPRR.	Knox MEMPC
Social	Historically/ culturally significant gathering places being impacted by bushfire.	<p>Ferntree Gully, Ambleside Park Homestead (Melway 65 D12)</p> <p>Boronia, Millers Homestead (Melway 65 D6)</p> <p>Stamford Park Homestead (Melway 72 H11)</p>	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Rare	Important	Low	Adequate controls in place.	Knox MEMPC

Hazard Environment	What is the Risk	Risk Location/ Element	Current Controls	Effectiveness of Controls	Likelihood of occurring	Consequence of occurring	Risk Category	Actions to Reduce Risk	Lead Agency
	Historically/ culturally significant gathering places being impacted by bushfire contd.	The Basin, The Chandler Oak Tree, Sheffield Road (Melway 65 J7) The Basin, Como Gardens (Melway 65 K8)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Likely	Important	Low	Adequate controls in place.	Knox MEMPC
		Rowville, Starlight Reserve (Melway 81 F5)	<ul style="list-style-type: none"> ▪ Community education ▪ Hazard reduction ▪ Ignition management ▪ Legislation & regulations ▪ Response planning ▪ Recovery planning 	Substantially effective	Possible	Important	Low	Adequate controls in place.	Knox MEMPC

5.7 High risk treatment plan

Having identified hazards that represent a high level of risk to the community, the following treatment plan is established.

Hazard environment	Built
Description	Communities (Human settlement) being impacted by bushfire: The Basin, Sheffield Road Lysterfield South, Lysterfield/Wellington Road The Basin, Church of God Site Rowville, Heany Park Scout and Guide Camp The Basin, Doongalla, Doongalla Road Ferntree Gully Fringe, National Park Boundary Upper Ferntree Gully, Glenfern Road Upper Ferntree Gully, Railway Line The Basin, Wicks Reserve
Likelihood of occurring	Almost certain/Likely
Consequence of occurring	Serious
Risk rating	High
Nature of hazard	Risk of bushfire to life and property
Those people in the community most vulnerable	Residents, visitors and those working in the Knox municipal area
Key responsibility to respond and manage risk	All land managers
Agencies role in relation to this risk	Risk identification, treatment management, education and response
Prevention activities	Fuel reduction programs/modification, Hazard Trees identification & notification procedures
Preparedness activities	Community education – Fire Ready program, Community Fireguard, testing & exercises, Community Information Guides
Response activities	CFA operational plans, traffic management plans, MEMP
Recovery activities	MEMP - recovery plan, Hazard Trees identification, rehabilitation plans, restoration plans

Hazard environment	Built
Description	Human settlement being impacted by industrial/commercial fire/chemical incident (HAZMAT)
Likelihood of occurring	Likely
Consequence of occurring	Serious
Risk rating	High
Nature of hazard	Risk of human settlement being impacted by industrial/commercial fire/chemical spill (HAZMAT)
Those in community most vulnerable	All human settlement within the vicinity of industrial estates and major roads

Hazard environment	Built
Key responsibility to respond and manage risk	CFA
Agencies role in relation to this risk	Risk identification, treatment management, education and response
Prevention activities	Development of risk identification tools, legislation
Preparedness activities	Education programs, enforcement, equipment testing programs
Response activities	Crisis management, CFA operational plans, traffic management plans, MEMPC, emergency management plans in place and tested
Recovery activities	MEMP - recovery plan, restoration plans

Hazard environment	Built
Description	Critical infrastructure being impacted by bushfire <ul style="list-style-type: none"> ▪ Major roads including Eastlink ▪ Public transport ▪ Telecommunications infrastructure
Likelihood of occurring	Likely
Consequence of occurring	Major
Risk rating	High
Nature of hazard	Risk of bushfire to infrastructure
People in the community most vulnerable	Majority of community & neighbouring communities
Key responsibility to respond and manage risk	Key agency owners
Agencies role in relation to this risk	Risk identification, treatment management, education and response
Prevention activities	Fuel reduction programs/modification – roadside maintenance
Preparedness activities	Planning, business continuity planning, education, agency contingency plans
Response activities	Crisis management, CFA operational plans, traffic management plans, MEMPC, emergency management plans in place and tested
Recovery activities	MEMP - recovery plan, Hazard Trees identification, rehabilitation plans, restoration plans

Hazard environment	Built
Description	Critical infrastructure being impacted by bushfire Powerlines/supply
Likelihood of occurring	Likely

Hazard environment	Built
Consequence of occurring	Major
Risk rating	High
Nature of hazard	Risk of bushfire to infrastructure
Those in community most vulnerable	Majority of community and neighbouring communities
Key responsibility to respond and manage risk	Key agency owners
Agencies role in relation to this risk	Risk identification, treatment management, education and response
Prevention & preparedness activities	<p>Transmission network</p> <p>Plan easement patrols and report condition, address as per priority. Works to be completed by priority date. This is monitored through the BFM index which is reported monthly to Essential Services Victoria (ESV)</p> <p>Check all off road vehicles and plant by approved mechanic</p> <p>Arrange inspection of vacant sites & report condition, reduce fuel loads as required</p> <p>Arrange remedial action for vacant sites</p> <p>Inspect stations and depots, report and rectify any anomalies</p> <p>Arrange annual fire training for transmission linemen</p> <p>Program works for all bushfire mitigation activities and related lines maintenance work</p> <p>Terminal stations have regular inspection program for whole year</p> <p>Fire equipment on all terminal stations inspected regularly</p> <p>Regular grass cutting and yard spraying program in place</p> <p>Distribution network</p> <p>All distribution lines have a vegetation assessment as per ESV requirements and cut according to priority. All poles and wires inspected as per cyclic inspection plan. Defect items prioritised and maintained accordingly</p> <p>Policy requires that at the start of the BFM period the company maintenance index is zero. ie. no overdue defects for line hardware or encroaching trees</p> <p>Audit progress and reporting</p> <p>Audit field works and reports</p> <p>Monthly BFM progress reports</p> <p>Network monthly reports</p> <p>Audit bushfire mitigation program implemented prior to declaration</p> <p>Audit summary for preparedness reports</p>

Hazard environment	Built
	Field audits by executive management Conducted by ESV, BFM field and desktop audits prior to BFM season
Response activities	Crisis Management, CFA operational plans, traffic management plans, MEMPC, emergency management plans in place and tested
Recovery activities	MEMP - recovery plan, Hazard Trees identification, rehabilitation plans, restoration plans

5.8 Shelter options

Neighbourhood safer places and community fire refuges can be provided for community as last resort survival options. They do not replace having a well thought out and practiced safety plan.

Based on the relatively low risk of bushfire Knox municipal area does not have any designated neighbourhood safer places or fire refuges, and does have a number of accessible areas such as shopping centres, libraries and other community facilities available.

6 Action Plan

No.	Goals	Actions	When	Who	Key Performance Indicators (KPIs)
Strategic Objective 1: To lead fire management planning across the municipal area					
1.1	Build capacity and ownership within agencies to support fire management planning in Knox by establishing effective engagement strategies within and across agencies.	Promote the importance of the Knox Municipal Fire Management Plan to relevant agency heads.	Ongoing	MEMPC	Attendance and participation by all agencies at Municipal Emergency Management Planning Committee (MEMPC) and plan review meetings.
			2016	MEMPC	Executive summary of the Knox Municipal Fire Management Plan is available to the committee, community and stakeholders.
		Build improved relationships across agencies.	Ongoing	MEMPC	Collaborative activities that benefit all stakeholders undertaken (ie. participation in multi-agency exercises, engagement activities).
1.2	Ensure the Knox Municipal Fire Management Plan aligns with regional and State strategic direction.	Consider the Knox Municipal Fire Management Plan aligns with any new plans, strategies or guides produced by the State and regional committees.	Ongoing	MEMPC	State and regional activities monitored and implement any changes relevant to the Knox municipal area.
Strategic Objective 2: Developing fire management plans based on shared knowledge					
2.1	Utilise existing networks and resources to develop a coordinated approach to expand knowledge sharing across and within agencies.	Ensure adequate representation of member agencies at reviews of the Knox Municipal Fire Management Plan.	Ongoing	MEMPC	Records of attendees kept and generally accord with the recommendations of the working committee.
		Agencies actively share information, reports and plans.	Ongoing	MEMPC	MEMPC is inclusive of information.
2.2	Advocate for and use fire risk planning tools to support decision making (within and between agencies).	Knox Council to pilot the Victorian Emergency Risk Management System (VERMS).	Ongoing	Coordinator Emergency Management – Knox City Council	Knox City Council committed to project.
		Continue to review potential bushfire risk.	As required	MEMPC	VFRR-B reviewed as required.

No.	Goals	Actions	When	Who	Key Performance Indicators (KPIs)
Strategic Objective 3: Working with the community to manage fire					
3.1	Undertake coordinated multi-agency community engagement to improve efficiencies and focus community involvement.	Develop a communication and marketing plan to integrate all agencies activities. Look at using more effective mediums. Consider targeting at a range of demographics. Maximise joint collaboration at festivals/community events.	2016	MEMPC	Communication and marketing plan developed.
3.2	Support initiatives and actions that prevent accidental ignition of fires.	Fuel reduction initiatives undertaken at high risk locations.	Pre-fire season	MFPO	Fuel reduction activities planned and undertaken.
Strategic Objective 4: Delivering outcomes that address fire risk in the local environment regardless of boundaries					
4.1	Focus on bushfire management as a priority in the initial planning process.	Prioritise the threat to life from bushfire as a part of planning.	Ongoing	MEMPC	Treatment options prioritised.
			Ongoing	MFPO	Undertake fire management assessments in high risk areas.
4.2	Support and review fuel management projects on private land in context of the municipal risk environment.	Support all relevant agencies and property owners in delivering and developing fire prevention programs.	Ongoing	MFPO and the MEMPC	Fire prevention inspection program reviewed and updated annually.
			Ongoing	Coordinator Emergency Management – Knox City Council	Knox represented on the Dandenong Ranges Landscape Fire Strategy Pilot Project.
4.3	Support opportunities for projects/programs where cross-tenure fuel management can occur.	Investigate the opportunity to develop integrated fuel management programs.	Ongoing	MEMPC	Opportunities investigated and identified.

No.	Goals	Actions	When	Who	Key Performance Indicators (KPIs)
Strategic Objective 5: Identify significant natural, social, built and economic environments at risk within Knox and in consideration of neighbouring communities					
5.1	Use Community Emergency Risk Assessment (CERA) to assess and treat significant fire risks at the local level.	Undertake review and ensure specific management strategies in place for: <ul style="list-style-type: none"> • local physical assets and infrastructure • local threatened and endangered flora and fauna • locations of aesthetic, historic, scientific and social cultural significance • major industry and business at significant risk of fire 	Annually	MEMPC	Risks and treatments contained in the Appendices reviewed.
5.2	Systems in place to manage hazardous trees in proximity to powerlines.	Hazardous tree inspection and management process is developed and reviewed.	Ongoing	Project Officer – Trees, Knox City Council	Process is in place and reviewed annually.
Strategic Objective 6: A commitment to continuous improvement					
6.1	Implement systems to ensure continuous improvement occurs across planning and projects.	Review conducted of action plan by working group.	Annually	MEMPC	Action plan is reviewed and updated.

7 Monitor and improve

The outcomes of this plan will be monitored and improved throughout the planning cycle. These evaluations will inform the current and future planning cycles.

7.1 Monitoring and evaluation

The Knox MEMPC is required to monitor progress towards the completion of treatment works listed in this plan. The KPIs stated in the action plan will be used to determine if the actions were completed successfully and if the goals for each of the strategic objectives set by the Committee have been achieved. Additional measures for evaluation such as training, exercises and real event debriefings will be used in the monitoring and evaluation of this plan and contribute to recommendations for the future.

7.2 Review

The Knox MEMPC will review this plan annually and as necessary account for any changes in context or risk.

This may be triggered by a range of circumstances, including but not limited to:

- Changes to the Knox municipal area, organisation responsibilities and capacity or legislation;
- Changes to the bushfire risk in the area;
- Following a major fire event; or
- Further development of fire management tools including the VFRR-B and the V-BERAP.

7.3 Reporting

The Knox MEMPC is required to report every six months to the Eastern Metropolitan RSFMPC on its progress towards implementing the fire risk management activities identified in the Knox MFMP.

Information surrounding what measures have worked and why, and those that have not worked or remain incomplete will be collated, and lessons learned including recommended adaptations to the plan will be recorded in a report. Relevant results of related audits (for example those of VICSES and CFA) will also be included and analysed to determine further improvements that may need to be introduced to the Knox MFMP and the planning cycle. This report will be reviewed by the Knox MEMPC and made available to the regional committee, stakeholders, agencies and the community.

7.4 Continuous improvement

This version of the Knox MFMP captures the learnings from fire events, reviews, training and exercises conducted since the publication of the 2011-2014 Plan. This Plan will continue to be updated to reflect future continuous improvement opportunities for fire management within the Knox municipal area.

ATTACHMENTS

Community Information Guides – The Basin and Upper Ferntree Gully & Ferntree Gully
(<http://cfa.vic.gov.au/plan-prepare/community-information-guides/>)

ParksVic/DELWP, Fire Operations Program inclusive of Knox municipal area
(<http://www.depi.vic.gov.au/fire-and-emergencies/planned-burns/fire-operations-plans/current-approved-fop>)



 (03) 9298 8000  (03) 9800 3096  knoxcc@knox.vic.gov.au

 knox.vic.gov.au  facebook.com/knoxCouncil  @KnoxCC

 511 Burwood Highway, Wantirna South, VIC 3152

 National Relay Service: **133 677** (ask for 03 9298 8000) or relayservice.gov.au

 Interpreter/口译员/Thông dịch viên/Interprete/Διερμηνέας: **131 450** (ask for 03 9298 8000)

On request, the information in this document is available in alternate formats.