PUBLIC VERSION

Murrindindi Shire Council
and Lake Mountain Alpine Resort
Municipal Fire Management Plan

Municipal Fire Management Planning Committee
Version 6, 2015

Preface

Victoria has a long history of community, government and organisations working cooperatively to combat the threat of fire and hazardous material incidents. Recent versions of this plan have focused predominantly on bushfire and its effect on communities and the landscape. This iteration of the plan hopes to broaden that approach by also examining the risks of structural fire and hazardous material incidents.

Integrated Fire Management Planning (IFMP) is a co-coordinated whole of government approach to fire management planning in Victoria, which has been utilised in the production of this plan. Established under the *Emergency Management Act 1986*, IFMP has been rolled out across the state at both regional and municipal level as the fire planning framework for Victoria. It is now being promoted by the new State body, Emergency Management Victoria (EMV) in the production of fire management plans. IFMP involves fire planning with other agencies and organisations to produce a combined Municipal Fire Management Plan (MFMP) that examines the fire and hazardous material risks to a given municipality.

IFMP provides a framework for consistent and effective fire management planning. To do this, it provides a multi-agency approach, bringing together fire management planners and other stakeholders including emergency service agencies, government departments, private organisations and the community. Working together these key stakeholders build on and create new relationships and share information to plan across both public and private land tenures for all types of fire. IFMP is based on analysis and management of risk, utilizes best practice and builds on existing information, such as the Victorian Fire Risk Register (VFRR), Fire Operations and Management Plans, mitigation strategies, roadside and environmental plans, Community Information Guides (CIGs), recovery plans and more.

The Murrindindi Shire Council and Lake Mountain Alpine Resort Municipal Fire Management Planning Committee (MFMPC) formed in 2011 and includes members from DELWP, CFA, Murrindindi Shire Council and Lake Mountain Alpine Resort. The MFMPC is supported at a regional level by the Hume Region Strategic Fire Management Planning Committee (HRSFMPC) and at a State level by the State Fire Management Planning Committee (SFMPC).

A key responsibility of the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC is the development of an MFMP on behalf of the Murrindindi Shire Council and Lake Mountain Alpine Resort Municipal Emergency Management Planning Committee (MEMPC). The MFMP, which aligns with the *Hume Regional Strategic Fire Management Plan 2011-2021*, describes how regional authorities, local government, fire agencies and other relevant organisations can work together to effectively anticipate, respond to and recover from fire and hazardous material events affecting the geographical area of Murrindindi Shire.

The original iteration of this plan focused on the bushfire risk to the Shire. This version of the plan has been expanded to include structural fire and hazardous material incidents and recognises extensive work already undertaken in fire management across the municipality.

The plan identifies a number of risks which were assessed utilising a State-derived bushfire consequence table, risk assessment matrix and likelihood matrix for determining bushfire risk. Similarly, the Community Emergency Risk Assessment (CERA) consequence table, risk assessment matrix and likelihood matrix were utilised for structural fire and hazardous material

incidents. The State bushfire consequence, risk and likelihood tables predominantly focus on bushfire and are not applicable to structural fire or hazardous material incidents. The CERA risk tables developed by SES and used by the MEMPC in the production of the MEMP correspond more precisely with the examination of structural fire or hazardous material incidents than the State bushfire tables.

 Once assessed, the risks were then ordered with those risks to human life taking precedence. The risks include (but are not limited to):

- People living in higher risk environments such as the Kinglake Ranges, Flowerdale/King Parrot Creek Valley, Taylor Bay, Marysville Triangle areas and other towns in the municipality being at risk of bushfire
- Visitors to the shire during summer and people travelling on roads
- Essential infrastructure (power, water and communications)
- Outdoor education facilities and students, industry and infrastructure
- Biodiversity, natural assets and values
- The risk of structural fire in Eildon, to houseboats on Lake Eildon and to infrastructure at Lake Mountain Alpine Resort

Treatments or procedures that tackle these risks directly were then assembled from all of the relevant agencies in the Municipality (see Risk Management Strategy, Section 5.3). An Action Plan (Section 5.4) was then developed to identify any gaps in the treatment of fire risk and to outline any new treatments to risk that may be planned.

The plan includes information on Community Information Guides (CIGs) and Neighbourhood Safer Places (NSPs). CIGs provide a planned response for both emergency services and the community to a bushfire within close proximity to a township, with potential to impact on a local community. NSP's are a place of last resort and are available to residents if their Bushfire Survival Plan fails and they have no other place for shelter.

It is acknowledged that CIGs and NSPs are important safety and pre planning elements for the community, especially for the settlement areas that are subject to bushfire risk. CIGs and NSPs are progressively being established and will form an integral part of the Council's annual fire prevention works program considerations and future priorities.

I join with the members of the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC in commending this document to you. We see the further development and refinement of this plan as an important step in the ongoing journey to securing a safer, more resilient community, healthier environment and a prosperous economy for our municipality.

Mark Leitinger

Chair
Murrindindi Shire Council and Lake Mountain Alpine Resort
Municipal Fire Management Planning Committee
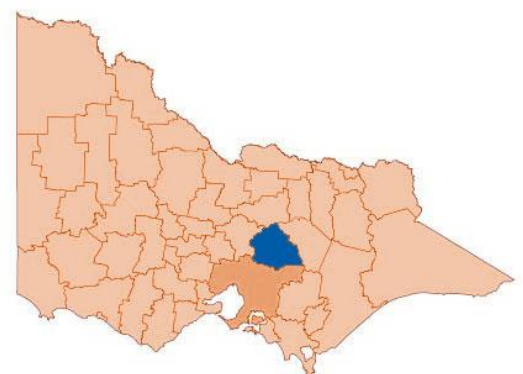
Version Control Table

Version #	Date of issue	Author(s)	Brief description of change
Version 1.0	2/5/12	C. Hajek, C. Price (IFMP)	Draft MFMP for comment
Version 2.0	26/6/12	C. Price (IFMP)	New Edits
Version 3.0	20/7/12	C. Price (IFMP)	Murrindindi Shire and Lake Mountain MFMPC Meeting 4.2 Edits
Version 4.0	3/8/12	C. Price (IFMP)	New Maps
Version 5.0	9/8/12	M. Parsons, C. Price (IFMP)	New Edits
Version 5.1	28/11/12	A. Daly (Murrindindi Shire Council), C.Hajek (IFMP)	Edits following public comment
Version 5.2	4/12/12	C.Hajek (IFMP)	Replaced Fire history & Planned burning maps with updated versions & added disclaimer to beginning of attachment 7.
Version 6	25/11/15	C. Price (Murrindindi Shire Council)	Plan review and introduction of structural fire and hazardous material incidents.

Authorisation

This Plan was endorsed through a formal motion by the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC at their meeting on 24/10/15, for which the Chair of the committee will sign for and on behalf of all members of the MFMPC.

Document Title: Murrindindi Shire Council and Lake Mountain Alpine Resort Municipal Fire Management Plan

Version No: 6

Date of release: 26/11//2015

Approved by: **Mark Leitinger**

Chair

Murrindindi Shire Council and Lake Mountain Alpine Resort
Municipal Fire Management Planning Committee

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Signature

27. 11. 2015
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Date

Table of Contents

Figures

Tables

1. INTRODUCTION

1.1. CONTEXT AND BACKGROUND

Victoria has a long history of community, government and non-government organisations working cooperatively to combat the threat of bushfire, structural fire and hazardous material (hazmat) incidents. However recent challenges such as many consecutive years of dry conditions, an increase in people living in high risk areas and the occurrence of a number of major fires prompted the need for increased coordination and cooperation to secure fire safety across the state.

IFMP aims to achieve a consistent and effective means for fire management planning within Victoria through a commitment to cooperation, including information sharing and the building of collective knowledge.

– The Integrated Fire Management Planning Framework, State Fire Management Planning Committee

In response to these challenges the Victorian Government established an Integrated Fire Management Project (IFMP) Framework for Victoria in 2008.

IFMP provides a framework for consistent and effective fire management planning (see figure 1) across the fire management continuum, by providing a multi-agency approach, bringing together fire management planners and other stakeholders, including emergency service agencies, government departments, private organisations and the community. Working together they build relationships and share information to plan across public and private land tenures for all types of fire. IFMP is based on analysis and management of risk, uses best practices and builds on existing information.

Figure 1: Fire Management Planning
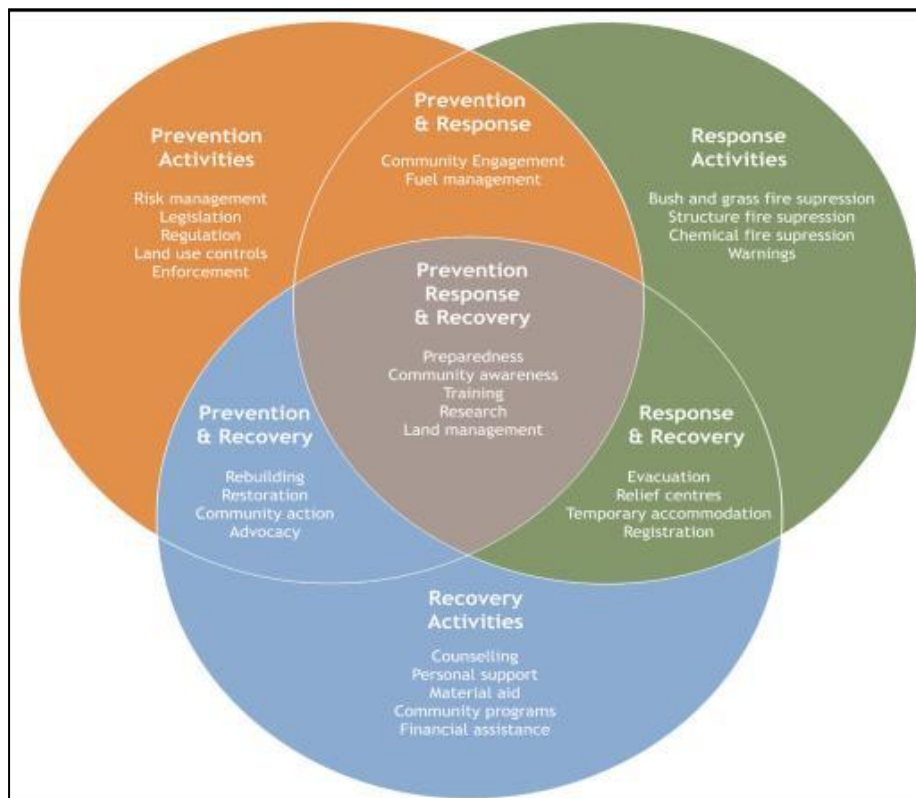
The framework provides structures, policies and procedures to help build on the existing spirit of cooperation and networks that already exist in fire management. It establishes a tiered system of state, regional and municipal plans that provide strategic direction to fire management in Victoria, as illustrated in figure 2 below.

Figure 2: Victorian Management Plans and Policies
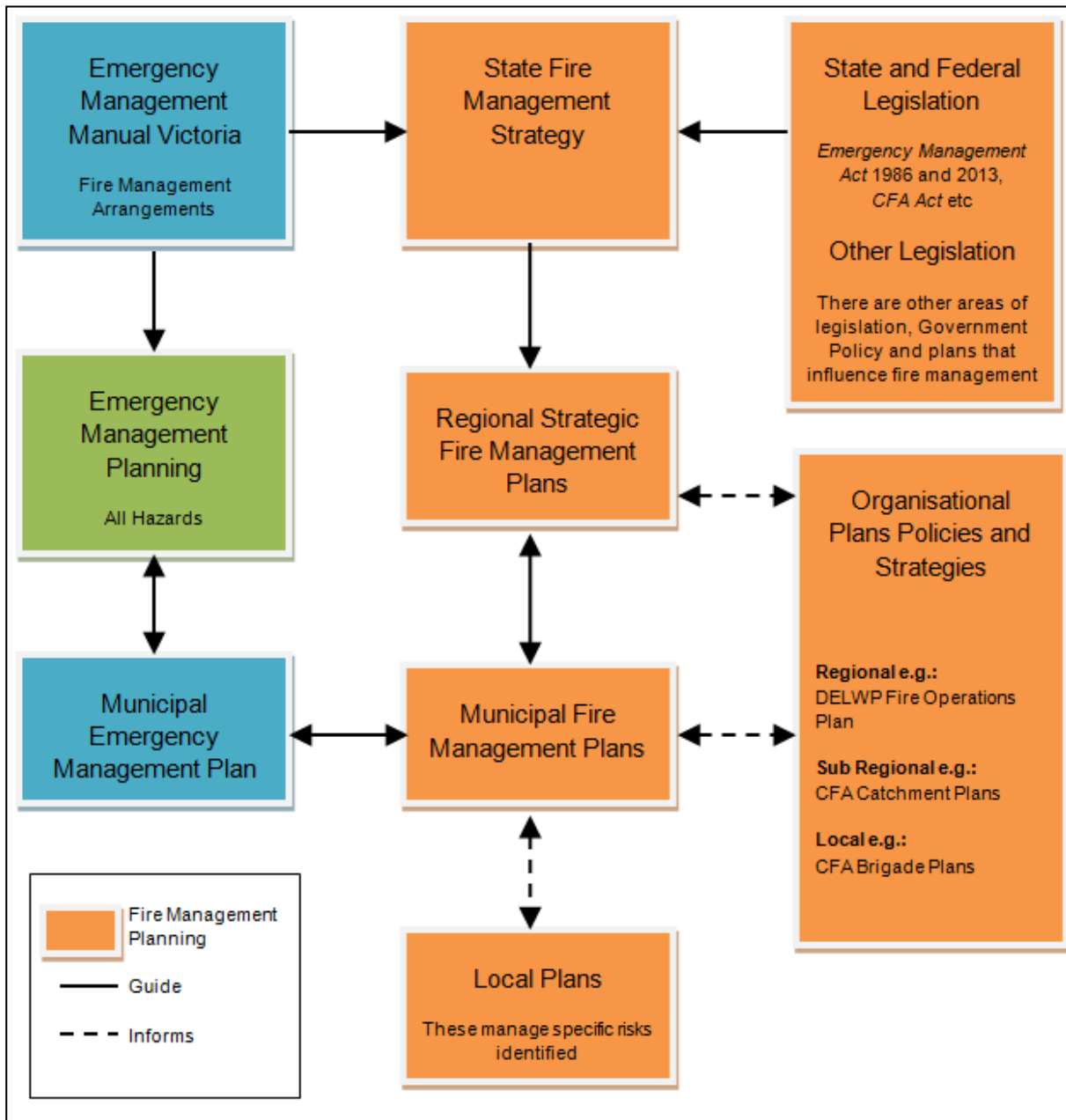
The purpose of the Municipal Fire Management Planning Committees (MFMPCs) is to provide a municipal level forum for building and sustaining organisational partnerships with regards to fire management; and to ensure that plans of individual agencies are linked effectively so as to complement each other. This is facilitated by MFMPCs having a membership consisting of representatives from key stakeholder organisations with respect to fire management within the municipality.

MFMPCs also act as a sub-committee of their respective MEMPC. *Part 6A: Guidelines for Municipal Fire Management Planning*, of the *Emergency Management Manual of Victoria,* outlines the suggested terms of reference for these committees, identifies their minimum core membership and requires the development of a MFMP. These guidelines were used when forming the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC and in the creation of its terms of reference.

Murrindindi Shire and Lake Mountain MFMPC membership consists of:

- Murrindindi Shire Council
- Lake Mountain Alpine Resort
- Country Fire Authority (CFA)
- Department of Environment, Land, Water and Planning (DELWP)
- Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

1.2. PERIOD AND PURPOSE

Organisation and agencies involved in fire management already have a range of activities, plans, policies and procedures that are directly involved with, or that impact on fire management. This MFMP builds on this existing work so as to chart and coordinate the implementation of measures in use across the municipality designed to minimise the occurrence and mitigate the effects of bushfires, structural fires and hazmat incidents. It also seeks to identify the need for adopting or developing new activities, processes and policies, and communicating this need to the relevant responsible authority.

In doing so it takes into consideration all aspects of fire management:

- Prevention – Regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated
- Preparedness – Arrangements to ensure that in the event of an emergency occurring all those resources and services that area needed to cope with the effects can be efficiently mobilised and deployed
- Response – Actions taken in anticipation of, during and immediately after an emergency, to ensure its effects are minimised and that people affected are given immediate relief and support
- Recovery – The coordinated process of supporting emergency affected communities in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.

MFMPs have a three year planning cycle and this plan has a three year duration commencing from the date of council endorsement. However it will be subject to annual review and modification as appropriate.

1.3. PREPARATION PROCESS

This MFMP has been developed in accordance with Part 6A of the Emergency Management Manual of Victoria and using the IFMP planning process as described in the IFMP Guide. This process follows a seven stage planning cycle as illustrated in figure 3 below.

- **Stage 1: Environmental Scanning** – establish a municipal base line from which fire management planning and decision making can be made and measured, including development of fire management objectives.

- **Stage 2: Risk Assessment** – identification, analysis and evaluation of the fire risks that potentially impact on the municipality.
- **Stage 3: Analysis** – analysis of treatment options for achieving the fire management objectives.
- **Stage 4: Decide** – select the most appropriate risk treatment options to achieve the fire management objectives.
- **Stage 5: Publish** –once the community and stakeholders have validated the draft MFMP, the relevant authorities endorse, publish and distribute it.
- **Stage 6: Deliver** - relevant organisations implement the agreed risk treatments in the MFMP.
- **Stage 7: Monitor and Improve** – track delivery and effectiveness of risk treatments so as to continually improve the MFMP's contribution to realising the fire management objectives.

Figure 3: Integrated Fire Management Planning Process
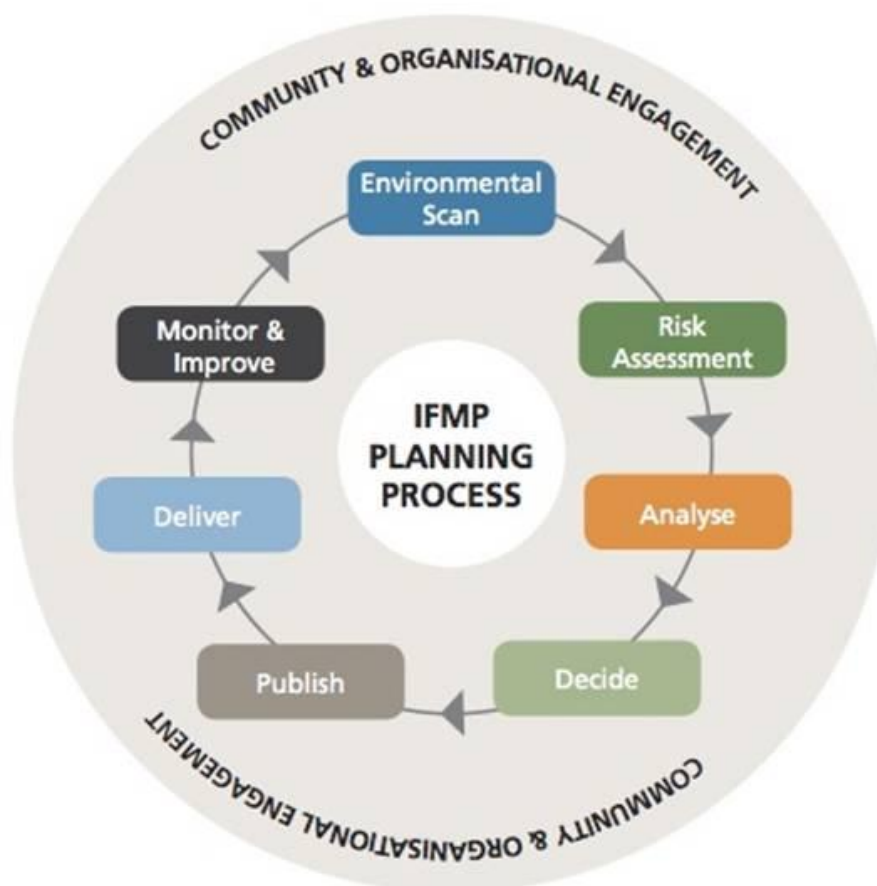
In the original iteration of the plan, the MFMPC met over a period of 12 months on a regular basis to work through the steps outlined above for the purpose of developing the MFMP. This commenced with formally establishing the Murrindindi Shire and Lake Mountain MFMPC as a subcommittee of the Murrindindi Shire Council and Lake Mountain Alpine Resort MEMPC and endorsing the terms of references based on those in Part 6A of the Emergency Management Manual Victoria. The first version of this plan had a focus predominantly on bushfire risk as directed by the then Fire Services Commissioner, Craig Lapsley. This current version has built upon that basis and now includes analysis of structural fire risk and hazardous material incidents.

The planning process used in the production of this plan is risk based and aligns with the International Standards Organisation (ISO) 31000:2009 (*Risk Management – Principles and Guidelines*). Figure 4 (below) describes the alignment of ISO 31000:2009 with the IFMP planning cycle.

All concerns identified were considered and defined as risk statements with the cause and impact clearly described. Each of these risk statements were then assessed using the State Bushfire Consequence Table for bushfire or the Community Emergency Risk Assessment (CERA) tables for structural fire and hazardous material Incidents. The State 'Likelihood Table' and 'Risk Assessment Matrix' (See Appendix 1c) were also utilised as endorsed by the State Fire Management Planning Committee.

Figure 4: IFMP Alignment with ISO 31000:2009

Stages of the IFMP Planning Cycle	Relevant aspect of ISO 31000:2009
Engagement Plan	Communicate and Consult
Environmental Scan	Establish the Context
Risk Assessment and Analysis	Identify the Risk, Analyse the Risk, Evaluate the Risk
Decide and Publish	Determine and Document the Treatment Options
Deliver	Treat the Risk
Monitor and Improve	Monitor and Review

2. ENGAGEMENT AND COMMUNICATIONS

Stakeholder engagement and participation is an essential element of fire management planning. Stakeholders are required to participate for a range of reasons, including (but not limited to):

- Legislative responsibilities in relation to fire management
- Leadership
- Provision of hazard expertise and technical advice
- Subject to hazard impact (directly and/or indirectly)
- Land tenure and management arrangements
- Expressed expectation
- Influenced and/or support mitigation

Stakeholder engagement is required during all seven stages in the IFMP planning cycle; the aim being for stakeholders to participate together in the collaborative development, delivery and monitoring of the MFMP.

Effective engagement with stakeholders in the development and implementation of the MFMP is an essential tool for drawing on existing knowledge and experience and to build support for and involvement in this plan.

All relevant communication and engagement tasks have been built around the model of public engagement developed by the International Association of Public Participation known as the 'IAP2 Public Participation Spectrum'. The IAP2 spectrum, detailed in figure 5 below, provides a framework for planning effective stakeholder engagement on any issue or planning document. It is used as the basis for communication and engagement planning during development and subsequent implementation phases of the MFMP.

Figure 5: IAP2 Public Participation Spectrum

Increasing level of public consultation and participation

	Inform	Consult	Involve	Collaborate	Empower
Public Participation Goal	Provide balanced information to stakeholders	Obtain public feedback on analysis, alternatives and decision	Work directly together to ensure issues are understood	Partner in each aspect of decision making	Place final decision making in the hands of primary stakeholders

2.1. COMMUNITY AND ORGANISATIONAL ENGAGEMENT PLAN

In accordance with the IFMP planning guide the MFMPC undertook a stakeholder analysis and used this as a basis for the development of a 'Community and Organisational Engagement Plan' (see Appendix 2C).

The stakeholder analysis consisted of a two part process; first identifying the key stakeholders who needed to be engaged in the MFMP's development and secondly determining the nature and level of their interest in fire management planning. This second step involved considering each

stakeholder in relation to eight different fire management roles which are described in Table 1 and four different stakeholder types as outlined in Table 2.

Table 1: Fire Management Roles

Role	Description
Fire Coordination	Bringing fire management agencies together to ensure effective response to an incident or emergency. CFA has legislated responsibility under the *CFA Act 1958* for the prevention and suppression of fires and for the protection of life and property in the country area of Victoria. In accordance with provisions in the *CFA Act 1958* and the *Forest Act 1958*, DELWP has fire management and fire suppression responsibilities for state forests and national, state and regional parks.
Land Owner/Manager Responsibilities	Landholder/managers are heavily involved in fire prevention and fire suppression on land under their control. They have legislated responsibilities to extinguish a fire burning on their land and to prevent fires from starting from the use of equipment and vehicles (*CFA Act 1958, Crimes Act 1958*). They are also required to comply with relevant local government laws, relevant planning or building permit conditions and conditions associated with permits to burn.
Response	Actions taken in anticipation of, during and immediately after a fire incident to minimise the impact of the fire.
Recovery	A coordinated process of supporting fire affected communities in the reconstruction of physical infrastructure and restoration of emotional, social, economic and physical wellbeing.
Community Education	Community education is learning and social development, working with individuals and groups in their communities using a range of formal and informal methods
Community Care	Community care is about identifying and catering for groups or individuals with specific needs, before during and after fire.
Asset Protection	Asset protection involves protecting key community infrastructure such as power, water supplies, roads, gas pipes and protecting community assets such as parks and the environment. Asset protection can also involve the protection of private assets such as housing, plantations, crops and fences.
Regulatory	The issuing of permits for lighting fires. The development of and compliance with planning controls and permits for developments and building that take into account fire risk/management. The regulation and issuing of permits involving vegetation removal or fuel reduction activities for fire management purposes.

Table 2: Stakeholder Type and Engagement Level

Stakeholder Type	Description	Participation Level
Internal	Formal responsibilities for IFMP process and outcomes	Collaborate and empower
Primary	MFMPC membership, responsibility for development of the plan, communication and engagement across and within organisations rest with these organisations	Collaborate and empower
Secondary	RSFMPC membership or fire management role within municipality, may be requested to provide specific inputs, dependent upon outputs, or requested to be involved in specific tasks,	Involve and consult
Tertiary	Strong interest in outcomes and may have valuable information/viewpoints to share	Inform and consult

Once a stakeholder had been categorised, the appropriate level of participation in the process and the different types of engagement activities required were determined. The results of this

stakeholder analyses and the resulting Community and Organisational Engagement Plan can be found in Appendix 2C.

2.2. COMMUNITY ENGAGEMENT

During the development phase of the MFMP the Murrindindi Shire and Lake Mountain MFMPC's communication and engagement efforts were focused primarily upon the key stakeholders. However a number of community groups were identified as tertiary stakeholders and engaging with them and the broader community is seen as a critical component to the long term success of MFMP.

This community engagement process is very much seen as an ongoing responsibility of the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC and it is expected to gain prominence going forward once the plan is endorsed and especially during review periods. Consequently the Community and Organisational Engagement Plan (Appendix 2C) should be viewed as a live and evolving document that will be shaped according to the MFMPC's needs over time. In this manner it will be able to guide the process of broader community engagement with additional activities and details being incorporated as required.

It is also anticipated that in addition to the activities attributed to the MFMPC, individual key stakeholders will be utilising their existing processes and undertaking their own community engagement activities in support of IFMP and the MFMP.

3. ENVIRONMENTAL SCAN

Environmental scanning involves identifying key themes, issues, trends and gaps that may affect or influence fire management. It establishes the base level of knowledge and understanding required for supporting risk identification, risk assessment and risk treatment within a fire management context.

It involves gathering and interpreting data and information relevant to fire management, so as to make predictions, assumptions and conclusions concerning fire risk for the municipality over the period of the plan. It also provides the basis for identifying fire management objectives and decision making with regard to selecting strategies to achieve these objectives.

In undertaking this environmental scanning exercise, the MFMPC gathered information relevant to fire management from a wide range of sources. Data sources used included the CFA's Victorian Fire Risk Register (VFRR), DELWP fuel loading and natural values data, Consequence of Loss data and ABS Index of Relative Socio-Economic Disadvantage (IRSD). This information was interpreted using the committee's extensive knowledge and experience with fire management to make predictions, educated assumptions and draw conclusions concerning fire risk for the municipality over the period of the plan.

3.1. MUNICIPAL PROFILE

3.1.1. LOCATION AND TENURE

The Murrindindi Shire, located one and a half hours to the north-east of the City of Melbourne, has an area of 3,889 square kilometres. It is a popular tourist area with a number of National Parks, State Parks, fertile farming land, the Goulburn River and Lake Eildon.

Murrindindi was one of the municipalities most heavily-affected by the 2009 'Black Saturday' bushfires. Approximately 40% of the Shire was burnt, which by area represented 154,355 hectares and destroyed 1397 properties.

 46% of the total land area of the Municipality is forested public land (1,788 square kilometres) consisting of State Forest, Parks and Reserves and other public land. A large proportion of this land is mountainous and heavily forested. The Department of Environment, Land, Water and Planning (DELWP) and Parks Victoria manage the majority of this public land. Other major land holders include the Lake Mountain Alpine Resort Management Board, Murrindindi Shire Council and Hancocks Victorian Plantations.

Murrindindi Shire borders the Lake Mountain Alpine Resort which is a member of the Murrindindi Shire and Lake Mountain MFMPC and MEMPC. Lake Mountain Alpine Resort and Murrindindi Shire Council have an MOU for shared emergency planning with Murrindindi Shire Council acting as the 'principal' agency on behalf of both groups in emergency management planning (see MEMPC Appendix A2). Lake Mountain Alpine Resort is located 21 kilometres east of Marysville.

The resort suffered extensive damage in the 2009 fires. It has historically been a winter resort with over 30 kilometres of cross-country skiing trails. More recently the resort has been diversifying and focusing on summer activities such as bushwalking and mountain bike riding with visitor facilities open through the summer period.
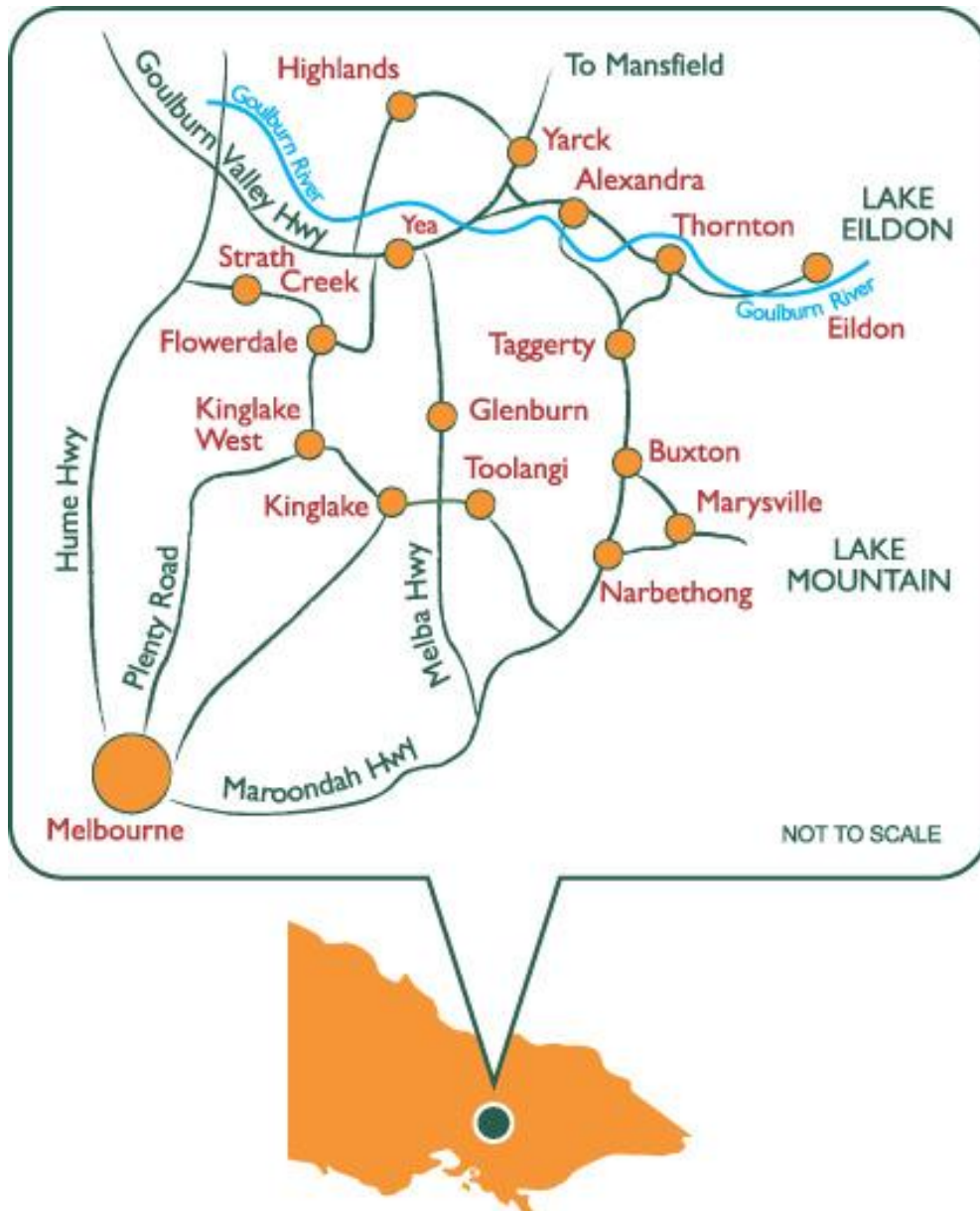
3.1.2. POPULATION AND DEMOGRAPHICS

Like many regional areas in the Hume region Murrindindi Shire has an ageing population. 18.5% of the population is over 65 and this is forecast to increase. According to the 2011 Australian Bureau of Statistics (ABS) Census approximately 2000 people received the aged pension in Murrindindi Shire.

The Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD) ranks areas according to their relative socio-economic disadvantage. The average score for areas across Australia is 1,000 and areas with a score below 1,000 are more disadvantaged than the national average. Those areas with a score above 1,000 are less disadvantaged.

Murrindindi Shire has a score of 997 which places it within the fifth decile of the index, and suggests it has an average level of disadvantage[1]. 14% of residents in Murrindindi Shire live in areas considered extremely socially disadvantaged compared with the national average of 20%. Towns with the highest level of disadvantage in the Shire are Yea and Eildon.

Murrindindi Shire has a similar proportion of overseas-born residents and those that speak a language other than English at home, when compared to other parts of rural Victoria. Approximately 11.5% of the population was born overseas, and in the region of 3.5% speak a language other than English at home. In general the level of cultural diversity is lower in the Murrindindi Shire than other areas of rural Victoria.

In the 20011 Census 5.4% of the population of Murrindindi Shire are recorded as requiring assistance which includes persons with a disability or the elderly that require services. This is relatively equivalent with other rural areas across Victoria and the percentage of people requiring assistance in the greater Hume Region (5.7%).

 Despite efforts to attract employment and investment in regional areas of Victoria over the last 10 years, it is estimated that Murrindindi Shire's growth forecast will remain low. Murrindindi Shire has high levels of youth unemployment (at around 12%), which is consistent with the level across rural Victoria. Murrindindi Shire also shows elevated unemployment levels amongst the 20 to 34 year old age group when compared to other areas in rural Victoria. The rate of unemployment amongst Murrindindi residents generally declines with age and has been persistently lower than the rural Victoria average. The unemployment rate in December 2013 was 4%, substantially lower than the rural Victorian average of 5.4%.This unemployment data is sourced from the 2011 ABS Census.

The shire is not in a regional transport corridor and has large numbers of 'lifestyle' blocks and holiday homes. Approximately 30% of the Shire's rate payers are non-residents.

In 2008-09, Murrindindi Shire experienced a decline in population due to the bushfires of February 2009 in which nearly 1,400 homes were destroyed. In that period, the population fell by approximately 1,000 people or 7.1%. In 2009-10 the population increased by 120 people (0.9%) to 13,500, reflecting rebuilding within the area. Data from the 2011 Australian Bureau of Statistics Census shows Murrindindi Shire to currently have a population of 13,454, approximately a 5% decline from the 2006 Census total of 13,672. The impacts of the 2009 bushfires on populations levels is only speculative at present however as many of the people affected by the fires are still living in temporary or rental accommodation, still to decide if they will rebuild or permanently relocate. Many shire residents have moved to nearby unaffected towns within the Shire.

The three main population areas of Kinglake/Kinglake West, Alexandra and Yea, although historically maintaining a steady growth pattern, have changed demographics since the 2006 Census. In 2006 Kinglake and Kinglake West had a combined population of 3,007 which has reduced significantly since the impacts of the February 2009 fires to a combined population of 2,353; a reduction of approximately 22%. Alexandra however has increased significantly in size from 2,141 people in the 2006 Census to 2,656 in 2011, a 24% increase. Similarly, Yea's

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[1] Australian Bureau of Statistic, Murrindindi Statistics http://statistics.murrindindi.vic.gov.au/

population has increased from 1,525 persons to 1,595, a 4.5% increase. All have a mixed age base with a median age of 42 across the shire.

There is no permanent population at Lake Mountain Alpine Resort.

3.1.3. NATURAL ENVIRONMENT

Murrindindi Shire is situated in Central Victoria and is located on the north fall of the eastern section of the Victorian Highlands. The topography of the shire ranges from flat grazing land in the west, to the mountainous eastern ranges, including the alpine areas around Lake Mountain Alpine Resort. The central part of the municipality generally follows the Goulburn River valley. The terrain in eastern areas is generally hilly to mountainous, particularly south and east of Alexandra. The area has a number of national parks, state parks and reserves, which attract large numbers of visitors.

The western side of Lake Eildon and the township of Eildon are situated in Murrindindi Shire. The lake is a major tourism draw card and a large number of tourists travel through and stay for its 'natural values'. Murrindindi Shire is serviced by a large number of accommodation types from Motels to caravan parks and has a large number of bush camps, some of which are remote. Recreational activities include bushwalking, skiing, water sports (on Lake Eildon and the Goulburn River), camping, four–wheel driving and cycling to name a few.

Lake Mountain Alpine Resort's natural environment was heavily impacted by the 2009 bushfires. Areas of Snow Gum in the alpine-zone were reduced significantly in the fires and survival rates were extremely low. It was estimated that only 2% of understorey remains unburnt surrounding the resort. Other zones, including those with Montane Forest, dominated by Alpine Ash, cool temperate rainforest containing Myrtle-Beech and Tea-Tree were also heavily impacted. The majority of Alpine Ash was killed in the fires but regeneration is occurring. Regrowth of many Myrtle-Beech trees is occurring through the Montane Forests. Wetland communities comprising the heath and bog communities on the plateau and ridge tops were also heavily impacted but are slowly recovering.

The Leadbeater's Possum *(Gymnobelideus leadbeateri),* Victoria's faunal emblem, is known to occur in the municipality in a number of montane ash forests, alpine ash forests and sub-alpine snow gum woodland areas such as Mount Bullfight Nature Conservation Reserve. The fires of February 2009 destroyed approximately 45% of Leadbeater's Possum habitat across the Central Highlands, resulting in large declines in the remaining populations[2]. In April 2015 its conservation status under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* was upgraded to critically endangered (*Ibid*) as a result of serious population decline post 2009. The primary threats to the Leadbeater's possum are habitat loss and deterioration of habitat quality. In modelling future population decline, Burns et al (2014) determined that the existing populations of Leadbeater's Possum have a 78% to 92% chance of declining substantially over the next 50 years[3].

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[2] Threatened Species Scientific Committee, *Conservation Advice Gymnobelideus leadbeateri* , 2015: http://www.environment.gov.au/biodiversity/threatened/species/pubs/273-conservation-advice.pdf

[3] Burns EL, Lindenmayer DB, Stein J, Blandchard W, McBurney L, Blair D and Banks SC (2014). *Ecosystem assessment of mountain ask forest in the Central Highlands of Victoria, south-eastern Australia.* Austral Ecology.

Until recently, Lake Mountain was also home to the Leadbeater's Possum. It is thought that over 95% of the Lake Mountain population was decimated as a result of the 2009 fires[4]. Pre 2009 Lake Mountain was thought to contain over 300 individuals. In 2013 the decision was made to rescue the three known remaining individuals from the Lake Mountain area and bring them to the Healesville Sanctuary[5].

Murrindindi Shire is traversed by the Goulburn River and a number of its tributaries occur in the municipality including the Rubicon River, Acheron River, Taggerty River, Steavenson River, Little Steavenson River, Yea River, Murrindindi River and the King Parrot Creek. The Goulburn and its tributaries flow from the ranges in the east and south, into floodplains in the west and north with high quality soils that are used extensively for agriculture. Since the European introduction of livestock and farming into the municipality, the flood plains, grasslands and foothill valleys have been altered significantly as a result of vegetation clearing, grazing, soil compaction and the spread of weeds. Despite the prevalence of agriculture, the municipality still has some large areas of remnant vegetation in both public and private land.

A large proportion of the Shire is forested with a number of substantial parks including Kinglake, Yarra Ranges and Lake Eildon National Parks and Cathedral Range State Park. All of these parks excluding Lake Eildon National Park were heavily impacted by the 2009 bushfires. Since then many of the facilities in these areas have reopened or are being restored, including infrastructure at Steavenson's Falls near Marysville and trails (walking and skiing) at Lake Mountain Alpine Resort

A large section of Murrindindi Shire in the south east is a mixture of state reserves in which 600-700 hectares of hardwood is harvested each year in clear-fell and seed-tree operations.

There are 18 distinct Ecological Vegetation Classes (EVCs) in the Murrindindi Shire. EVCs are mapping units used for biodiversity planning and conservation, which include information about plant communities and forest types. EVCs also include ecological information about the species present and variations in the physical environment such as aspect, elevation, geology solid, landforms, rainfall, salinity and climatic zones[6] .

Of the 2168 recorded plant species in the municipality, eight are listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988* (*FFG Act 1988*). Two of these are also listed as endangered under the Federal *Environment Protection and Biodiversity Conservation Act 1999* (*PBC Act 1999*).

There are 393 recorded species of native fauna across Murrindindi Shire. Of these, 42 are listed as threatened under the *FFG ACT 1988* and a further 14 listed under the *EPBC Act 1999*.

Biodiversity Action Plans (BAP) have been developed in partnership between DELWP, DEDJTR, the Catchment Management Authorities (CMAs), local government as well as non-government organisations. The BAP's purpose is to define those areas with the highest significant biodiversity assets and determine activities with the most return on investment in biodiversity across the state.

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[4] DEPI, 2014, *Leadbeater Possum Action Statement*,http://www.depi.vic.gov.au/environment-and-wildlife/wildlife/leadbeaters-possum

[5] Friends of the Leadbeater's Possum website, 2015, *Lake Mountain Recovery,* http://leadbeaters.org.au/projects/lake-mountain-recovery/

[6] DSE, 2008. *Climate change in Goulburn Broken*, Department of Sustainability and Environment, Victoria, Melbourne

The Goulburn-Broken catchment is divided into 20 individual BAP areas or zones with corresponding conservation plans. There are 5 of these that apply to the municipality. The BAP plans, available to all agencies and land managers, will be used to guide Murrindindi Shire Council's actions regarding the conservation of high biodiversity values in the region.

3.1.4. LAND USE, ECONOMY AND EMPLOYMENT

The economy of the region revolves around tourism, forestry, mixed (traditional & intensive) styles of farming, grazing and light industry. Land use is predominantly agricultural and quite diverse, with grazing on the flatter land in the north and west. In the central areas mixed farming and hobby farming occurs including mixed fruit, grapes, wool, olives, nurseries, turf and seed production, exotic animals (alpaca, deer and rabbits) and cattle production. There are some areas of irrigation adjacent to the Goulburn River.

Agriculture is an important industry in the municipality annually grossing $82.7 million. Agricultural land utilizes 144,000 hectares in Murrindindi Shire, which is predominantly used for the raising of animals. The Shire has over 115,000 lambs and sheep, 400 dairy cattle, and 100,000 beef cattle. Agriculture, forestry and fishing employs 12% of the Murrindindi workforce with the other predominant industries including manufacturing 10%, health and community services 10%, construction 10%, retail trade 9%, education 9%, and accommodation, restaurants and cafes 9%. The size of farms and rural holdings is gradually declining in Murrindindi.

Fish production is a major industry in Murrindindi Shire with a number of fish farms and trout hatcheries. Snobs Creek Hatchery for example, breeds and grows a number of native species including Murray Cod and Golden Perch and has the only Australian population of Chinook Salmon. They also breed trout and along with other trout hatcheries in Murrindindi account for 83% of the trout production in Australia. Over 1 million fish and fingerlings are released per annum from Snobs Creek Hatchery alone into Victorian rivers and waterways.

Outdoor education is an expanding sector within the shire that provides significant employment opportunities in the outdoor education/recreation area. The range of business activities includes school camps, mobile outdoor program providers, tertiary education institutions and corporate training organisations.

Murrindindi Shire is home to a number of major industries and employers such as Kinross Farm who are of national significance. Every week Kinross Farm provides about one million "live" eggs to Melbourne company CSL, who is the only manufacturer of flu vaccines in the southern hemisphere. Located in the Kinglake region, Kinross Farm is a major employer in the Shire. Not only producing eggs for vaccines, Kinross Farm has a large commercial retail market in the production of eggs for the food industry.

HVP and a number of smaller businesses run commercial native hardwood extraction in State Forests and a number of softwood plantations occur throughout the area, particularly in the south and east. The closure of Demby's Toolangi Mill in 2007 followed by Gunns Timber Mill in Alexandra in 2012 caused the loss of over 50 jobs directly related to mill operations and numerous others as a result of downstream impacts. These mill closures had serious local economic impact and are symptomatic of growing viability issues within the timber sector.

The municipality is well serviced by roads. However, in the mountainous sections some of the roads are steep, narrow, have restricted access or are of a lower standard. The Goulburn Valley Highway, Melba Highway and the Maroondah Highway traverse the Municipality

Lake Mountain's income is based solely on tourism. Net income was around $1.5 million in 2005 but rose to over $6.5 million in 2009. After the destruction of the resort facilities in the 2009 fires, a reduction in overall net income has generally been experienced by the resort in recent years. The winter of 2014 however saw visitor numbers increase to 131,692 which is the highest level of visitation since 2004 and is well above the 10 year average of 93,810. Revenue and winter visitors at the resort have increased by an impressive 81% from 2013 to the 2014 winter season. Total income for the 2014 season was $5.6 million. Similarly, Green Season (or non-snow season) visitation has also continued to grow at the resort. An estimated 60,631 people visited Lake Mountain during the non-winter months in 2014.

3.1.5. TRADITIONAL OWNERS

The majority of Murrindindi Shire lies in the traditional territory of the *Daung wurrung* (also spelt *Taungarung*) language group, which spread across much of the central region of Victoria. It is suggested that areas in the south of the Shire, including areas of the Kinglake National Park, are located in the Traditional lands of the Wurundjeri or Woi wurrung people.

The ethnographic sources suggest that the *Daung wurrung* group was composed of nine clans, occupying the Broken, Delatite, Goulburn, Coliban and Campaspe watersheds (Barwick 1984[7]; Clark 1990[8]).

According to Clark (1990) the majority of lands in the Murrindindi Shire area appear to have been occupied by the *Yowung-illam balug* clan of the *Daung wurrung*. This clan was known to have occupied land near the Howqua River quarry (*Youang-illum* stone quarry), Mount Battery, Alexandra, the Upper Goulburn River at Mansfield, sources of the Goulburn River and Hunter and Watson's 'Wappan' Run (Clark 1990; Barwick 1984).

There is one Registered Aboriginal Party (RAP) in the area of Murrindindi Shire; the Taungurung Clans Aboriginal Corporation. RAPs have responsibilities relating to the management of Aboriginal Cultural Heritage under the *Aboriginal Heritage Act* 2006. These responsibilities include evaluating Cultural Heritage Management Plans, providing advice to applications for Cultural Heritage Permits, making decisions on Cultural Heritage Agreements and offer advice or applications for Protection Declarations.

For further information about RAPs and their contact details see the Department of Premier and Cabinet website:

- http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/registered-aboriginal-parties

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[7] Barwick, D. 1984, 'Mapping the Past: An Atlas of Victorian Clans 1835-1904', Part 1, *Aboriginal History* 1984, 8(2):100-31

[8] Clark, I. 1990. *Aboriginal Languages and Clans: An Historical Atlas of Western and Central Victoria*, Monash Publications in Geography No. 7.

3.1.6. CLIMATE

There is a large variance in the terrain throughout the Murrindindi Shire resulting in several distinct microclimates. The municipality generally enjoys a temperate climate apart from the alpine areas of Lake Mountain, with an average summer maximum temperature of approximately 29° C.

Average summer temperatures differ widely across the municipality; Alexandra has a summer maximum average of 28.6 C° and Toolangi, in the foothills to the south west, 22.2 °C. They both vary significantly from Lake Mountain which sees average summer temperatures between 6.6°C to 15.5 °C. Toolangi is generally cooler than Alexandra at any time of year although its winter minimums are milder. Winter conditions in the Alpine areas average -2.8 °C to 1.6 °C.

Prolonged drought occurred throughout the Shire in the late 1990s to 2009, followed more recently by flooding events in 2010, 2011 and 2012 causing flooding in some low lying areas. During 2000-2010 some parts of the Shire recorded up to a 30% reduction in average rainfall. Most of the rain falls occur in the winter and spring in Murrindindi Shire, with annual average rainfalls ranging from 710 mm at the Alexandra Post Office to 1363.1 mm at Toolangi. There is a large variation in rainfall in Alexandra with the lowest (346mm) rainfall recorded in 2006 and the highest in 1973 (1089 mm). Although a wetter area in general, Toolangi also has a large variance in yearly rainfall from 882.9 mm (1997) to 1826 mm (1960). The hilly and mountainous areas of the shire are consistently wetter than the lower foothills and plains.

The trend of increasing temperatures and increasingly common weather extremes is continuing across Australia. December 2014 recorded the warmest spring temperatures since records began[9] which was only 0.1 degree warmer than the previously recorded warmest spring which occurred in 2013. Favourably however, the 2014-15 fire season has been moderate due to lower than average temperatures. Had conditions dried out and a 'normal' summer been preceded by such a dry spring, the fire weather for Victoria and Australia more broadly would have been much more significant.

The future climate in the greater Goulburn-Broken region is expected to become hotter and drier than it is today[10]. It is also expected that there will be a larger proportion of hotter days, fewer frosts and a greater incidence of drought[11]. Higher intensity, but lower predictability, of rain events is also likely to occur with less rain available for irrigation. These climatic changes will influence and possibly increase the likelihood of fire in the municipality.

By 2030 it is predicted that the average temperatures in the region will increase by 0.8°C and by 2070, depending on emissions, temperatures will increase on average by 1.4°C to 2.7°C. The climate is likely to become increasingly erratic with higher occurrences of heat waves, and storms. These climatic changes will also make fire behaviour harder to predict.

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[9] Australian Bureau of Meteorology, *Special Climate Statement 50 – Australia's Warmest Spring on Record*, 2 December 2014

[10] CSIRO and BOM 2012. *State of the Climate 2012*, Commonwealth Scientific and Industrial Research Organisation, Bureau of Meteorology.

[11] DSE, 2008. *Climate change in Goulburn Broken*, Department of Sustainability and Environment, Victoria, Melbourne

3.2.BUSHFIRE RISK

3.2.1. BUSHFIRE HISTORY

Murrindindi has a long history of bushfire. There have been 4 major bushfires in the municipality since 2000 which include the Castella (Toolangi State Forest) fires of February 2004, Mount Torbreck (State Forest) fires of April 2004, Kanumbra ("Brilliant" fire) New Year's Eve 2005, Kinglake/Glenburn-Yea/Highlands fires of late January/February 2006 and the 7 February 2009 catastrophic fires across the State. A table of the entire known fire history is shown below in Table 3.

The bushfires of February 2009 had a profound effect on the Murrindindi Shire. There were 95 people killed and 1539 square kilometres, or 40% of the Shire, were burnt. The bushfire had a catastrophic impact on the communities of Murrindindi and its businesses, tourism and natural environment were severely impacted as a result. 1397 houses were destroyed as well as 3533 kilometres of fencing. Flora and fauna were also severely impacted: 5 threatened species of fauna listed under Victoria's the *Flora and Fauna Guarantee Act 1988* occur in the burned areas, as well as three species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Table 3: Fire History in Murrindindi Shire

Date	Details
1824 (Dec)	Messrs Hume & Hovell reported major fires in this area when exploring
1845 (Feb)	Fires in Yea district burned for many days and covered large areas
1851 ("Black Thursday")	Major state-wide fires. One woman & five children burnt to death at Happy Valley, Flowerdale. Plenty Ranges badly affected
1877	Fires across Victoria particularly in timbered country
1889	Major fires in Yea district following severe flooding during prior winter / spring
1898	Bad outbreaks Narbethong, Marysville, Healesville, Kilmore, Seymour
1899	Major fires Yea, Broadford, Kilmore, Seymour
1900	Bad fires Yea & Kilmore. Yea severely threatened. This fire burned for some weeks in Yea district
1901	Large fires Yea, Alexandra, Mansfield, Kilmore, Broadford, Longwood
1902	Outbreaks of large size Molesworth, Broadford, Kilmore
1906	Large Fires at Alexandra & Kilmore
1922 (13 Feb)	Fire originated in Highlands - Caveat area and covered significant area. Other outbreaks this year particularly in forested areas
1926	Disastrous state-wide fires; lives lost at Kinglake. Hotel, church, public hall and houses lost
1927(Feb)	Rabbit poisoners started fire in Highlands area which burned to Cathkin. Stopped on north side of Goulburn River
late 1920's	Outbreak started near Alexandra. Burned through hilly country north of the Goulburn to almost Eildon. Burned with astonishing speed according to reports
1939 (13 Jan)	Major fires across Victoria, particularly in forests. 71 lives lost, 69 sawmills and 700 homes destroyed. Rubicon, Toolangi, Black Spur severely affected

Date	Details
1944	Serious outbreaks at Alexandra, Toolangi (Nov), Molesworth and other areas
1950	Large outbreak started on railway line near Native Dog Creek and burnt to Whanregarwen Road. One person badly burned
1951	Whanregarwen area 4,000 acres
1957	Serious outbreak Acheron - Thornton area
1959 (12 Jan)	Fire started at Yarck fanned by strong northerly. 10,000 acres including stock, fencing
1962	Kinglake threatened by major fire starting near St Andrews
1969 (8 Jan)	Extensive areas of Yea and Alexandra districts burned involving loss of one life, 30 houses, large stock and fencing losses. Much of former Shires of Yea and Alexandra were burned. Points of origin - Acheron Cutting, Ghin Ghin & Junction Hill
1981 (19 Mar)	Dairy Creek Road area - Yea 10,434 hectares
1982 (Nov)	Fire started near Wandong. Burned to Wallaby Creek area -Mt Robertson and into King Parrot Valley
1983 ("Ash Wednesday")	Ash Wednesday fires across Victoria. Marysville threatened by Warburton outbreak
1985 (15 Jan)	Acheron - Taggerty- Thornton area
1991	Significant fires at Ghin Ghin and Thornton involving thousands of hectares, and Strathbogie area which spread towards Merton
2004 (Feb)	Significant fire at Mt Torbreck (DELWP land) 637 hectares burned
2004 (April)	Castella (DELWP land) 100 hectares lost
2005(Dec 31)	Kanumbra ("Brilliant" fire) significant grass fire 500 hectares burned
2006 (late Jan)	Significant fires at Kinglake (Parks Victoria/DELWP land); Glenburn/Yea and Highlands (Loss of life to one CFA volunteer on fire front)
2009 (Feb 7) ("Black Saturday")	Catastrophic fires across the State of Victoria and within the southern areas of the Murrindindi Shire, which caused devastation to the areas of Marysville, Granton, Narbethong, Buxton, Taggerty, Toolangi, Castella, Kinglake, Kinglake Central, Pheasant Creek, Kinglake West, Flowerdale, Strath Creek, Glenburn areas. The number of dwellings destroyed by this fire was 1,397. Significant loss of life also occurred resulting in 95 deaths within Murrindindi Shire.

To describe the effect of fire in the municipality, it is necessary to understand the fire history of the shire. This can be done by examining the number and type of Fire Danger Indexes (FDI) and Total Fire Bans (TFBs) over time for the municipality. FDIs are determined based on a range of meteorological factors including historical data (days since last rain, drought index) and current data (temperature, humidity, wind speed). Fire Danger Ratings (FDR) describe ranges of FDIs, and can be based on either historical data (actual FDR) or a combination of historical or forecasted weather parameters when predicting future FDRs. FDR is therefore a function of climate, however due to the significant difference between forest fire and grass fire conditions,

two different FDI meters have been developed. FDI is also a factor used in the decision making process concerning the declaration of TFB days.

The following figures provide a historical picture of the fire situation in the Municipality. Figure 7 gives us the average breakdown of the Municipality's fire season across the Moderate to Code Red categories of the FDR range from 2004-2011. Figure 8 describes the annual variation between each FDR category over different fire seasons for 2004-2011. Finally figure 9 is a record of the number of TFBs declared within the Municipality (State-wide & Regional) over the last 20 years. What these statistics indicate is that the Municipality has a highly variable fire season, but it can expect to experience some Total Fire Bans (TFB) level days with associated conditions every year, with more severe conditions occurring on a regular if not annual basis.

Figure 7: Murrindindi Shire Fire Danger Rating History in Forest and Grass (Average from 2004-2011)

	04/05	05/06	06/07	07/08	08/09	09/10	10/11
Low-Moderate	72	80	81	85	106	74	71
High	16	32	55	52	39	28	6
Very High	5	13	23	16	15	12	2
Severe	1	3	3	1	5	0	0
Extreme	0	0	0	0	0	0	0
Code Red	0	0	0	0	1	0	0
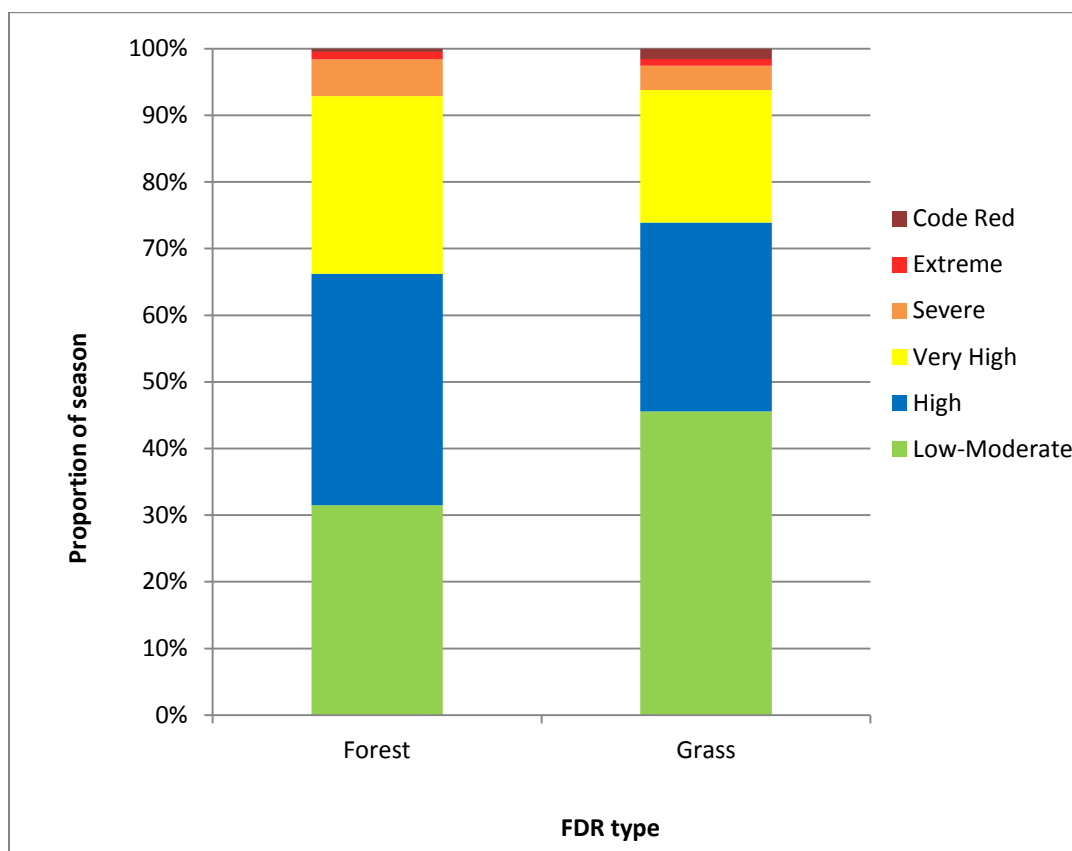
Figure 9: Historical Total Fire Ban Day (TFB) declarations for Murrindindi Shire (From 1994 to 2015)
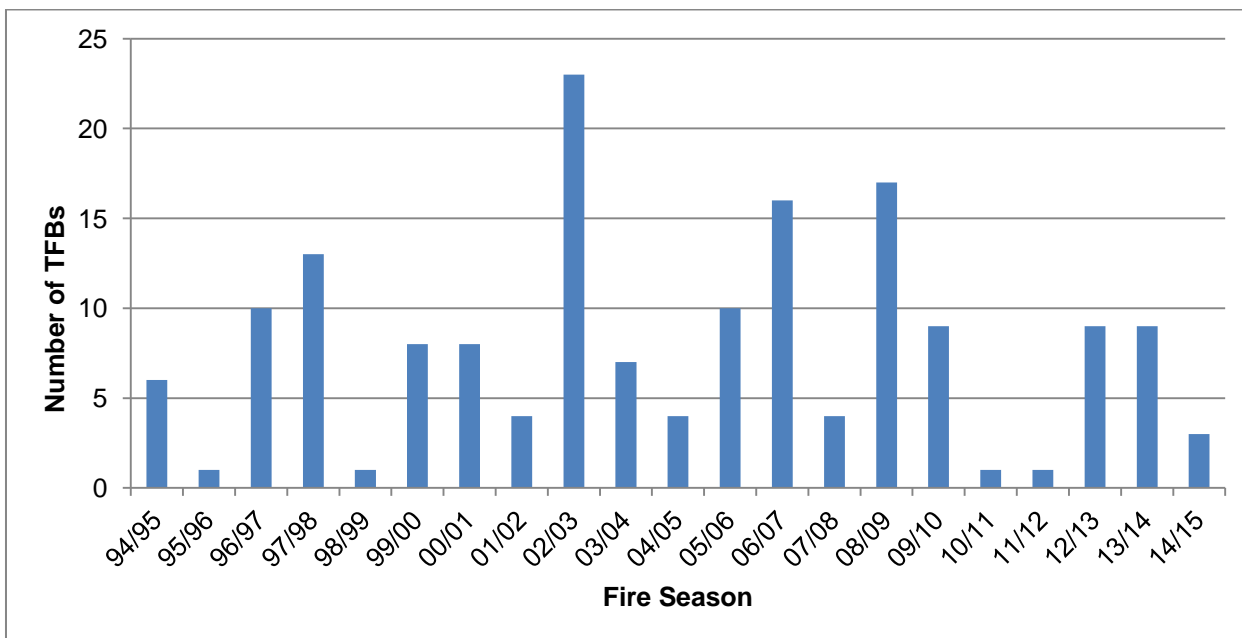
3.2.2. STRATEGIC IMPLICATIONS OF BUSHFIRE

Bushfire can occur in any type of vegetation, such as grassland, trees, crops or shrubs. This section describes the Murrindindi municipality and factors that increase the likelihood of a fire

starting and spreading across this area. The MFMP is the strategy that categorises risk and identifies appropriate treatment to address improved fire safety measures across the municipality.

Murrindindi Shire has a range of assets and features which make it a vibrant place to work live or visit. These include large townships, small communities, and rural areas, industries such as agriculture, agribusinesses and tourism and important infrastructure for essential services such as transport, power, and communications. In addition to the built environment the municipality boasts a range of natural assets such as good quality water resources and extensive native forests which are valued for their environmental, commercial and visual appeal.

The municipality of Murrindindi has experienced a number of fires over the years and was particularly impacted by the 2009 'Black Saturday' Fires. The combination of topography, climate, vegetation, coupled with the increasing number of people living in and visiting high fire risk localities during the fire danger period poses a significant issue for the municipality.

3.2.2.1. VEGETATION AND TOPOGRAPHY

The vegetation and topography of the municipality create a number of challenges for fire management. The shire is heavily treed with 48% tree cover predominantly in the mountainous sections spread throughout of the shire including the sub alpine and alpine areas around Lake Mountain Alpine Resort. These areas have a number of steep escarpments and highly varying topography, are heavily vegetated, have limited access or egress and have a number of water courses flowing through them.   Murrindindi Shire also has a number of neighbouring municipalities with a large percentage of tree cover and fires can spread from these municipalities into Murrindindi Shire or from Murrindindi Shire into these municipalities (e.g. Yarra Ranges). All of these factors combine to make fire control and response difficult in Murrindindi Shire.

A number of major rivers and streams flow through the municipality including the Goulburn River, the Rubicon River, Acheron River, Taggerty River, Steavenson River, Little Steavenson River, Yea River, Murrindindi River and the King Parrot Creek and associated river valleys. The Goulburn River runs east to west through the Shire with its tributaries draining from both the north and south. Although providing a reliable water resource and a natural fire break, access across these major rivers and streams is generally restricted to bridges and crossing points which may delay emergency response times.

Bushfire threat is not confined to forested environments and the threat of grass fires is a significant one throughout the shire. While grassfires may have lower intensities and flame heights than forest fires, the combination of open ground and fine fuels can produce very fast moving destructive fires.

3.2.2.2. WEATHER AND CLIMATE IMPACT ON BUSHFIRE RISK

Weather conditions and climate also impact on fire management in Murrindindi Shire. For instance the bushfire seasons from 2000-2009 were increased in length due to the wide-spread impact of severe drought. In more recent years, the summers have been milder and have had more rainfall, a condition which is predicted to change in the foreseeable future. Typically the municipality experiences spring rains and mild conditions that promote growth followed by hot summers which lead to high fuel loads.

Rainfall patterns largely dictate corresponding fuel growth, particularly in grasslands, and directly influence fire prevention programs across Murrindindi Shire. Grass fuel cures on a gradient across the Shire and seasonal differences can mean that any given grassland does not cure at the same time every year. Generally in the north and eastern sections of the Shire, where it is warmer and drier, grasslands cure much earlier than those areas to the south and west. Fire prevention programs for all agencies are influenced by these variations. For example Murrindindi Shire Council's fire prevention works normally start around the township of Eildon in the east of the Shire in September or October and progress towards Kinglake in the southwest. Council's fire prevention works mirror the grass curing rates as the curing process spreads westwards and southwards as the warmer months progress. Bureau of Meteorology data and CFA's curing data are also discussed in depth by the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC before every fire season. These seasonal discussions directly influence the on-ground fire prevention works of all member agencies.

The usual pattern during summer months is north westerly winds accompanied by high day time temperatures and low relative humidity. These climatic conditions can build up over several days to a storm event with a sudden south westerly wind change, creating a situation whereby fire ignition from lightning becomes a more likely occurrence. The propensity of a southerly wind change, often results in the fire changing direction quickly, thus transforming the fire's extensive flank into the new fire front.

3.2.2.3. THE EFFECT OF BUSHFIRES ON PEOPLE

Murrindindi has experienced a number of fires in recent years. The combination of varied topography, climate and vegetation coupled with the increasing number of people living in and visiting high fire risk localities during the fire danger period poses a significant issue for the municipality. Murrindindi Shire's population of approximately 14,000 people expands substantially during the summer months with holiday makers drawn to the area by the combination of recreational and camping areas, centred on Lake Eildon and the various National and State Parks. A large number of non-resident rate payers have holiday properties spread throughout the shire that are highly utilised over the summer period. A significant number of visitors also arrive at, or pass through the region in winter on their way to the Alpine Resorts at Mt Buller, Mt Stirling and Lake Mountain.

Murrindindi Shire has people with different perspectives and different needs in regard to fire and fire safety. Understanding these needs is central to delivering effective community safety initiatives. This is particularly important for people new to the area and also in capturing the knowledge and expertise of those that have had many years of experience living with fire risk.

The impact of a bushfire increases if the fire occurs in areas where people live, work and visit, so consequently, settlement patterns are important when evaluating bushfire risk. There is sufficient land availability for population expansion around the urban areas of Alexandra, Kinglake Ranges, Eildon and Yea, both at the town's edges and less intensively throughout the rural areas. Community Information Guides (CIGs), formerly Township Protection Plans (TPPs) are identified as the planned response document for both emergency services and the community to a bushfire within close proximity to a town, with the potential to impact on the local community.

Tourism, planned events and festivals have the potential to impact on human movement during the fire danger period, interacting with fire management at several points, particularly on the

foreshore of Lake Eildon and in the National and State Parks and Forests in the shire. In 2014 798,000 people visited the Goulburn Broken region which is approximately a 25% increase over 2013[12]. Many of these visitors come to the municipality for its landscape and natural values and spend a large percentage of their time outdoors. The same landscape features that may lead to increased fire danger can also be underpinning elements of what makes the site attractive for tourism. Furthermore visitor numbers tend to increase as the fire season advances, escalating the potential impact as the fire risk rises.

3.3. STRUCTURAL FIRE AND HAZARDOUS MATERIAL INCIDENT RISK

Structural fire is a fire that may impact the structural components of various types of residential, commercial or industrial buildings. It is a separate category of fire to bushfire although structures may be lost during bushfires and it may require the use of entirely different techniques to extinguish when compared to bushfire. Structural fire in Murrindindi Shire is generally confined to one or a few buildings and as a result, generally has lower personal and property impacts than a large bushfire event.

Hazardous materials are defined as:

> "anything that when produced, stored moved, used or otherwise dealt with without adequate safeguards to prevent it from escaping, may cause serious injury or death or damage to life, property or the environment"[13].

Hazardous Material Incidents occur when a hazardous material is exposed to people or the environment through an accident, production, storage and removal and a lack of adequate safeguards.

3.3.1. HISTORY OF STRUCTURAL FIRE AND HAZARDOUS MATERIAL INCIDENTS

Murrindindi Shire has a long history of structural fire[14]. This was especially true in early settlement where there was a reliance on wood fires for cooking and heating and candles for illumination, combined with predominantly wooden buildings with little or no planning control. The first major structural fire in Murrindindi Shire was the Grant Street Fire of the 4th of November 1872[15]. This fire resulted in most of the eastern side of Grant Street (Alexandra main street) being destroyed. The fire began in Hamea's Corner Hotel (now the Commercial Hotel) on the corner of Grant and Downey Streets at three am and quickly spread to other buildings. By sunrise the next day a large part of the shopping district including two hotels, the Public Library, Union Bank, saddlers shop and a butchers shop had been burned to the ground. The fire was stopped by the destruction and removal of a dilapidated cottage between two businesses and a large brick wall.

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[12] Goulburn Valley River Tourism 2012, *Travel to Goulburn River Valley, year ended March 2012*, www.goulburnrivervalley.com.au/visitationstatistics

[13] NSW Fire and Rescue, 2013, *Hazardous Material (Hazmat) definition*, http://www.fire.nsw.gov.au/page.php?id=19

[14] Rice, P. 2005, *Alexandra District Fire Brigades Group history* page, http://www.virtual.net.au/~alexgroup/History.htm

[15] Sydney Morning Herald *Destructive Fire at Alexandra, Victoria*, 14th November 1872

Other notable historic structural fires include a number of fires at the former timber mills around Alexandra and Rubicon and in 1946, a major structural fire at a furniture store on Grant St Alexandra. In 1957 a similarly large structural fire nearly destroyed the Alexandra Hospital. Marysville has also experienced a number of structural fires historically, many involving guesthouses.

More recently there have been a number of small localised structural fire events including two small house fires in Taylor Bay in April 2015 and a fire in Maintongoon in March 2014 where an elderly man was killed.

Structural fires in Murrindindi Shire also may include watercraft fires as there are a large number of house boats moored on the Murrindindi Shire side of Lake Eildon (the western side of Lake Eildon lies in Mansfield Shire). A recent fire on a houseboat moored at Eildon Boat Club in March 2015 resulted in the loss of the houseboat and four children requiring hospitalisation. There have been 12 boat fires recorded in the first four months of 2015 on Lake Eildon[16].

Lake Mountain Alpine Resort was impacted by a serious fire in the Visitor Centre in June 2009. Whilst not destroying the building itself, the fire caused approximately $2,000,000 in damages.

Murrindindi Shire has had a small number of hazardous material incidents such as fuel spillage and similar incidents. No major hazardous material incidents have been recorded in the Shire.

3.3.2. STRATEGIC IMPLICATIONS OF STRUCTURAL FIRE AND HAZARDOUS MATERIAL INCIDENTS

Structural fire is confined predominantly to the more settled, urban and industrial areas of Murrindindi Shire although agricultural fires, such as haystack fires and machinery fires, may also have an impact on structures in the farming areas. Generally structural fires are not deliberately lit but cases of arson have been recorded.

Hazardous material incidents in Murrindindi Shire are generally confined to industrial areas, farms and roads (transport of goods). CFA are the control agency for both structural fire and hazardous material incidents.

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[16] ABC website, April 1 2015, , *Children Injured in Houseboat Fire on Lake Eildon in Victoria's North East* www.abc.net.au/news/2015-03-31/children-injured-in-boat-fire-on-lake-eildon-in-victoria27s-no/636170

4. MUNICIPAL FIRE MANAGEMENT OBJECTIVE

The municipal fire management objective provides a framework for considering, selecting and evaluating fire management activities. This objective was developed using the information examined during the environmental scanning process, as well as being informed by the Hume Regional Strategic Fire Management Plan (HRSFMP) and relevant issues and priorities from regional stakeholders and adjoining municipalities.

4.1. MUNICIPAL OBJECTIVE

The fire management objective of Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC is:

The Murrindindi Shire working together to plan for, respond to and recover from fire and hazardous materials – to reduce the risk of fire to the community, environment and economy in the Murrindindi Shire

4.2. STRATEGIC DIRECTION

In developing strategic directions for the MFMP the MFMPC was mindful of the planning context within which they were undertaking this task. As illustrated in figure 2 (above) the MFMP forms a critical third tier in the State of Victoria's Fire Management Planning hierarchy and therefore must not be developed in isolation from State and Regional level fire management plans. The MFMPC are keen to ensure any actions within the MFMP support and complement any relevant State objectives and strategies with regard to fire management. Consequently the MFMPC have adopted the following broad strategic fire management deliverables from the *State Fire Management Strategy 2009*:

- Active participation of the community, the emergency services and local and state government, working together in fire management planning to reduce the destructive impact of fire on communities and the environment.
- Communities that are resilient to fire.
- Greater understanding of fire and its potential impacts within the community.
- Healthy natural, social and built economic environments.

4.3. ALIGNMENT OF REGIONAL AND MUNICIPAL OBJECTIVE

The Murrindindi municipal fire management objective aligns closely with the Hume Region Strategic Fire Management Planning Committee (RSFMPC) objectives and vision for fire management. The development and implementation of this plan will therefore contribute significantly to the realisation of the Hume RSFMPC's vision.

Furthermore the formation of the Murrindindi

Hume Regional Strategic Fire Management Planning Committee Vision

The Hume Region working together to effectively anticipate, respond to and recover from major bushfire – to secure a safer region, more resilient community, healthier environment and a prosperous economy.

Shire and Lake Mountain MFMPC and the development of a MFMP using the designated IFMP Planning Guide have strongly supported several of the Regional Strategic Fire Management Plan (RSFMP) key objectives. Evidence of this is described in the following Table 4 below.

Table 4: Alignment of MFMP & RSFMP objectives

RSFMP element	RSFMP objective	MFMP contribution
Planning together	Develop state, regional, municipal and local fire management plans and planning with a clear purpose and a consistent assessment of risk.	The MFMP provides the third tier in the IFMP process and utilises the same risk base approach as used with State and Regional plans
Collaborative implementation	Develop and implement fire management programs and activities in a collaborative manner.	The MFMPC consists of multiagency representation and has incorporated community engagement strongly into the development of the MFMP.
Building knowledge & capacity:	Build and share knowledge in the fire management sector and across the community. Improve the capability of communities, the fire management sector and the government to deal with fires.	The aspirations of the MFMPC converge with the regions in seeking to build both its members and the communities' knowledge and understanding of fire management.
Implementation support	Support the implementation of the IFMP framework in the Hume region	The development of this MFMP clearly demonstrates support for IFMP at a municipal level.

5. FIRE MANAGEMENT RISK STRATEGIES

Integrated fire management planning is the risk management process to establish priority setting for fire management activities and is consistent with the international standard for risk management ISO 31000. Risk is described within the standard as:

Risk Analysis = Consequence x Likelihood

The standard emphasises the need to establish and manage the risk to the objectives set during the plan development process.

5.1. RISK IDENTIFICATION PROCESS

The objectives and risks contained in this MFMP were identified through the environmental scanning process. The objectives and risks were examined utilising Chrighton's Risk Pyramid which provides a framework for sorting, analysing and assessing information with respect to fire risk. It helps identify the amount of risk generated by the hazard x exposure x vulnerability relationship within the context (people, property, infrastructure, social and economic, biodiversity, the economy and heritage values) of a location or situation. Where:

- **Hazard** - is a specific event characterised by a certain magnitude and likelihood of occurrence
- **Exposure** - refers to the factors, such as people, buildings, networks the environment and economy that are subject to the impact of a specific hazard
- **Vulnerability** - refers to the characteristics of an element exposed to a hazard - road, building, person, and economy – that contributes to the capacity of that element to resist, cope with and recover from the impact of a natural hazard.

Figure 10: Chrighton's Risk Pyramid
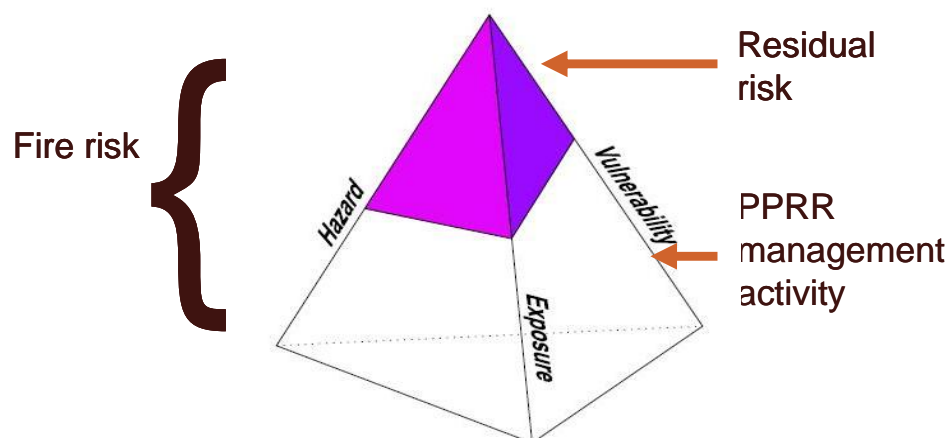
By this means the MFMPC was able to generate a list of bushfire, structural fire and hazardous material risks for the municipality and to examine the residual or remaining risk level. Ascertaining residual risk is a key element of the Chrighton's Risk Pyramid process; it allows the MFMP to recognize the level of risk remaining after all treatments are applied.

IFMP encompasses planning across all fire hazard environments. As a result hazards need to be considered within a range of categories so as to better understand the likely consequences and recovery risks involved. A copy of these risk categories can be found in Appendix 1

5.2. RISK ASSESSMENT PROCESS

Risk is assessed by determining consequences and the likelihood of the consequence occurring to the elements at risk. An event or set of circumstances may have multiple consequences and may affect multiple objectives. Existing risk treatments and their effectiveness should be taken into account when rating the level of risk.

As a first step in the assessment process each of the identified risks were refined into succinct 'risk statements' and entered into the risk register. Risk statements are a description of the risk and simply describe the risk in terms of the source through to the impact. Each risk statement outlines:

- the hazard (source of risk)
- the element at risk
- the consequence of the interaction as a result of an event.

Each of these statements was then qualitatively assessed for their impact using the State Fire Management Planning Committee's State Bushfire Consequence Table (Appendix 1a) for bushfire risk and the Community Emergency Risk Assessment (CERA) risk consequence table for Structural Fire and Hazardous Material Risks (Appendix 1b).

Each consequence was considered in terms of both damage and disruption (loss of service or function) and in some cases, the consequence of an event was not realised at the local level but was of a significant impact at regional and/or state level. In addition the committee took into account existing treatments and their impact on the risk level. Consequence ratings were then entered into the risk register.

It is understood that a single fire incident that impacts an individual or group can be seen as a catastrophic event locally. In the preparation of the MFMP however, the MFMPC utilised State derived consequence tables to inform planning. The State bushfire consequence tables were utilised by all MFMPCs throughout Victoria so that individual risks and their consequences can be compared between municipalities, regions and the State. For example, if a risk on the Risk Assessment (Figure 16) has a low risk rating, this relates directly to the State derived consequences and has no bearing on how consequences should be viewed by a local community, group or individual.

Similarly, structural fire risks and hazardous material risks utilized the CERA consequence tables (see appendix 1b) as used by the MEMPC in the risk assessment process completed in the production of the 2015 MEMP. This also allows like risks to be compared between municipalities and between risks identified in the MFMP and the MEMP. The CERA process is similarly ISO:31000 approved.

The likelihood of each event being realised was assessed using the data derived from the environmental scan and the 'likelihood table' (Appendix 1c). Where the committee did not believe it held the necessary technical expertise to make an assessment, advice was sought from relevant authorities outside the committee. Once agreement as to consequence and likelihood was reached the 'likelihood and consequence matrix' (Appendix 1c) was used to assign a risk level to each risk statement.

Table 5: Risk Categories Table

Risk Group	Risk Category	Risk Element	
SOCIAL	People & Social Setting	*Life & injury:*	Public Safety
		Social services:	Functional continuity
		Health & wellbeing:	Social networks
		Displacement of people:	Employment/income
	Infrastructure	*Residential:*	House, flat, caravan, apartments
		Public accommodation	Boarding house, hotel, hostel, correctional facilities
		Public assembly:	Education, hall, theatre, stadium, cafe, restaurant
		Health care:	Special accommodation homes, nursing homes and hospitals
	Cultural, Heritage	*Heritage sites and buildings*	
		Indigenous sites	
		Iconic sites and features: e.g. Puffing Billy	
ECONOMIC	Infrastructure	*Commercial:*	Shopping complex, office
		Industrial:	Factory (heavy, light, special), warehouse, silo, chemical, petrol
		Essential Infrastructure:	Pipelines, Power, public transport systems, Water Catchments, Power Water & Sewerage, Gas, Communications
		Transport:	Road, rail, bridge, tunnel, port, marine, airport
	Production	*Agriculture and Farming:*	Plantation, crop, pasture, poultry, feedlot, sawmill
		Business/Industrial Capacity	
		Tourism	
ENVIRONMENT	Biodiversity	*Assets that provide biological based ecosystem functions and/or services considered of value.*	
	Water	*Assets that provide of atmospheric/climatic ecosystem functions and/or services considered of value*	
	Air	*Assets that provide water-based ecosystems functions and/or services considered of value.*	
PLANNING	Governance & Regulation	*Corporate Governance Issues, including organisation structures; Boundary issues, Inter-Agency Agreements; Environmental scans; Population projections; urban development projections/planning; Volume projections; Long term/short term solutions; Infrastructure requirements to meet projected community needs*	
	Planning & Communication	*Internal, external, multi-municipal, communications strategies*	
	Stakeholder Management	*Community Expectations; Government expectations;* *Business and Industry Issues, including risks associated with developing and implementing programs to minimise the impact of fire on business and industry;*	
	Operational	*Encompasses the planning, daily operational activities, resources (including people) and support required within the 'area of interest', that results in the successful development and delivery of products/ services.*	
	Financial	*Ability to allocate limited financial resources to maximum effect; Ability to fund adequate resources to meet community needs; Skills & technical expertise; Management skills; Equipment maintenance, upgrades, and replacement funding; Geographical remoteness location needs; Government's ability to fund requirements to meet population growth needs*	

5.2.1. BUSHFIRE RISK ASSESSMENT

Table 6 is a summary of the bushfire risk assessment process, detailing the highest priority bushfire risks in the Murrindindi Shire. The priority risks were determined by the MFMPC which utilised the fire experience of committee members, the VFRR risk register and the former Murrindindi Shire Fire Prevention Plan.

Once assessed, risks were also given categories using Table 5 above. This was done to group 'like' risks together. Primacy of life is the most essential element of the MFMP and is represented by the Risk Group – Social, and by the Risk Category- People and Social Setting. Other risk groups include economic risks, environmental risks and planning risks. The use of these categories and groups is utilised in both the risk assessments (Table 6 and Table 7) and the Risk Management Strategies (Table 8 and Table 9).

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
1	Risk to communities and residences with limited access and egress, living on fire prone ridges, in the Kinglake Ranges (including Kinglake, Castella, etc) area from fire on severe and above Forest FDR days	Social	People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Emergency communications and other communications on ridgeline. Access/egress limited	Unlikely	Moderate

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[17] Risk ratings determined using a combination of State Bushfire Consequence Table, Likelihood Table and Risk Assessment Matrix (in Appendix 1a-c). Consequences from the State Bushfire Consequence Table only consider the effects of a scenario at a State-planning level and do not necessarily represent the views of any local groups or individuals.

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
2	Risk to vulnerable communities, residences and industry with limited access and egress in the Flowerdale/King Parrot Creek Valley from fire on severe and above FDR days	Social	People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Access/egress limited	Unlikely	Moderate
3	Risk of fire impacting upon seasonal (summer influx) community in heavy fuel load areas around Eildon and Taylor Bay on very high and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Limited access/egress , lack of understanding regarding bushfire	Unlikely	Moderate
4	Risk to influx of people over summer at camping grounds/camps across the Murrindindi Shire during holiday periods from fire on very high and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	More at risk from fires burning into campgrounds that fires starting at campground, lack of communication (Eg of FDR), lack of public awareness	Unlikely	Moderate
5	Risk to influx of people over summer at caravan parks across the Murrindindi Shire during holiday periods from fire on severe and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Caravan parks have Emergency Management Plans	Unlikely	Low

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
6	Risk to influx of visitors, infrastructure and employment at Lake Mountain Alpine Resort from fire on very high and above FDR days.	Social	People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Impacts can continue over winter or for a number of seasons, Limited access/egress (single road in and out), remote - access by emergency services can take a significant amount of time	Unlikely	Moderate
7	Risk to community with poor access and egress in heavily vegetated areas around 'Highlands' from fire on very high and above days		People & Social Setting	lightning	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Difficult access due to terrain and small number of roads. More grassland areas than forested areas, elevated area, high winds, high incidence of lightning, scout camp in area	Possible	Low
8	Risk to communities in the Marysville Triangle from fire on severe and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on tourism	Will impact tourist numbers on Lake Mountain, and service provision from adjoining towns	Unlikely	Moderate
9	Risk of fire Ignition from people travelling along highways and major roads on very high and above FDR days		People & Social Setting	Mechanical failure, human factors	Loss of life, assets and infrastructure, time and cost of recovery, loss of biodiversity	A large percentage of fire ignitions occur on roadsides	Possible	Moderate
10	Risk to people travelling along highways and major roads before, during and after a fire event		People & Social Setting	lightning, human factors	Loss of life	Includes smoke, falling trees and ember attack	Possible	High

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
11	Risk to Snobs Creek Hatchery and its water catchment from fire	Social	People & Social Setting	lightning, human factors	Loss of life, loss of stock, loss of production, increased treatment costs	State significance due to sole site for Chinook Salmon, closed on code red days, 3 residences on site, clean catchment water a priority (ash/phoscheck impacts), consultation needed on water extraction, nationally threatened fish present on site, generators on site for business critical processes	Unlikely	Moderate
12	The risk of fire impacting people, residences and infrastructure in large towns the Murrindindi Shire on severe and above FDR days.		People & Social Setting	lightning, human factors	Loss of assets and infrastructure, time and cost of recovery	This risk also has the potential to directly affect the response/recovery efforts in the region.	Unlikely	Low
13	The risk of fire impacting people, residences and infrastructure in small towns in Murrindindi Shire with a predominant grass fire threat on very high and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery	Small town examples include: Buxton, Yarck, Molesworth, Strath Creek, Taggerty, and Thornton.	Unlikely	Low

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
14	The risk that people have a lack of relevant targeted information in regards to fire and preparation for fire	Social	People & Social Setting	Lack of targeted information, people unable to access current information, comprehension problems	Loss of life, assets and infrastructure	A large number of tourists, non-resident owners and people new to the area have a lack of understanding of fire	Possible	Low
15	Risk to school camps, outdoor education facilities and other camps of fire on very high and above FDR days		People & Social Setting	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, negative public perception	Loss of infrastructure, danger to people, employment	Unlikely	Moderate
16	Risk of mobile service being interrupted due to towers being impacted by bushfire on very high and above FDR days		People & Social Setting	Indirect impacts eg Loss of power to tower (most likely cause), direct impact to structure (unlikely). Loss of optic fibre and/or radio links feeding sites.	Temporary loss of mobile telephone service for a small area. Wide area failure of mobile phone and wireless data (internet) services to various carriers.	Towers themselves fairly fire resistance, other communications devices still operating	Possible	Moderate

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
17	Risk of telephone communications being interrupted due to damage to cables during a bushfire on very high and above FDR days	Social	People & Social Setting	Dozer cutting lines during fire response or burning tree route near cable (rare), plastic risers. Loss of optic fibre	Loss of all public communications services for a small area. Failure of telephone and data (internet) services to general public and Government	Unusual but has been known to happen	Possible	Moderate
18	Risk of Statenet Mobile Radio (SMR) service being interrupted due to towers being impacted by bushfire on very high and above FDR days		People & Social Setting	Indirect impacts eg Loss of power to tower (most likely cause), direct impact to structure (unlikely). Heat from fire passage melting antenna feeder cables causing loss of communication system	Emergency Services communications systems impaired for a small area - may lead to loss of fire line communications in some remote areas. Radio links used at these transmission sites will also be affected	Reduced quality but not total service, other communications still available (eg mobile telephone) - location dependent	Possible	Moderate
19	Risk to Kinross Farm from fire on severe and above FDR days		Infrastructure	lightning, human factors	Loss of life, assets and infrastructure, time and cost of recovery, impact on provision of eggs for vaccine production	Limited access/egress, loss of power can affect animal health, back-up generators for some power, including Bio-security (eggs used to produce flu vaccinations etc), economic and employment loss	Unlikely	Moderate

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
20	The risk of fire impacting upon Indigenous and non -Indigenous Heritage sites on severe and above FDR days and through secondary fire control (e.g.: back burning etc)	Social	Cultural, Heritage	No knowledge of site locations and secondary fire controls (eg dozer) may impact Indigenous sites, Lack of recording of Indigenous sites, Lack of protection of (some) non-Indigenous sites	Loss of cultural heritage	Scar trees particularly susceptible to fire, non-Indigenous heritage buildings may be isolated and in a state of disrepair and susceptible to fire, including Cattleman's huts, Rubicon trestle bridge and hydroelectric power scheme	Possible	Moderate
21	Risk of fire influenced vegetation being impacted or changed by fire on an extreme or code red days	Environment	Biodiversity	lightning, bushfire	the loss of vegetation species diversity and structure leading to a long term change in the vegetation class/structure	EVC include Damp Forest, Montane Dry Woodland and Montane Herb-rich Woodland the majority would be found on public land.	Serious	Low
22	Risk of fire sensitive vegetation being impacted or changed by fire on an extreme or code red days		Biodiversity	lightning, bushfire	the loss of vegetation species diversity and structure leading to a long term change in the vegetation class/structure	EVC include Montane Riparian Thicket, Montane Riparian Woodland, Montane Wet Forest, Sub-alpine Shrubland, Sub-alpine Woodland and Wet Forest, the majority would be found on public land	Major	Moderate

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
23	Risk of fire impacting State and Federally listed flora and fauna sites/habitat on extreme or above FDR days	Environment	Biodiversity	lightning, bushfire	Loss of threatened species	Regional generic risk provided by DELWP	Likely	High
24	Risk of major transmission lines & switch stations being impacted/damaged by bushfire on an extreme and above FDR day leading to a loss of service	Economic	Infrastructure	Direct fire impact on poles/wires/structures, or thick smoke under lines.	Interruption to supply - impact degree & location depends on demand/availability situation at time of failure.	Veg clearance around lines & structures, structures relatively impervious to fire. Power will be restored in under 24hours	Unlikely	Moderate
25	Risk of distribution lines & sub stations being impacted/damaged by bushfire on an extreme and above FDR day leading to a loss of service affecting large portions of the local community		Infrastructure	Direct fire impact on poles/wires/structures, falling debris or vehicles accidents.	Loss of power to local community (location of effect dependent on location of impact)	May take up to a week to restore power to towns	Unlikely	Low
26	Risk of fire impacting commercial forests and plantations on very high and above FDR days		Production	lightning, human factors, forestry activities	Loss of assets and infrastructure, time and cost of recovery	Impacts on regional industry	Unlikely	Moderate
27	Risk of reduced water quality from fire on severe and above FDR days.		Production	lightning, human factors	Loss of assets and infrastructure, time and cost of recovery, impact on tourism	Not necessarily fire impacts but impacts on catchments, possible economic impacts, loss or damage to trout hatcheries and fish farms, the fishing industry, water quality/temperature	Unlikely	Low

Table 6: Risk Assessment - Bushfire

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[17]
28	The risk of bushfire negatively impacting natural assets and environmental values in the Murrindindi shire on very high and above FDR days	Economic	Production	lightning, bushfire	Loss of biodiversity values, reduction in tourism, economic impacts	Tourists numbers may drop due to a perceived or real impact to environmental values	Possible	Low

5.2.2. STRUCTURAL FIRE RISK ASSESSMENT

Table 7 below is the risk assessment of the main structural fire and hazardous material risks in Murrindindi Shire. The priority risks were determined by the MFMPC, which utilised the response experience of committee members and risks identified in the former Murrindindi Shire Fire Prevention Plan.

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
1.	Risk to residential properties across Murrindindi Shire from structural fire	Social	People & Social Setting	Multiple Causes (wood fires, smoking in bed, etc)	Loss of property, House potentially inhabitable, potential loss of life	The residential population of the Municipality is spread with widely varying density throughout its length and breadth. The majority of the population of the Municipality resides within the towns of Alexandra, Buxton, Eildon, Flowerdale, Kinglake, Kinglake West, Marysville, Thornton, Taggerty, Toolangi, and Yea and the rural districts of Acheron, Castella, Cathkin, Glenburn, Highlands, Homewood, Kerrisdale, Koriella, Pheasant Creek, Molesworth, Narbethong, Strath Creek, Terip Terip, and Yarck	Possible	Moderate

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[18] Risk ratings determined using a combination of the CERA Consequence Table, Likelihood Table and Risk Assessment Matrix (in Attachment 1b). Consequences from the CERA Consequence Table only consider the effects of a scenario at a State-planning level and do not necessarily represent the views of any local groups or individuals.

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
2.	Risk to residential properties in Eildon from structural fire	Social	People & Social Setting	As Above - Houses more closely situated in Eildon, potential for spread from house to house	Loss of property widespread in Eldon	House loss is potentially high as distance between houses is small. Building standards of older housing stock is also poor and many are made from fire prone materials.	Possible	Moderate
3	Risk to land and outbuildings and non-residential buildings from structural fire		People & Social Setting	Multiple Causes, wiring shorts, haystacks, open fires, incinerators, escaped backyard fire etc	Loss of outbuildings and other property	Structural fires as a potential wildfire source, unauthorized occupation of outbuildings	Almost Certain	Moderate

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
4	Risk to public event from structural fire	Social	People & Social Setting	Multiple causes, site dependent	Loss of income, loss of tourists to events	The following specific sites/events have been identified: Special Public Events and Festivals, Occasional/annual public entertainment, Agricultural Shows, music festivals, markets, football/netball games	Unlikely	Moderate
5	Risk to areas of public assembly from structural fire		Infrastructure	Multiple causes, site dependent	Loss of social space, potential impact on persons if space is occupied	There are a number of these premises within the Municipality including public halls, sporting complexes, churches, schools, preschools and childcare centres. Each facility or premises has its own particular risk that will require individual evaluation	Unlikely	Moderate
6	Risk to industrial and commercial properties from structural fire	Economic	Production	Multiple causes, site dependent	Loss of business and local employment	There are a number of industries within the Municipality that are generally located close to their supply of raw materials. The major industries at risk are the timber processing plants, timber preservation plants, light engineering/fabrication, egg production, fruit packing and processing and bulk fuel depots. There are a number of risks associated with these industries that include fire, hazardous materials spills (both storage and transport), and environmental damage from pollution and/or spillage	Unlikely	Moderate

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
7	Risk to commercial centres of towns from structural fire	Economic	Production	Multiple causes, site dependent	Loss of business and local employment	The major Commercial Centres within the Municipality are located within the towns of Alexandra, Eildon, Kinglake, Marysville, and Yea; with isolated establishments located within the other villages and hamlets. There are a number of risks associated with the occurrence of fire related to these commercial centres that include; a higher concentration of flammable materials and the proximity to other similar premises. The loss of these premises as a result of fire, may result in major economic loss and the loss of employment	Unlikely	Moderate
8	Risk to public accommodation and tourist facilities from structural fire		Production	Multiple causes, site dependent	Loss of business and local employment	The type, size and age of the premises have a very significant impact on the potential for the loss of both life and/or property. As a general rule these types of premises can contain a high number of people who will be sleeping on the premises and are unfamiliar with their surroundings, are exposed to varying standards of serviceability and different or a lack of safety procedures. In some cases the occupants have very little control over their surroundings and invariably have little interest in the risks associated with the accommodation, Outdoor centre accommodation (students etc), school camps	Possible	Moderate

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
9	Risk that people may not be able to travel due to road closure for a hazardous material incident or accident	Economic	Infrastructure	Crash, fatality, truck rollover, hazardous material spill, discarded cigarette causing fire etc	Loss of income, localised environmental impact	The Goulburn Valley Highway, Maroondah Highway, and Melba Highway traverse the Municipality. These roads are critical to the economy of the region and provides significant opportunity for future economic development. These transport links however provide a potential fire ignition source due to vehicle malfunction, accident or inappropriate disposal of burning material by the users, such as cigarettes, pushes people onto minor roads and prevents travel to some areas for up to half a day. Hazardous material incidents may also cause similar access/egress issues.	Almost Certain	Moderate
10	Risk to Lake Mountain of Structural Fire		Production	Multiple causes (bushfire in summer and other in winter	Loss of income, employment and business	More people on site in winter. Long time to repair damage if it occurs. If structural fire occurs whilst site is being utilised during winter you then have to manage the people leaving/exiting resort, remoteness of fire brigade response, snowmaking water can be utilised but capacity may be reduced if snowmaking has occurred, limited number of staff accommodation on site.	Unlikely	High

Table 7: Risk Assessment – Structural Fire and Hazardous Material Incidents

ID #	RISK DESCRIPTION	RISK GROUP	RISK CATEGORY	CAUSE	IMPACT	COMMENT	LIKELIHOOD	RISK RATING[18]
11	Risk to houseboats on Lake Eildon from fire		Infrastructure	Gas appliances, petrol motors and other sources	Loss of income, employment and business	Affects tourism and broader community, 12 houseboat fires have occurred in the first four months of 2015[19].	Almost Certain	High
12	Risk to houseboats and other boats moored at Lake Eildon harbours from fire	Economic	Infrastructure	Gas appliances, petrol motor and other sources	Loss of income, employment and business	Affects tourism and broader community and may have large localised impact.	Unlikely	Moderate

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[19] Transport Safety Victoria website, 2015, *Incident sparks boat fire message from safety regulator,* http://www.transportsafety.vic.gov.au/maritime-safety/newsroom/news/news-articles/incident-sparks-boat-fire-message-from-safety-regulator

5.3. RISK MANAGEMENT STRATEGY

Having developed a register of risks for Murrindindi Shire, the committee was able to allocate the current treatments of responsible agencies against relevant risk areas and thus develop a Risk Management Strategy. This strategy is a matrix of:

Priority risks x treatment x agency x time frames

This creates a snapshot of who is doing 'what', 'where' and 'why' within the municipality in regards to the mitigation of fire risk.

The following tables (Table 8 and 9) details all of the treatments or procedures being undertaken by all of the major infrastructure providers, regulatory and community based agencies throughout Murrindindi Shire to mitigate risk. Each of the statements was given by the Responsible Agency as something that they see as treatment essential to fire prevention, preparedness, response recovery and the use of fire.

Treatments have been ordered using the risk categories in Table 5, as have the risk assessments in Table 6 and 7. This is so that some consistency of method can be utilised to group 'like' risks or treatments together. In Table 8, some of the treatments may have additional risk groups. For example, a treatment that impacts people may also have a potential economic impact. They have however been ordered to reflect their priority risk group. The highest priority in categorising the treatments is the 'primacy of life'. It should be noted that these are proposed treatments only for the next 3 years, and that actual implementation in any given year may be influenced by a variety of factors such as availability of resources and seasonal conditions

5.3.1. RISK MANAGEMENT STRATEGY – BUSHFIRE

There are a number of state-wide and municipal treatments that have been identified for each fire risk management strategy which can be used by agencies to reduce the risk and affect of fire on the community. The generic state wide and municipal wide treatments include:

- Community education programs
- Community education and engagement activities
- Public awareness – multimedia communications
- Powerline hazard tree identification, management and reporting
- Fire hazard inspection program and issue of notice
- Compliance and enforcement of legislation
- Wildfire management overlays
- Building code of Australia
- Permits to Burn
- Local laws.

To effectively reduce community vulnerability to fire requires more than inter-agency effort alone. It requires the facilitation of a more self-reliant and self-aware community who have the knowledge, motivation and capacity to manage the risks to reduce the threat of fire in their own communities as an active partner with fire management agencies.

The key objectives and outcomes sought through the implementation of the primary fire risk management strategies for bushfire are outlined in Table 8 below.0

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
			Treatment			**Spectrum**				**Application**
Social	People and Social Setting	1	Schools Program	Fire Safe Kids, Mobile Education Bushfire Unit.	·	✓	·	·	CFA	Y
		2	Brigade Burn Program	Removal of vegetation through burning to protect life & property, includes Township Protection Burning, Planned Burn Program & Fuel Reduction Burns by CFA Brigades.	✓	✓	·	·	CFA	Y
		3	Vulnerable Communities Fire Awareness	Community education & information for vulnerable groups about fire.	✓	✓	·	·	CFA	N
		4	Awareness	Fire awareness programs targeted at communities via shows/events/displays	·	✓	·	·	CFA	Y

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[20] *Only Murrindindi Shire Council and Victoria Police treatments in this table have been updated since 2012. All other treatments are being updated by the Hume Region Strategic Fire Management Planning Committee. This process was underway but not completed when this plan was printed. Table 8 will be updated when the new version becomes available.*

[21] *The treatments itemised in Table 8 are primarily at program level and in many cases apply equally across the municipality, however some have the ability to have resources and effort targeted at specific locations or points of interest to the MFMPC.*

| Risk Group | Risk Category | ID # | Treatment | | Spectrum | | | | Responsible agency | Application |
			Name	Treatment description	Prevention	Preparedness	Response	Recovery		Targeted?[21]
Social	People and Social Setting	5	Fire Ready Victoria	Assists in perception & understanding of bushfire risk so as to modify behaviours and make individuals act more safely. Includes bushfire awareness sessions for communities, community groups, businesses & service providers.	·	✓	·	·	CFA	Y
		6	Public Information	Fire information through Fire Danger Rating signs, media etc to raise awareness of fire risk. Includes Fire Action Week.	✓	✓	·	·	CFA	N
		7	Community Information Guides	Planned response (for both emergency services & the community) to a bushfire within a close proximity to a township, which has the potential to impact on the local community.	·	✓	·	·	CFA	Y
		8	Community Fire Guard	A community development program designed to help reduce the loss of lives & homes in bushfires. It assists neighbouring residents to develop bushfire survival strategies that suit their level of risk, lifestyle, environment & values.	·	✓	·	·	CFA	Y
		9	Home Bushfire Advice Service	Specifically targeted individual 1:1 fire awareness & education for residents with the highest level of bushfire risk. Advice on property management, planning, personal capacity & potential fire hazards.	·	✓	✓	·	CFA	Y
		10	Bushfire Planning Workshops	Interactive workshop for residents living in high bushfire risk areas. Participants are guided through the Fire Ready Kit by a trained facilitator to identify their own bushfire risks and the considerations they'll need to make when putting together their bushfire survival plan.	·	✓	✓	·	CFA	Y

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Social	People and Social Setting	11	Community Debriefs	Post fire debriefings for CFA members, community & stakeholders	·	·	·	✓	CFA	N
		12	Communications	Maintenance of a communications network	·	✓	·	·	DELWP	N
		13	Information kits	"After the fires: Practical Advice" & "Recovery from emergencies"; information kits containing brochures & fact sheets for people affected by fire/emergency	·	·	·	✓	DHHS	N
		14	Vulnerable persons toolkit	Identifies location, contact details & describes needs of vulnerable persons within a municipality	·	✓	·	·	DHHS	N
		15	Alternative drinking water supply plan	Provision of alternative drinking water supplies to specific towns in the event of loss of normal supply. Also see #29 below.	·	✓	✓	·	GVW	N
		16	Recovery	Assisting in the return to normal, including the provision of relief services, material aid, information and advice to individuals, families or discrete groups etc	·	·	·	✓	LGA	Y

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Spectrum Prevention	Spectrum Preparedness	Spectrum Response	Spectrum Recovery	Responsible agency	Application Targeted?[21]
Social	People and Social Setting	17	Community recovery	Long term post fire support to affected communities/groups, including advocacy, facilitating reconstruction, debriefing	.	.	.	✓	LGA	Y
		18	Vulnerable Communities, VPE Policy, Fire Awareness & Response	Identify vulnerable communities and individuals within the Municipality in accordance with the VPE Policy 2012. Targeted community education and information for vulnerable groups about fire (and other emergencies). Capacity to inform emergency response agencies of the existence of vulnerable members within the community when required	✓	✓	✓	✓	LGA	Y
		19	Awareness	Liaise and support CFA and DELWP in promoting fire awareness programs targeted at communities via shows/events/displays. Input and assistance with the development and distribution of Community Information Guides etc	.	✓	.	.	LGA	Y
		20	'Plansmart'	'Plansmart' Emergency Ready Business Program pilot being developed which aims to assist tourism and hospitality businesses in Murrindindi Shire to be better prepared for emergencies and extreme weather events. Comprising a web-based planning module that will step business owners through issues to be considered in relations to fire, flood, storm and blue-green algae. Annual accreditation will create a competitive advantage for program members and encourage ongoing involvement and engagement between Council, tourism and hospitality businesses and emergency services.	.	✓	.	.	LGA	Y
		21	VPE Policy 2012	Implementation of VPE policy 2012 during response phase of emergency. Coordination and management of potential evacuation of VPR clients if required.	.	✓	✓	.	Vic Pol	Y

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Social	People and Social Setting	22	Detection	Maintenance of a detection network. Includes fire lookout towers and fire detection flights	·	✓	·	·	DELWP	N
	Infrastructure	23	Incident Control Centres	Maintenance of a strategic network of incident control facilities to support response in emergency management incidents. Includes agreed level 3 ICCs and local command facilities to predetermined standards	·	✓	·	·	CFA/ DELWP	N
		24	Air support facilities	Maintenance of a strategic network of air support facilities. Includes airbases & helipads.	·	✓	·	·	DELWP	Y
		25	Fire risk management system	GIS program identifying location & details of community facilities managed by DHHS and allied agencies.	·	✓	·	·	DHHS	N
		26	Agricultural Management	Fire management & safety issues for land owners/managers to assist in the preparation of property fire management plans. Includes publication "On the land", "Farm Fire Safety" module (delivered via DEDJTR & TAFE Whole Farm Planning courses on request).	·	✓	·	·	CFA	N

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Economic	Production	27	Relief & recovery services to primary producers	Assess damage to and loss of agricultural crops, livestock and infrastructure of commercial primary producers and rural land managers (including aquaculture), identify & refer personal and technical needs to appropriate businesses (within DEDJTR) or agencies	·	·	·	✓	DEDJTR	N
		28	Animal Welfare Needs	Liaise with animal welfare support agencies and organisations to deliver animal welfare services including assessing injured and affected animals (livestock & companion animals) in emergencies with an emphasis on the needs of commercial primary producers and rural land managers	·	·	✓	·	DEDJTR	N
		29	Essential Water Replacement	Coordinate water replacement as per the DELWP "Replacement of Essential Water Used During Bushfire Fighting Policy". Includes replacing wither potable (tank) and non-potable (stock/irrigation) water.	·	·	·	✓	LGA	Y
		30	Access Roads and Tracks in National Parks	Establishment of constructed and maintained roads, bridges and tracks to allow safe passage for fire fighting vehicles. Includes Walking Track Maintenance.	·	✓	·	·	PV	Y
	Infrastructure	31	Routine Site Maintenance	Ongoing mowing/slashing/spraying of sites to reduce fuel loads for protection of assets or adjoining properties. Includes Asset Protection Zone work around high value assets and maintenance of places of last resort within parks	·	✓	·	·	PV	Y

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Economic	Infrastructure	32	Water point maintenance	Maintenance of a strategic network of water points	·	✓	·	·	DELWP	Y
		33	Fire access roads and tracks	Maintenance of roads, bridges and tracks to specified standards.	·	✓	·	·	DELWP	Y
		34	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential, includes routine maintenance of structures (eg gutter cleaning).	✓	✓	·	·	DET	N
		35	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning)..	✓	✓	·	·	AusNet Services	N
		36	Routine maintenance of transmission & powerlines	Vegetation management around powerlines and along easement, regular inspections and maintenance as approved by Energy Safe Victoria.	✓	✓	·	·	AusNet Services	N
		37	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning)..	·	✓	·	·	Telstra	N

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Economic	Infrastructure	38	Bushfire Mitigation	Removal of identified fire risks to lines & facilities, eg tree lopping	·	✓	·	·	Telstra	N
		39	Routine Maintenance of facilities	Ongoing mowing/slashing/spraying of sites to reduce fuel loads to ensure protection of assets, minimise ignition potential and ensure adequate access and egress. Includes routine maintenance of structures (eg gutter cleaning)..	·	✓	·	·	GVW	N
		40	Resourcing	Provision of specialist equipment (graders, water carriers) facilities and information management (including the operation of Municipal Emergency Coordination Centres). When requested coordinate standby of staff and equipment to assist other agencies involved in emergency response	·	·	✓	·	LGA	N
		41	Fire Plug and Hydrant Installation and Maintenance	Monitoring of hydrant locations and implementing works to ensure that individual hydrants can be easily identified and maintained as required.	·	✓	·	·	LGA	Y
		42	Fire access Roads and Tracks	Maintenance of existing roads, bridges (as per displayed load limits) and tracks to allow safe passage for fire fighting vehicles	·	✓	·	·	LGA	Y

Risk Group	Risk Category	ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Economic	Infrastructure	43	Fuel Hazard Management	Reducing fuel loads and or promoting such works to other authorities to protect assets. Fuel hazard mitigation (eg slashing, burning) and routine maintenance in townships, on roadsides and within reserves.	✓	✓	·	·	LGA	N
		44	Remote Water Tanks	Maintenance and annual audit of remote water tanks installed under the FARRS program. Refilling of tanks post structural fire. Coordination of refilling tanks post bushfire as per the Replacement of Essential Water Used in Fire Fighting Policy (also see #29 above).	·	✓	·	·	LGA	Y
		45	Roadside Vegetation Management	Development of roadside vegetation management strategies that consider access and egress requirements for community, service and response agencies and those that support prevention and preparedness activities such as Fuel Reduced Corridors	·	✓	·	·	LGA	Y
		46	Vegetation Management	Advice to landholders & linkages to CFA to manage vegetation & lower bushfire risk. Includes current advice, promotion and notification processes.	✓	✓	·	·	LGA	Y
		47	Roadside Vegetation Management	Removal of fuel and vegetation management along roadsides. Includes Strategic Fire Fuse Breaks and routine Roadside Maintenance.	·	✓	·	·	Vic Roads	N
		48	Vegetation Management	Advice to landholders & linkages to CFA Brigades to manage vegetation & lower bushfire risk	✓	✓	·	·	CFA	Y

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Environment	Biodiversity	49	Native Animal welfare	Management of native animal welfare associated with an emergency incident.	·	·	·	✓	DELWP	N
		50	Rehabilitation plan	Implement a works program to repair or replace fire affected infrastructure and minimise impacts upon natural values.	·	·	·	✓	DELWP/PV	N
		51	Statutory & Legislative activities	Bushfire Prone Areas & Bushfire Management Overlay, declaration of TFBs, declared danger periods, regulation of burning permits.	✓	✓	·	·	CFA	N
Planning	Governance and Regulation	52	Park/Forest closures	Closure of parks, forests and facilities at times of very high fire danger	·	✓	·	·	DELWP/PV	N
		53	Patrol/Inspection	Inspections of assets to ensure compliance with regulations and safety requirements and to assess for fire hazards. Includes Campfire Patrols and Parks Victoria Ranger Patrol Program.	✓	✓	·	·	PV	Y
		54	Enforcement	Programs which support legislative compliance. Includes patrols to enforce campfire regulations, forest closures, fire cause investigations and prosecutions.	✓	·	·	·	DELWP/PV	N

Note: The "Treatment" header spans ID # and Name columns. The "Spectrum" header spans Prevention, Preparedness, Response, Recovery columns. The "Application" header spans Targeted? column.

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Planning	Governance and Regulation	55	Bushfire Management Overlay	Development of a new overlay, includes opportunity to modify to local conditions through schedules.	✓	.	.	.	DPCD	N
		56	Bushfire Prone Areas	Interactive online map service that identifies areas likely to be subject to fires and consequent construction standards requirements	✓	.	.	.	DPCD	N
		57	Statutory & Legislative activities	Input to identifying Bushfire Prone Areas & Bushfire Management Overlay, declared danger periods and regulation of permits to burn. Municipal Emergency Management and Municipal Fire Management Planning. Engagement with Murrindindi Fire Brigades Group and individual Brigades and communities to improve fire safety outcomes. Implementation of routine verification steps to ensure compliance with Building Control standards	✓	✓	.	.	LGA	N
		58	NSP Regulations	Follow regulations under the *CFA Act* 1958 in regard to NSP designation (S50F), maintenance (S50I), creation of an Municipal NSP Plan (S50G), erection of NSP signage (S50H), annual assessment of NSPs (S50J), MFPO to provide CFA with a list of NSPs annually (50K) and maintain a list of all NSPs and publish that list on the Council website (S50L)	✓	✓	.	.	LGA	Y
		59	Planning controls including Bushfire Management Overlay	Planning referral for new subdivisions, structures, developments. Apply range of enforceable conditions regarding access, water supply, standards, works and vegetation management, use of 173 agreements and application of building standards and licensing	.	✓	.	.	LGA	N

The table header spans: **Treatment** (ID #, Name), **Spectrum** (Prevention, Preparedness, Response, Recovery), **Application** (Targeted?[21])

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Spectrum Prevention	Spectrum Preparedness	Spectrum Response	Spectrum Recovery	Responsible agency	Application Targeted?[21]
Planning	Governance and Regulation	60	Hazard Management on Private Property	Inspections of private allotments and assets to ensure compliance with MFMP standards, planning permit conditions and regulations and safety requirements and to asses for fire hazards.	✓	✓	·	·	LGA	Y
		61	Caravan Park Emergency Management Plans	Caravan parks to have emergency plans as a requirement of the provision of their permit to operate. Audited annually by EHO.	✓	✓	·	·	LGA	Y
		62	Operation Firesetter	Increased resources in high risk areas on Severe+ FDI days, increased patrols, increased visibility and covert surveillance so as to reduce the risk of arson and increase capacity in the event of a bushfire occurring.	·	·	✓	·	Vic Pol	Y
		63	Investigations	Investigate suspicious fires to ascertain cause and identify perpetrators	·	·	·	✓	Vic Pol	N
		64	Emergency Management Plan (Site)	CFA input into site specific Emergency Management Plans including bushfire component	·	✓	·	·	CFA	N
	Planning and Communication	65	Emergency Management Response Plans	Ensure that proper and sufficient works for wildfire prevention and suppression activities in Victoria are conducted in an operationally safe, environmentally sensitive and cost- effective manner. Ensure efficient and appropriate response	·	✓	✓	·	PV	Y

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Planning	Planning and Communication	66	Technical advice	Provision of specialist technical advice and support to other agencies involved in fire mgmt. activities	.	.	✓	.	PV	N
		67	Fire Management Planning	DELWP Fire Management Zones. Strategic landscape scale zoning of public land across the state to achieve fuel mgmt. outcomes	.	✓	.	.	DELWP	N
		68	Planned burning	Implementation of planned burning and other works as identified in FOP on public land	.	✓	.	.	DELWP	Y
		69	Crown Land fuel mgmt.	Managing fuel loads on crown land. Includes slashing, mulching and burning.	.	✓	.	.	DELWP	Y
		70	Bushfire readiness	Provision of specified levels of skills and resources to respond to emergencies. Includes people (PFFs), equipment, heavy plant, aircraft, facilities and consumables	.	✓	.	.	DELWP	N
		71	Education	Programs which maintain public awareness of the bushfire threat, promote the importance of self-protection & encourage the responsible use of fire by the community. Includes multimedia messaging, in field patrols and publications.	✓	.	.	.	DELWP/PV	N
		72	Bushfire response	Respond to bushfires on public land to protect life and minimise impacts on property, communities and the environment. Includes timely provision of public information.	.	.	✓	.	DELWP	N

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	ID #	Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Planning	and Communicat	73	Emergency mgmt. support	Provide support to other organisations for emergency management, including expertise and specialist resources.	.	.	✓	.	DELWP	N
		74	Emergency Relief Handbook	Information & direction for emergency relief arrangements in Vic	.	.	.	✓	DHHS	N
		75	Bushfire plan	Individual Bushfire plans for DHHS run facilities (as necessary)	.	.	.	✓	DHHS	N
		76	Bushfire hazard identification framework	Identifies the different level of bushfire hazard at a state wide scale and the different responses that planning and building systems will implement	✓	.	.	.	DPCD	N
		77	Emergency Management Plan (Site)	Established framework for the effective handling of emergencies, includes an Emergency Management Plan for each Schools, childcare centre, preschool (public & private), mandatory training for staff, nominated bus routes, code red closures.	.	✓	.	.	DET	N
		78	Public Awareness	Fire information through notice boards, brochures, signage etc to raise awareness of fire risk.	.	✓	.	.	AusNet Services	N
		79	Technical advice	Provision of specialist technical advice, information & assistance to other agencies involved in emergency response eg temporary power cessation, line inspection in conjunction with field operations.	.	.	✓	.	AusNet Services	N

The header "Spectrum" spans the Prevention, Preparedness, Response, Recovery columns. The header "Application" spans the Targeted? column. "Treatment" spans the ID # and Name columns.

Table 8: Risk Management Strategy - Bushfire[20]

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[21]
Planning	Planning and Communication	80	Supply continuity	Maintain a response capability (scaled to level of risk) so a to minimise length of power disruptions from incidents eg fire/storms	.	.	✓	.	AusNet Services	N
		81	Restoration	Repair & replace damaged assets post fire so as to restore full services and minimise community impact	.	.	.	✓	AusNet Services	N
		82	Powerlines Hazard Identification	Preparedness around powerlines including risk ratings, inspections, maintenance and response arrangements. Includes Powerlines Bushfire Mitigation Strategy, Powerlines Faults and Emergency Events.	.	.	.	.	AusNet Services	Y
		83	Specialist Support	Provide specialist support to other agencies(eg Vic Pol, CFA, DHHS, DELWP) involved in response to an emergency, eg doorknocks, transport, staging area mgt.	.	.	✓	.	SES	N
		84	Traffic Diversion Plans	Establishment of an appropriate traffic flow, through traffic management in the community and appropriate access and egress for property and business owners. Includes Traffic Management Strategies Assistance to other agencies.	.	.	✓	.	Vic Roads	N
		85	Emergency response plan	Respond appropriately to the impacts of fire on water supply and waste management	.	.	✓	✓	GVW	N
		86	Technical advice	Provision of specialist technical advice, information & skills to other agencies involved in emergency response	.	.	✓	.	LGA	N
		87	MERC	Coordinate municipal emergency response effort in the event of a major bushfire	.	.	✓	.	Vic Pol	N

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Application Targeted?[21]
Planning	Planning and Communication	88	Evacuations	Coordinate evacuation measures undertaken in response to a bushfire threat	·	·	✓	·	Vic Pol	N
		89	Specialist Support	Provide specialist support to other agencies involved in response to a bushfire eg vehicle escorts	·	·	✓	·	Vic Pol	N
		90	Strategic Fire plan	Development and maintenance of strategic fire breaks and fire access tracks, operational restrictions on plantation activities based on forecasted FDI, a range of fire fighting resources on varying levels of preparedness based on forecasted FDI (includes fire fighting appliances, trained and experienced personnel, heavy machinery, and aerial support), strategic water points/ fire tanks placed throughout estate to ensure water availability for suppression activities.	✓	✓	✓	·	HVP	N
		91	Standard Operating Procedures	Dictate level of readiness according to the conditions so as to ensure appropriate resourcing & preparedness for optimum response	·	✓	·	·	CFA	N
	Operational	92	Resourcing	Strategic network of qualified & equipped staff, volunteers & appliances for mounting timely response to fires on private land.	·	·	✓	·	CFA	Y
		93	Fire Operations Plan	Planning of proposed fire prevention activities to be carried out on public land (includes all land managed by DELWP and PV) with the objective of reducing impacts of bushfire on life, community, critical infrastructure, industry and the environment. Includes planned burns, slashing and track works, grazing, and additions to the permanent network of strategic fuel breaks.	·	✓	·	·	DELWP	N

Risk Group	Risk Category	ID #	Name	Treatment description	Spectrum				Responsible agency	Application
					Prevention	Preparedness	Response	Recovery		Targeted?[21]
Planning	Operational	94	Regional Resourcing & activation guidelines	Identifies DHHS resource requirements for different emergencies and describes triggers for activation of different levels	·	✓	·	·	DHHS	N
		95	Response program	Maintain service continuity and minimise disruptions by responding to faults or damage to facilities, includes deployment of mobile communication units and use of generators during power outages	·	·	✓	✓	Telstra	N
		96	Risk mgt procedures	Operating procedures varied to reduce risk during high fire danger periods/events (eg reduce methane gas levels at waste treatment sites) and strategic spread of facilities and generators to spread risk and ensure continuity of supply	·	✓	·	·	GVW	N
		97	Fire Access Roads, Tracks & Water Points	Coordination of Fire Access Roads Subsidy Scheme (FARS) to enable construction & maintenance of roads, bridges & water points.	·	✓	·	·	CFA	N
	Financial	98	Emergency grants	Grant to families whose home is impacted by fire, allocated by municipality.	·	·	·	✓	DHHS	N

5.3.2. RISK MANAGEMENT STRATEGY – STRUCTURAL FIRE

It should be recognised that a range of strategies and treatments exist, which are applied consistently state wide and throughout municipalities to reduce the occurrence and impact of structure fires. These include:

- Provisions in the Victorian *Building Act 1993*
- Provisions in the Victorian Planning Scheme
- Provisions in the Building Code of Australia (BCA)
- Compliance and enforcement of legislation
- Council Essential Safety Measures (ESM) Procedures and audit inspections (see 5.5.2.1 below)
- Industry guidelines
- Standards (i.e. electrical safety)
- Engineered controls (i.e. sprinkler systems, monitored fire alarms etc.)
- Fire service response, planning and training
- Staff training
- Event permits and event management plans
- Targeted education programs
- Public awareness programs – multimedia communications

Table 9 below details the specific local treatments undertaken to mitigate structural fire risk and the management of hazardous material incidents.

Table 9: Risk Management Strategy – Structural Fire and Hazardous Material Incidents

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[22]
Social	People and Social Setting	1	Community Information	Home fire safety checklist, Early fire safe program (prevention of burns and scalds), Reduce the Risk (of home fires)	.	✓	.	.	CFA	Y
		2	Community Information for Vulnerable People	Provision of fire safety information to vulnerable persons receiving services from Council	.	✓	.	.	LGA	Y
		3	Fire equipment maintenance	Service of fire extinguishers, (fire prevention pamphlets/brochures to be left by CFA brigades when servicing extinguishers), hose reel and other fire apparatus testing and service, service and maintenance of fire alarms	.	✓	.	.	CFA	Y

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[22] *The treatments itemised in Table 9 are primarily at program level and in many cases apply equally across the municipality, however some have the ability to have resources and effort targeted at specific locations or points of interest to the MFMPC.*

Table 9: Risk Management Strategy – Structural Fire and Hazardous Material Incidents

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[22]
Social	People and Social Setting	4	Eildon structural fire response	Three appliances are required to attend every structural fire in Eildon to attempt to prevent the spread of fires to adjoining properties. In most brigade areas only single or two appliances are required to turn out for a given fire.	·	·	✓	·	CFA	Y
Economic	Production	5	Prevention of haystack fires	CFA, DEDJTR and VFF Information is produced regarding the proper curing and storage of hay to prevent hay bale fires	·	✓	·	·	DEDJTR, CFA, VFF	Y
Planning	Governance and Regulation	6	Road Management Plan	Ensure compliance with Council's Road Management Plan	·	✓	·	·	LGA	N
		7	Planning and Building Controls	New buildings are required to have minimum construction standards (electrical, structure, substructure etc) and Essential Safety Measures (ESMs). ESMs are items installed or constructed in buildings to ensure adequate levels of fire safety. Typically installed in commercial buildings, ESMs include fire services such as heat and smoke alarms, sprinkler systems, hydrants and hose reels etc., but also include passive fire safety elements such as fire rated walls, fire and smoke doors and paths of travel to exits (A full list is contained in Schedule 9 of the Building Regulations 2006).	·	✓	·	·	LGA	Y

Table 9: Risk Management Strategy – Structural Fire and Hazardous Material Incidents

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[22]
Planning	Governance and Regulation	8	Annual ESM Audit of Council Controlled Properties	Council conducts an annual ESM audit of buildings under its control. Private owners are required to maintain and audit their own ESMs	.	✓	.	.	LGA	Y
		9	Audit High Risk Buildings as Required	Municipal Building Team to audit high risk buildings for ESM and Part 7 of the Building Regulations 2006 as required. High risk buildings are prioritised and include accommodation style buildings, particularly where people are staying and the layout of the building is unfamiliar to patrons.	.	✓	.	.	LGA	Y
		10	Statutory & Legislative controls the transport of dangerous goods	Transport and storage of hazardous materials controlled by the *Dangerous Goods Act* 1985 and the 'Dangerous Goods (Storage and Handling) Regulations 2012', National heavy vehicle register	✓	.	.	.	NTC, VWA	N

Risk Group	Risk Category	Treatment ID #	Treatment Name	Treatment description	Spectrum Prevention	Preparedness	Response	Recovery	Responsible agency	Application Targeted?[22]
		11	Smoke alarm requirements	Since 1 August 1997, Victorian law states that smoke alarms (complying with Australian standards AS 3786) must be installed in all homes, units, flats and townhouses. It is the legal responsibility of all owners and landlords to install working smoke alarms. Building regulations require all new dwellings to be provided with smoke alarms connected to mains power although older buildings (built before 1997) may have battery powered alarms. It is the responsibility of the landlord to install and maintain smoke alarms in any rented property[23]	·	✓	·	·	VBA	Y
		12	Smoke Detectors and Building Occupancy Permits	Both private and Council building surveyors are required to inspect all new buildings and ensure they have appropriate smoke detectors in place before occupancy permits can be given.	·	✓	·	·	LGA	Y
		13	Event Management Plans	When staging significant events requiring organisers to submit an Event Management Plan (EMP) for approval, the plan needs to be developed in consultation with the Local Fire brigade at least four weeks prior to the event. All relevant emergency services and hospitals also have to be contacted as part of planning process.	·	✓	·	·	LGA	Y
		14	Houseboat licences and By-Law No. 1/2013 Recreational Areas	Regular inspection (slipping) of houseboats to check general condition (including fire equipment) and sewage systems.	✓	·	·	·	GMW	Y

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[23] Victorian Building Authority Website, 2015, *Smoke Alarms*, http://www.vba.vic.gov.au/consumer-resources/building/pages/smoke-alarms

Table 9: Risk Management Strategy – Structural Fire and Hazardous Material Incidents

Risk Group	Risk Category	ID #	Treatment Name	Treatment description	Prevention	Preparedness	Response	Recovery	Responsible agency	Targeted?[22]
		15	Houseboat safety regulations	Transport Safety Victoria (TSV) has regulations for gas safety, water heater safety and fuel safety for Houseboats (and other boats), Marine Safety Regulations 2012 (with detailed information on fire protection equipment requirements and maintenance)	✓	·	·	·	TSV	Y

5.4. ACTION PLAN

In addition to the above Risk Assessment and Risk Management Strategy, the MFMPC came up with an action plan. The Action Plan (Table 10 below) highlights the specific activities either currently undertaken or proposed to be undertaken to mitigate fire risk further and give further detail than listed in the Risk Management Strategy. Activity custodians refer to all agencies involved in the treatment regime. In terms of a timeline, the year column refers to the three year life cycle of the plan and which year the treatment is applicable.

Table 10: Action Plan Breakdown

Treatment ID #	Risk Description/ Title	Specific Treatment Activity	Activity Type	Treatment Status	P.P.R. R or Use	Activity Custodian	Year 1	Year 2	Year 3	Comment
1	Fires spreading from roadsides	Develop a project to more comprehensively review and combine (where possible) road side treatment programs with and between agencies.	Research	New	Prep.	MFMPC, DELWP, CFA, LGA, Vic Roads	Yes		Yes	Establish project to reduce fuel load levels on and adjacent to roadsides identified within MFMP as fuel reduced corridors or priority access roads. Review of municipal slashing program underway
2	Tourism	Investigate ways of educating tourists and tourism businesses regarding emergency management	Research	New	Prep.	MFMPC, DELWP, Lake Mountain	Yes		Yes	'Plansmart' pilot program currently being developed and tested. This program is an accreditation process for tourism based businesses where interested businesses register and complete and online training program in emergency awareness and planning. The program is designed to increase operator's understanding of the type and location of emergency information available to them and how best to convey that to clients. This can offer a competitive advantage to registered businesses as they can advertise that they are an 'emergency aware' operator.

Table 10: Action Plan Breakdown

Treatment ID #	Risk Description/ Title	Specific Treatment Activity	Activity Type	Treatment Status	P.P.R. R or Use	Activity Custodian	Year 1	Year 2	Year 3	Comment
3	Emergency Management Plans	LGA and CFA to work together to promote that major employers, tourism operators, event operators and other agencies develop Emergency Management Plans	Research	New	Prep.	LGA, CFA	Yes	Yes	Yes	Develop register of EMPs as part of project. EMPs are promoted to every new business.
4	Fire resources	Identify infrastructure that supports Fire Response (Air fields, water points, information from TPPs, Wildfire Response Plans)	Research	New	Resp.	DELWP, CFA, LGA, MFMPC		Yes	Yes	Share via Crisisworks. Mapping of CFA tanks complete. Mapping of Fuel Reduced Corridors complete. Other fire assets being mapped
5	Non-resident rate payers	Look at ways of maintaining and or engaging non-resident rate payers regarding PPRR	Advocacy	New	Prep.	LGA, CFA		Yes	Yes	All non-resident ratepayers contacted as part of the MFPO's fire inspection program
6	Data layers that are being used for the MFMP	Ensure that each agency is maintaining its data layers that are being utilised in the MFMP. Determine annual date of review (develop specific date)	Action	Current	Prep.	All relevant agencies (including CFA, LGA, DELWP, Parks Vic, DHHS, OESC etc)	Yes	Yes	Yes	Accuracy of data layers is essential in providing correct information to stakeholders and incident controllers. Council mapping roadside works in progress
7	Prevention Plan	Ensure MFPP structural fire and hazmat data is incorporated into MFMP (Fire management risk strategies 5, and Fire management treatments 7.5)	Research	Current	Prev.	MFMPC	Yes		Yes	Completed.

Table 10: Action Plan Breakdown

Treatment ID #	Risk Description/ Title	Specific Treatment Activity	Activity Type	Treatment Status	P.P.R. R or Use	Activity Custodian	Year 1	Year 2	Year 3	Comment
8	Relevant regional agency input	Ensure relevant information from agencies at a regional level is incorporated into MFMP (eg DET, DHHS etc). Update agency treatment list annually	Advocacy	Current	Prep.	MFPC	Yes	Yes	Yes	A treatment list has been created that lists all relevant treatments. The custodian of this list will be Murrindindi Shire Council. The list needs to be updated and reviewed annually. Letter sent to HRSFMPC for assistance in maintenance of regional treatment list.
9	Effectiveness of MFMP and MFMPC	Examnine the structure of the MFMPC, how it is managed and how it will be managed into the future.	Advocacy	Proposed	Prep.	MFMPC, MEMP	Yes	Yes	Yes	MFMPC (and MEMP) need to look at ways to ensure that the MFMPC is ongoing into the future. Active management of the MFMPC will be required. Support through EMV will be ongoing
10	The Municipal Fire Management Plan	Ensure that the MFMP is kept up to date by checking validity of data annually	Advocacy	Proposed	Prep.	MFMPC, All relevant agencies (including CFA, LGA, DELWP, Parks Vic, DHHS, OESC etc)	Yes	Yes	Yes	To ensure that the plan is up to date, data sources need to be verified as part of the annual review process
11	Shire-wide NSP plan	Write a plan that details the development and maintenance of NSPs across the shire.	Action	Proposed	Prep.	MFMPC, LGA, DELWP, CFA	Yes	Yes	Yes	Plan completed. All NSP requirements, checklists and locations listed. In accordance with Section 50(J) of the CFA Act, all NSPs are reviewed annually by 31st of August each year. NSP Plan available on Council website

Fire management responsibility within the municipality may be described in three categories:

- Response Agencies
- Regulatory and Service Providers
- Community

5.5.1. RESPONSE AGENCIES

- **Country Fire Authority (CFA**): is charged under the *CFA Act 1958* with the responsibility for Fire Safety Planning and Fire Suppression in all areas of Victoria, excluding the area covered by the Metropolitan Fire Brigade and Fire Protected Areas. The CFA is a community based fire and emergency service, whose mission is to protect lives and property. CFA responds directly to a range of emergency incidents, as well as conducting broader activities with the community such as education, awareness raising, industry brigades and fire investigation.

  Link to CFA Website: www.cfa.vic.gov.au

- **Department of Environment, Land, Water and Planning (DELWP):** is responsible for fire suppression and management on public land (with support from Parks Victoria), including planned burning for ecological and risk management objectives. Their objective is to protect communities and critical infrastructure from fire and to promote healthy and resilient ecosystems.

  Link to DELWP Website: www.delwp.vic.gov.au/

5.5.2. REGULATORY AND SERVICE PROVIDERS

- **Murrindindi Shire Council:** is responsible for the management of all council owned property, as well as ensuring that private land holders appropriately manage the fire risks on private land. Council officers inspect properties within the municipality to assess the potential risk of a bushfire and where necessary may issue a fire prevention notice. They also undertake annual fire prevention works on roadsides and reserves leading up to and during the fire season.
  Murrindindi Shire Council is the local coordinator of relief and recovery services at the municipal level (see Murrindindi Shire Council Relief and Recovery Plan).

  Link to Murrindindi Shire Website: www.murrindindi.vic.gov.au/

  Murrindindi Shire Council also has a role in structural fire mitigation through planning and building controls.

5.5.2.1. ESSENTIAL SAFETY MEASURES (ESM)

Essential Safety Measures are items installed or constructed in buildings to ensure adequate levels of fire safety.

Typically installed in commercial buildings, they include fire services such as heat and smoke alarms, sprinkler systems, hydrants and hose reels etc., but also include passive fire

safety elements such as fire rated walls, fire and smoke doors and paths of travel to exits. (A full list is contained in Schedule 9 of the Building Regulations 2006).

5.5.2.2. MAINTENANCE OF ESMS

ESMs need to be maintained so that each essential safety measure continues to perform at the same level of operation that existed at the time of commissioning and issue of the occupancy permit. Part 12 of the Building Regulations 2006 requires the owner of the building to maintain ESMs and prepare an annual essential safety measures report.

Where an older building does not provide an acceptable level of fire safety, the Municipal Building Surveyor may require certain ESMs to be provided to bring the building up to an acceptable level of fire safety. This is done on a case by case basis according to the building's risk.

Council's building department has identified buildings (through a risk matrix) that present a higher risk to members of the public due to the nature and use of the buildings. These are typically accommodation buildings.

Council's building department has improved the fire safety of many higher risk buildings and continues to work with building owners to reduce the level of risk to the building's occupants and members of the public.

- **Lake Mountain Alpine Resort:** Is managed by the Lake Mountain Alpine Resort Management Board (LMARMB), established under the *Alpine Resorts (Management) Act 1997.* Lake Mountain Alpine Resort Management Board provides a range of services to the Resort. These include:
    - Water supply, sewerage systems and drainage
    - Car park development and maintenance
    - Garbage and waste disposal
    - Electricity
    - Commercial Operations including: Bistro, Ski Hire, Ski School, Retail, year round events (white and green season) and adventure activities.
    - Visitor services include:
        - Snow clearance
        - Traffic control and parking
        - Trail grooming, construction and maintenance
        - Ski patrolling
        - Snow and weather reporting
        - Tourism and education information
        - Public shelters and
        - Toilets

    Link to Lake Mountain Alpine Resort Website: www.lakemountainresort.com.au/

- **Department of Health and Human Services (DHHS):** is the appointed agency to co-ordinate recovery planning and operations at the state and regional levels. At a municipal level, the responsibility for recovery is with the Murrindindi Shire Council with recovery arrangements and plans outlined in the Municipal Emergency Management Plan (MEMP) and the Municipal Relief and Recovery Plan.

Link to DHHS website: www.dhs.vic.gov.au

- **Parks Victoria:** Parks Victoria is responsible for managing the parks and reserves in Victoria and supporting DELWP response efforts.

  Link to Parks Victoria Website: http://parkweb.vic.gov.au/

- **State Emergency Services (SES):** VICSES is a volunteer based organisation responding to emergencies and working to ensure the safety of communities around Victoria. VICSES is the lead agency when responding to floods, storms and earthquakes and support agency in fire situations.

  Link to SES website: www.ses.vic.gov.au/

- **Vic Roads:** Vic Roads manage the Victorian arterial road network and its use as an integral part of the overall transport system.

  Link to Vic Roads Web site: www.vicroads.vic.gov.au/

- **Department of Economic Development, Jobs, Transport and Resources (DEDJTR):** is responsible for managing agriculture, employment and transport sectors and the state's planning system.

  Link to DEDJTR Web Site: www.ecodev.vic.gov.au

- **Victoria Police (VICPOL):** Victoria Police are responsible for ensuring a safe and secure society. They are responsible for evacuation in coordination with the incident controller.

  Link to Victoria Police Web Site: www.police.vic.gov.au/

- **Goulburn Valley Water**: provides water and sewerage services to 38 towns, villages and cities in North East Victoria, serving an estimated population in excess of 113,000 people in an area of approximately 20,000 square kilometres.

  Link to Goulburn Valley Water Web Site: www.gvwater.vic.gov.au/

- **Goulburn-Murray Water (G-MW):** G-MW is responsible for the operation of irrigation distribution channels, dams, lakes (including Lake Eildon), and stock and domestic water diversion from streams. Goulburn Murray Water is responsible for the management of its assets and the undertaking of fire prevention and fuel reduction works as part of their asset management.

  Link to G-MW Website: www.g-mwater.com.au/

- **AusNet Services:** manages three Victorian energy networks – electricity transmission, electricity distribution and gas distribution.

  Link to Ausnet Services Web Site: http://www.ausnetservices.com.au/

- **Telecommunications:** Telstra and Optus provide communication services and are responsible for telephone exchanges, mobile telephone towers, cabling and radio communication towers.

  Link to Telstra Website: www.telstra.com.au/

Link to Optus Website: www.optus.com.au/

5.5.3. COMMUNITY

Land managers, the community and individuals all have a responsibility to maintain their properties and to conduct their activities in a responsible manner with respect to fire management. The effectiveness of the Risk Management Strategy relies heavily upon the community understanding and accepting their responsibilities and acting accordingly.

While specific treatments cannot be attributed to private individuals and organisations within the Risk Management Strategy the MFMPC does have an expectation that members of the community will where appropriate:

- Prepare and plan for fires, both bushfire and structural
- Prepare their properties for fire events
- Ensure adequate access and water for fire fighting appliances
- Maintain an awareness of fire danger levels and listen for alerts and warnings.

Advice, training and support to groups, businesses and individuals concerning all of these expectations can be obtained from the CFA (see link below).

Link to CFA Plan and Prepare: http://www.cfa.vic.gov.au/plan-prepare/

5.6. BALANCING FIRE RISK AGAINST OTHER VALUES

In the course of developing the Risk Management Plan the MFMPC expressed some concerns with the treatments being applied for the mitigation of the identified risks. Some treatments adopted in the Risk Management Plan pose a potential threat to some of the important values the MFMPC is seeking to safeguard. It is imperative that the identified threats are balanced having regard for primacy of life, protecting the broader community from fire and maintaining the economic, social, and environmental well-being of the municipality.

A number of processes and treatments are already in place to ensure that all values are taken into consideration and protected during the planning and implementation of fire risk mitigation treatments. Where conflict does occur regarding treatments in the MFMP within the MFMPC a dispute resolution process allows the committee to escalate and resolve the matter at either a regional or state level by the responsible authorities.

If any members of the MFMPC believe that treatments are not effectively being carried out as identified in this plan they are asked in the first instance to write to the MFPO at Council expressing their concerns. The MFPO will contact the responsible agency to discuss the relevant treatments and attempt to solve the issue locally. If no resolution can be found at the local agency level, the matter will be brought to the MFMPC for resolution and if still unresolved that matter will be brought to the attention of the regional committee and finally the State committee if no regional resolution can be identified.

5.7. CROSS BOUNDARY MANAGEMENT AND LINKS TO OTHER PROGRAMS/PROCESSES

In developing this plan the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC has endeavoured to ensure that concerns which cross municipal, regional or state boundaries are treated in a seamless manner with regard to risk assessment and treatments. This has been achieved through:

- Consistent use of processes and tools across the region
- Deliberate alignment of municipal and regional objectives
- Frequent cross membership of MFMPCs by agencies
- Making draft and final MFMP's available to other MFMPCs

6. IMPROVEMENT AND PLAN REPORTING AND REVIEW PROCESS

Monitoring the performance of the plan is acknowledged as the key to achieving successful results, lowering the fire risk to the community. The Councils monthly performance reporting system will capture key activities at a program level to ensure implementation of the agreed actions are tracked throughout the plans three year life cycle.

It is important to track the performance of the plan and the degree to which it contributes to achieving the desired outcomes once implementation of the MFMP has commenced. Monitoring, evaluation and reporting occur throughout the life of the plan, the aim being to identify those treatments working effectively and those that may need to be modified. It also seeks to provide a transparent and accurate means of assessing the MFMP's progress in achieving its objective. The table below summarises the proposed implementation, reporting and review activities, as well as who is responsible for the task.

Table 11: Murrindindi Shire and Lake Mountain MFMP Reporting and Evaluation Program

Frequency	Task/Action	Responsible Party
Ongoing	Implement treatments, as per agreed Work Plan	All treatment owners
	Further explore identified opportunities for new or enhanced treatments with relevant stakeholders, and agree course of action	MFMPC
Biannually (every 6 months)	Report to MFMPC on the progress of treatment implementation, including an evaluation of treatment appropriateness, impact, effectiveness, efficiency, and legacy	All treatment owners
	Update Risk Register & Work Plan to reflect treatment status, as reported by treatment owner	MFMPC
Annually (every 12 months)	Conduct strategic review of risks and associated treatment program, asking: Are the identified risks still valid? Do their pre-treatment and residual risk ratings still hold true? Are there new risks that need to be added to the register and managed? Do the treatments currently in place adequately address the identified risks? Are there any new or enhanced treatments required?	MFMPC
	Review and update Plan content and mapping to ensure validity	MFMPC
	Provide overarching progress report to MEMPC focusing on the collective effectiveness of treatments in the management of risks and progress towards the achievement of objectives	MFMPC
Triennially (every 3 years)	Conduct end-to-end review of Plan, with particular focus on the environmental scan and objectives	MFMPC

*sourced Swan Hill MFMP

The integrated fire management planning process operates within a complex and challenging environment, with often limited and competing resources to achieve the desired outcome.

The MFMP provides an improved new structure and risk based approach to fire preparation, prevention, response and recovery in the municipality. The plan forms a common approach to fire planning across the Hume Region and all of Victoria and demonstrates Murrindindi Shire Council's

and Lake Mountain Alpine Resort's ongoing commitment to uphold the communities' values and expectations in relation to fire safety.

APPENDICES

APPENDIX 1: CONSEQUENCE AND LIKELIHOOD TABLES

APPENDIX 1A: STATE BUSHFIRE CONSEQUENCE TABLES

STATE DESCRIPTOR BUSHFIRE	People - Bushfire	Infrastructure - Bushfire	Public Admin - Bushfire	Environment - Bushfire	Economy - Bushfire	Social Setting
Catastrophic	50+ lives lost. Hundreds injured 1000+ houses destroyed. 2000+ people displaced. 30,000 + livestock lost.	Loss of critical infrastructure and/or services for 24-48 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for more than a week.	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.	$1B or 30% of State revenue	Severe disruption to community wellbeing over the whole area or a large part of it for a period of many years
Major	10 -50 fatalities as a direct result of the bushfire event. 300 - 1000 houses destroyed. 500 -2000 people displaced. 10,000 - 30,000 livestock lost. Significant loss of breeding stock.	Loss of critical infrastructure and/or services for up to 8-24 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for 4 days and up to a week.	Significant regional and local outrage, with some occurring at state level. Parliamentary or other inquiry leading to change 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 $300M.	Severe disruption to community wellbeing over a wide area or for more than 24 months.
Serious	2 - 10 fatalities as a direct result of the bushfire event. Large number of people affected by smoke. 30 - 300 houses lost. 200- 500 people displaced 4000 - 10000 livestock lost.	Loss of critical infrastructure and/or services for up to 2-8 hours to the Melbourne metropolitan area. Loss of services to a major regional city/several suburbs for 2-4 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 a regionally significant cultural asset such as Phillip Island penguins, Healesville Sanctuary, Puffing Billy.	Damage costs including legal actions and/or industry impacts (tourism, business etc) to the value of more than $100M.	Major disruption to community wellbeing over a moderate to large area* or for a period of months.
Significant	Single fatality and/or multiple serious injuries requiring hospitalisation as a direct result of the bushfire event. Up to 30 houses lost. 50 - 200 people displaced. 2000 - 4000 livestock lost.	Loss of critical infrastructure and/or services for up to 1 hour to the Melbourne metropolitan area. Loss of services to a major regional city for 1 day. Loss of services to 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, business etc) to the value of more than $30M.	Localised disruption to community wellbeing over a small area or for a period of weeks.
Important	Serious injury and disability, up to 50 people displaced, up to 2000 livestock lost	Loss of services to regional town for a day. Loss of services to local community of up to a week	Local concern	Temporary disturbance to local habitat . Local response and/or support for animal welfare.	Damage costs including legal actions and/or industry impacts (tourism, business etc) to the value of less than $30M.	Localised disruption to community wellbeing over a small area or for a period of up to one week.

APPENDIX 1B: CERA CONSEQUENCE TABLES

	Rating	People	Environment	Economy	Public Administration	Social Setting	Infrastructure
1	Insignificant	• Near misses or minor injuries, no reliance on health system.	• Near misses or incidents without environmental damage, no recovery efforts required	• Financial loss < 0.1% of the jurisdiction's revenues[1], to be managed within standard financial provisions. • Inconsequential disruptions at business level.	• Governing body manages the event within normal parameters. • Public administration functions without disturbances. • Public confidence in governance, no media attention.	• Inconsequential short-term reduction of services. • No damages to objects of cultural significance. • No adverse emotional and psychological impacts.	• Inconsequential short-term failure of infrastructure and service delivery. • No disruption to the public services.
2	Minor	• Isolated cases of serious injuries. • Health system operating within normal parameters. • Displacement of people within jurisdictional capacity to cope. • Personal support needs being met.	• Isolated cases of environmental damage. • One-off recovery efforts required to supplement self-repair. • Damage localised in extent. • Short term impairment of ecosystem functions up to one year.	• Financial loss, 0.1-0.3% of the jurisdiction's revenues[1], requiring activation of reserves to cover loss. • Disruptions at business level leading to isolated cases of loss of employment.	• Governing body manages the emergency event under emergency regime. • Public administration functions with some disturbances. • Isolated expressions of public concern. • Jurisdiction perceived as able to pursue business as usual despite disruptions.	• Isolated and temporary cases of reduced services within community. • Repairable damage to objects of cultural/ heritage significance. • Localised disruption to community wellbeing and social networks over a small area for a period of weeks.	• Infrastructure/ systems failure impacts on part of community's functioning over a small area for a short period (a few weeks). • Localised inconvenience.
3	Moderate	• Isolated cases of lives lost and/or some cases of serious injuries. • Health system operating at maximum surge capacity. • Displacement of people within capacity of the jurisdiction to cope for periods of less than 24 hours. • Elements of jurisdictional personal support system operating at maximum capacity.	• Isolated but significant cases of impairment or loss of ecosystem function(s) at locality within jurisdiction. • Some remedial efforts required for recovery. • Medium term impairment up to two years.	• Financial loss, 0.3-1% of the jurisdiction's revenues[1], requiring adjustments to business strategy to cover loss. • Disruptions to selected industry sectors leading to isolated cases of business failure and multiple loss of employment.	• Governing body manages the emergency event with considerable diversion from policy. • Public administration functions limited by focus on critical services. • Instances of public protests with emergent alarm. • Significant diversion from State policy goal(s) or program(s).	• Ongoing reduced services within community. • Permanent damage to objects of cultural/heritage significance. • Major disruption to community wellbeing and social networks over a locality for a period of months.	• Infrastructure/ systems failure puts severe pressure on part of community's functioning over a medium to large area for a medium period (up to three months). • Widespread inconveniences but no external support required.

		People	Environment	Economic	Public Administration	Social Setting	Infrastructure
4	Major	• Multiple loss of life (mortality in the order of 0.001% of the jurisdictional population). • Health system operating at maximum capacity, under severe pressure. • Isolated cases of displacement of people for periods in the order of a day. • Jurisdictional personal support system operating at maximum capacity. • Normal health care and living standards difficult to maintain.	• Severe impairment or loss of ecosystem functions affecting one or more species or regional landscapes. • Progressive environmental damage. • Extensive recovery effort required. • Serious long term impairment or loss of ecosystem function(s) up to five years.	• Financial loss, 1-3% of the jurisdiction's revenues[1], requiring major changes in business strategy to (partly) cover loss. • Significant disruptions across industry sectors leading to multiple business failures and loss of employment.	• Governing body absorbed with managing the emergency event. • Public administration struggles to provide critical services. • Loss of public confidence in governance, with serious widespread public outcry and some alarm. • State policy goal(s) or program(s) abandoned.	• Reduced quality of life within community. • Significant loss or damage to objects of cultural/heritage significance. • Severe disruption to community wellbeing and social networks over a wide area for up to two years.	• Medium to long term (three to six months) failure of significant infrastructure and service delivery affecting large parts of the community. • Initial external support required.
5	Catastrophic	• Widespread multiple loss of life (mortality in the order of 0.01% of the jurisdictional population). • Health system over-stressed. • Large numbers of displaced people for periods of days or more. • Aid sourced from outside the jurisdiction, people leave the jurisdiction to seek help. • Normal health care and living standards abandoned.	• Widespread severe impairment or loss of ecosystem function(s) across many species and multiple or large regional landscapes. • Irrecoverable environmental damage. • Permanent loss of ecosystem in its pre-existing form. • Limited ecosystem recovery over more than five years.	• Unrecoverable financial loss > 3% of the jurisdiction's revenues[1]. • Asset destruction across industry sectors leading to widespread business failures and loss of employment	• Governing body unable to manage the emergency event. • Disordered public administration without effective functioning. • Public alarm and unrest, civil order requires inter-jurisdictional reinforcement. • Government resigns or alternative governance necessary for some period.	• Community ability to support itself severely impaired. • Widespread loss of objects of cultural/heritage significance. • Severe disruption to community wellbeing and social networks over the whole area or a large part of it for a period of many years.	• Long term failure (over six months) of significant infrastructure and service delivery affecting most of the community. • Ongoing external support at a large scale required.

Consequence Category Definitions (Table 2)

People	• The health system, i.e. doctors, hospitals, ambulances at local/regional levels. • Local/regionally-based resources and systems to assist people who are displaced from their homes for a length of time. This includes temporary accommodation. • Local/regionally-based resources for supporting affected/displaced people with e.g. material aid, food, financial assistance, personal support services.
Environment	• The continued normal functioning of significant ecosystems.

Economy	• The economy of the local area, considering:
	  • value of overall damage and consequential losses incurred
	  • disruption to particular sectors of industry
	  • need for extraordinary government financial provisions for recovery

Public Administration	• Relates to the impacts of the emergency on the governing body's ability to govern.
Social Setting	• The ability of the community to maintain normal functioning, its resilience, its social fabric and cultural values and heritage.
Infrastructure	• The functionality and continued supply, via the critical infrastructure systems, of the essentials of contemporary society, e.g. fuel, water, telecommunications, transport, food supply, money.

APPENDIX 1C: LIKELIHOOD TABLE AND RISK ASSESSMENT MATRIX

Likelihood Table

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

Risk Assessment Matrix

Consequence Level					
Likelihood Level	Important	Significant	Serious	Major	Catastrophic
Almost Certain	Moderate	Moderate	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Low	Moderate	High	High
Unlikely	Low	Low	Moderate	Moderate	High
Rare	Low	Low	Low	Moderate	Moderate

APPENDIX 2: STAKEHOLDER ANALYSIS & COMMUNITY ENGAGEMENT PLAN

 In accordance with the IFMP planning guide the Murrindindi Shire Council and Lake Mountain Alpine Resort MFMPC undertook a stakeholder analysis and used this as a basis for the development of a Communication and Engagement Plan concerning the MFMP.

The stakeholder analysis consisted of a two part process; firstly identifying the key stakeholders who needed to be engaged in the MFMP's development and secondly determining the nature and level of their interest in fire management planning. This second step involved considering each stakeholder in relation to eight different fire management roles which are described in Appendix 2A and four different stakeholder types as outlined in Appendix 2B. Appendix 2C summarises the community and organisational engagement plan.

APPENDIX 2A: FIRE MANAGEMENT ROLES

Role	Description
Fire coordination	Bringing together of fire management agencies and elements to ensure effective response to an incident or emergency. CFA has legislated responsibility under the *CFA act 1958* for the prevention and suppression of fires and for the protection of life and property in the Country Area of Victoria. In accordance with provisions in the *CFA Act 1958, Forest Act 1958, Forests (Fire Protection) Regulations 2014, Safety on Public Land Act 2004* and the *National Parks Act 1975* DELWP has fire management and fire suppression responsibilities for state forests and national, state and regional parks.
Land owner/manager responsibilities	Landholder/managers are heavily involved in fire prevention and fire suppression on land under their control. They have legislated responsibilities to extinguish a fire burning on their land and to prevent fires from starting from the use of equipment and vehicles (*CFA Act 1958, Crimes Act 1958*). They are also required to comply with relevant State government laws, local government laws, relevant planning and building permit conditions and conditions associated with permits to burn
Response	Actions taken in anticipation of, during and immediately after a fire incident to minimise the impact of the fire.
Recovery	A coordinated process of supporting emergency affected communities in the reconstruction of physical infrastructure and restoration of emotional, social, economic and physical well-being.
Community education	Community education is learning and social development, working with individuals and groups in their communities using a range of formal and informal methods
Community care	Community care is about identifying and catering for groups or individuals with specific needs, before during and after fire.
Asset protection	Asset protection involves protecting key community infrastructure such as power, water supplies, roads, gas pipes and protecting community assets such as parks and the environment. Asset protection can also involve the protection of private assets such as housing, plantations, crops and fences.
Regulatory	The issuing of permits for lighting fires. The development of and compliance with planning controls and permits for developments and building that take into account fire risk/management. The regulation and issuing of permits involving vegetation removal or fuel reduction activities for fire management purposes.

APPENDIX 2B: STAKEHOLDER TYPE AND ENGAGEMENT LEVEL

Stakeholder Type	Description	Participation Level*
Internal	Formal responsibilities for IFMP process and outcomes	Collaborate and empower
Primary	MFMPC membership, responsibility for development of the plan, communication and engagement across and within organisations rest with these organisations	Collaborate and empower
Secondary	RSFMPC membership or fire management role within municipality, may be requested to provide specific inputs, dependent upon outputs, or requested to be involved in specific tasks,	Involve and consult
Tertiary	Strong interest in outcomes	Inform and consult

*IAP2 Public Participation Spectrum: *empower → collaborate → involve → consult → inform*

The following table describes the types of stakeholders and how they were engaged on the IAP2 spectrum.

APPENDIX 2C: COMMUNITY AND ORGANISATIONAL ENGAGEMENT PLAN

STAKEHOLDER ANALYSIS

The following table is a summary of the type of stakeholder and their fire management responsibility in Murrindindi Shire.

Stakeholder	Type				Fire management role within Hume region									
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm info	Comm care	Asset protect	Regulate	RSFMPC member	Other
Hume RSFMPC	✓						✓	✓	✓				✓	Regional IFMP oversight & strategic fire planning
MEMPC	✓						✓	✓	✓					Municipal integrated & strategic emergency planning
MFMPC	✓						✓	✓	✓					Municipal integrated & strategic

Stakeholder	Type				Fire coord	Land mgr	Response	Recovery	Comm info	Comm care	Asset protect	Regulate	RSFMPC member	Other
	Internal	Primary	Secondary	Tertiary										
														fire planning
Murrindindi Shire Council		✓				✓	✓	✓	✓	✓	✓	✓		
Lake Mountain Alpine Resort		✓				✓			✓		✓			
CFA		✓			✓		✓	✓	✓		✓	✓	✓	Fire safety expertise
DELWP		✓			✓	✓	✓	✓	✓		✓	✓	✓	Forest fire expertise
Parks Victoria			✓			✓	✓	✓	✓		✓		✓	
Landcare Groups			✓			✓								
DHHS			✓				✓	✓		✓			✓	
DPCD			✓					✓				✓	✓	Oversight of rural adjustment & development programs, development of planning controls
DEDJTR				✓				✓					✓	Animal health, agricultural loss & recovery responsibilities
Victoria Police			✓				✓						✓	
SES			✓				✓						✓	
Vic Roads			✓			✓	✓				✓	✓	✓	
AusNet Services			✓							✓			✓	
Rail Industry			✓			✓					✓		✓	
Goulburn Valley Water			✓							✓	✓		✓	
Goulburn-Murray Water			✓			✓					✓			

| Stakeholder | Type | | | | Fire management role within Hume region | | | | | | | | | |
	Internal	Primary	Secondary	Tertiary	Fire coord	Land mgr	Response	Recovery	Comm info	Comm care	Asset protect	Regulate	RSFMPC member	Other
Telstra			✓							✓	✓		✓	
Optus			✓							✓	✓			
Melbourne Water				✓		✓					✓			
VFF				✓		✓								
AGL Hydro				✓		✓								
GBCMA				✓		✓		✓			✓	✓		
HVP				✓		✓	✓	✓			✓			
DET				✓						✓				
Ambulance Vic				✓						✓				
Media – Radio UGFM				✓			✓		✓					
Local community/industry groups				✓										
General public				✓		✓	✓	✓			✓			Responsibility for private property, social networks & personal well-being.
Rail Trail Group				✓		✓			✓					

COMMUNITY AND ORGANISATIONAL ENGAGEMENT MATRIX

The following table summarises the MFMP Community and Organisational Engagement plan. It highlights how each stakeholder will be involved or consulted in the preparation of the MFMP. It utilises the IAP2 spectrum (see figure 5, section 2 of MFMP) to determine the level of contact and divides the stakeholders into Internal, Primary, Secondary or Tertiary.

Murrindindi Shire and Lake Mountain MFMPC Communication & Organisational Engagement Matrix										
Stakeholder	**Engagement Level**	**Engagement activity**								
		Meeting minutes, reports & agendas	1:1 consultation	IFMP & Murri Shire web site	Email updates	Media articles	Special meetings	Draft consultation	3 year review	Individual org networks
Internal Stakeholders										
Hume RSFMPC MEMPC MFMPC	Collaborate & empower	✓		✓	✓	✓	✓	✓	✓	
Primary – answerable for activity/decision										
Municipal Council/Alpine Resort Board CFA DELWP	Collaborate & empower	✓	✓	✓	✓	✓	✓	✓	✓	✓
Secondary – Contributory responsibility										
Parks Victoria DHHS DPCD Victoria Police SES Vic Roads AusNet Services Rail Industry Goulburn Valley Water Goulbourn-Murray Water Relevant water authority Telstra Optus Landcare Groups WICEN	Involve & consult		✓	✓		✓	✓	✓	✓	✓

Murrindindi Shire and Lake Mountain MFMPC Communication & Organisational Engagement Matrix										
Stakeholder	**Engagement Level**	**Engagement activity**								
		Meeting minutes, reports & agendas	1:1 consultation	IFMP & Murri Shire web site	Email updates	Media articles	Special meetings	Draft consultation	3 year review	Individual org networks
Tertiary - Interested										
Melbourne Water	Inform & consult			✓		✓		✓	✓	
DEDJTR										
EPA										
VFF										
GBCMA										
HVP										
DET										
Ambulance Vic										
Media										
Local community/industry groups										
General public										
Rail Trail Group										

Map 1: Murrindindi Shire Burned Area (Bushfire) 1939-2011

- This map shows the area burned by bushfires in Murrindindi Shire from 1939-2011.

Map 2: Murrindindi Shire Burned Area (Fuel Reduction) 2000-2015

- This map shows the area of DELWP fuel reduction burning or 'treatments' from 2000-2015 within Murrindindi Shire.

Map 3: DELWP Fire Management Zones in Murrindindi Shire

- This map details DELWP's fire management zones. Different management regimes are used in each zone. There are four distinct DELWP fire management zones. These are:

  - **Asset Protection Zone (APZ):** This zone aims to provide the highest level of localised protection to human life, property and highly valued assets. Through reducing radiant heat, flame front and ember attack to a reasonable level using intensive fuel management. Fuel management will be carried out in the APZ through a combination of planned burning, and other methods such as mowing or slashing.

  - **Strategic Wildfire Moderation Zone** (**SWMZ):** This zone aims to reduce the speed and intensity of future bushfires. This zone complements the APZ, and also provides strategic areas to mitigate risk through the landscape. The use of planned burning in the SWMZ is designed to protect nearby assets from ember spotting during a bushfire.

  - **Ecological Management Zone (EMZ):** This zone aims to promote biodiversity and ecological renewal. Planned burning will be used to manage native species and ecological communities which require fire to regenerate. This also assists with fire protection outcomes by reducing the overall fuel hazard in the landscape.

  - **Prescribed Burning Exclusion Zone** (**PBEZ):** This zone excludes the use of planned burning, primarily in order to protect biodiversity – for example, fire sensitive rainforest.
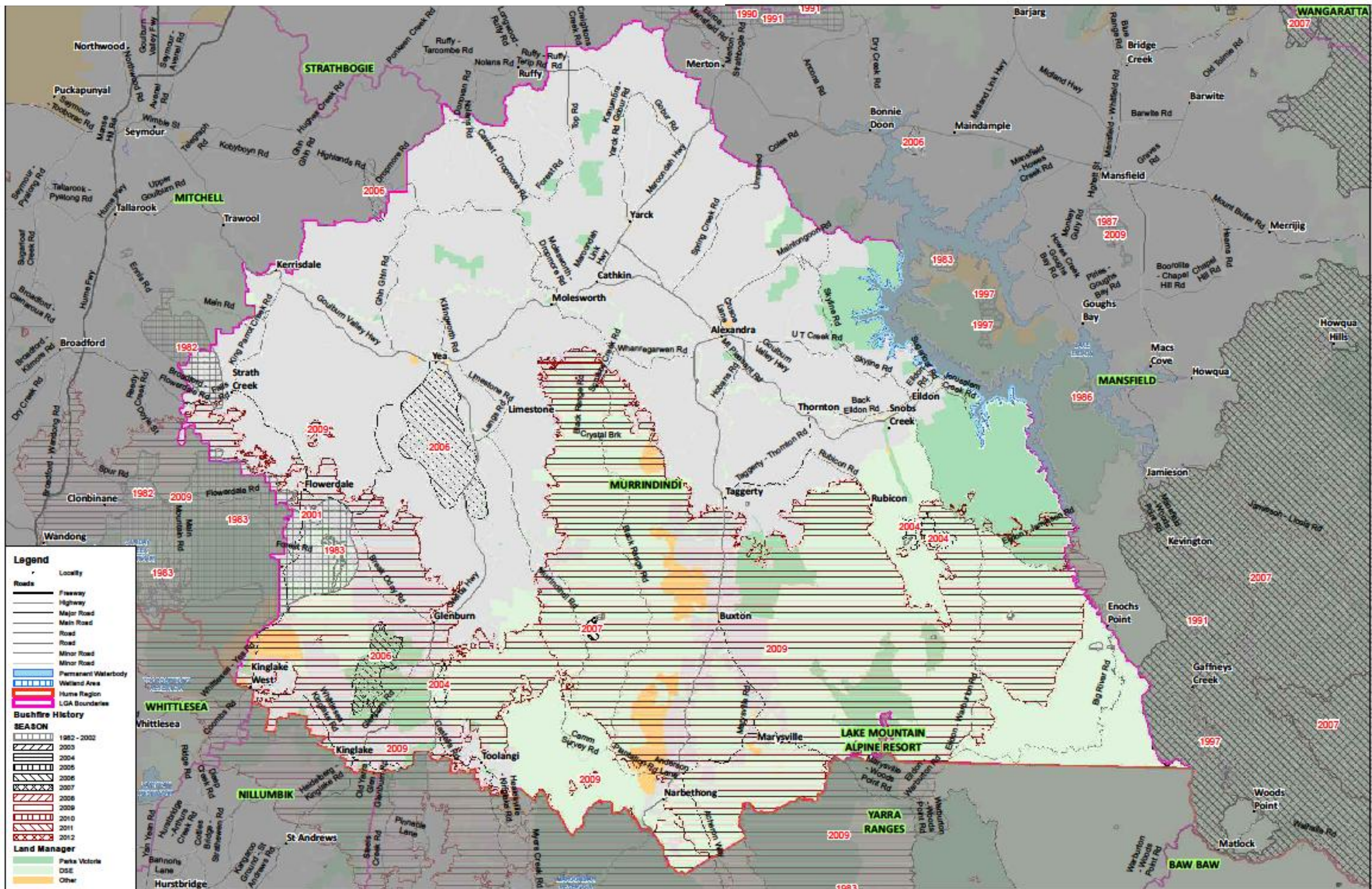
Map 4: Biodiversity Values in Murrindindi Shire

- This map details the Biodiversity values of the Murrindindi Shire including Ecological Vegetation Classes. It is not an exhaustive list and should only be used as a guide for the location of biodiversity values. It flags values that need to be factored into any discussions regarding possible fire treatments.

Map 5: Murrindindi Shire Council Fire Prevention Program

- This map shows areas managed by Murrindindi Shire Council that receive fire prevention treatments (primarily slashing and or spraying) in the annual fire prevention program.

Map 2: Murrindindi Shire Burned Area (Fuel Reduction) 2000-2015

August 31, 2015

Legend:

Fire History 2000-2015
FIRETYPE, SEASON
- BURN, 2011 - 2015
- BURN, 2006 - 2010
- BURN, 2000 - 2005
- StateForest
- Parks & Reserves
- Plantations
- Town Area

- Localities
- Power Line
- lake
- main_river
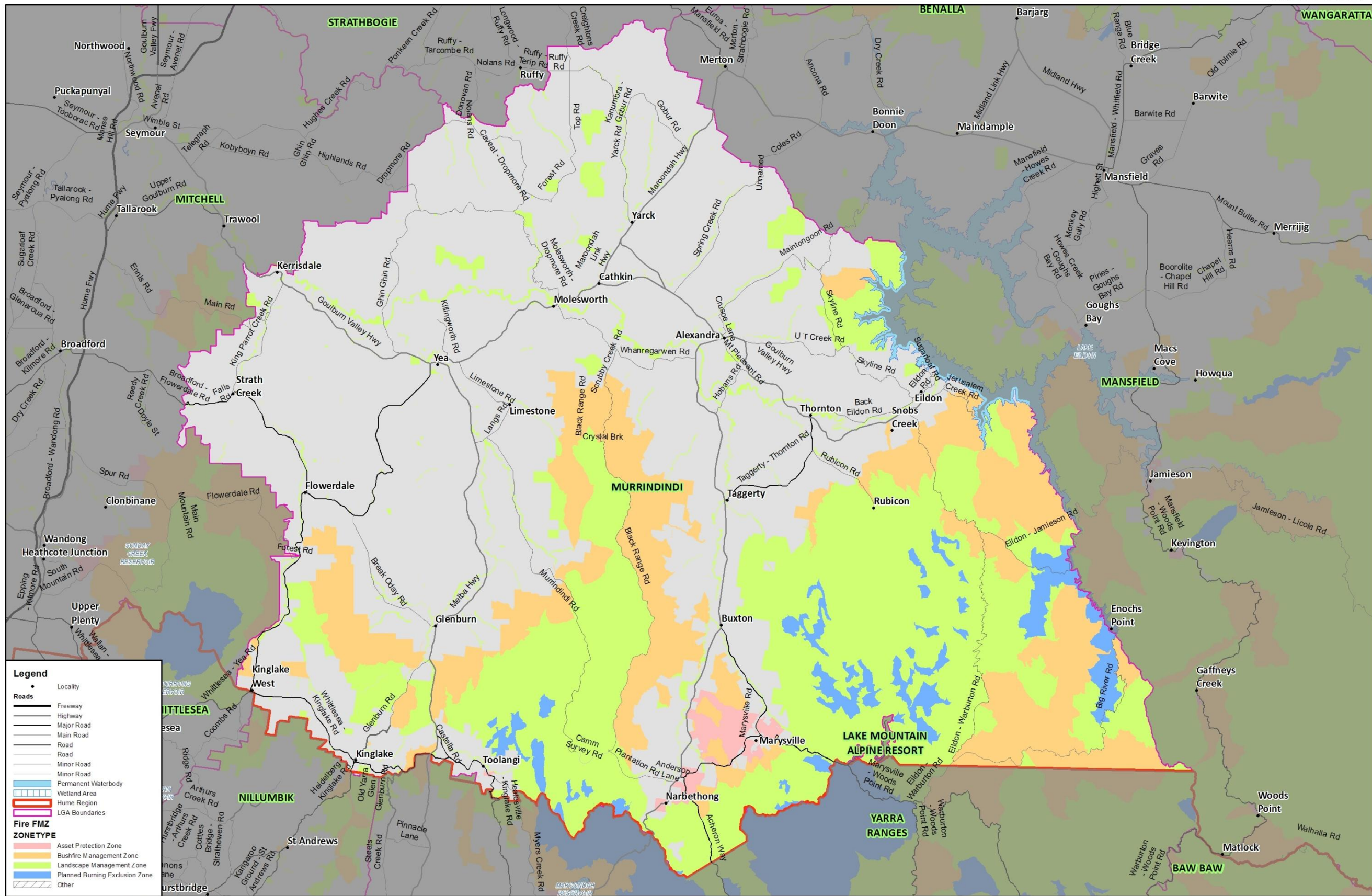- Freeway
- Highway
- Main Road
- Collector
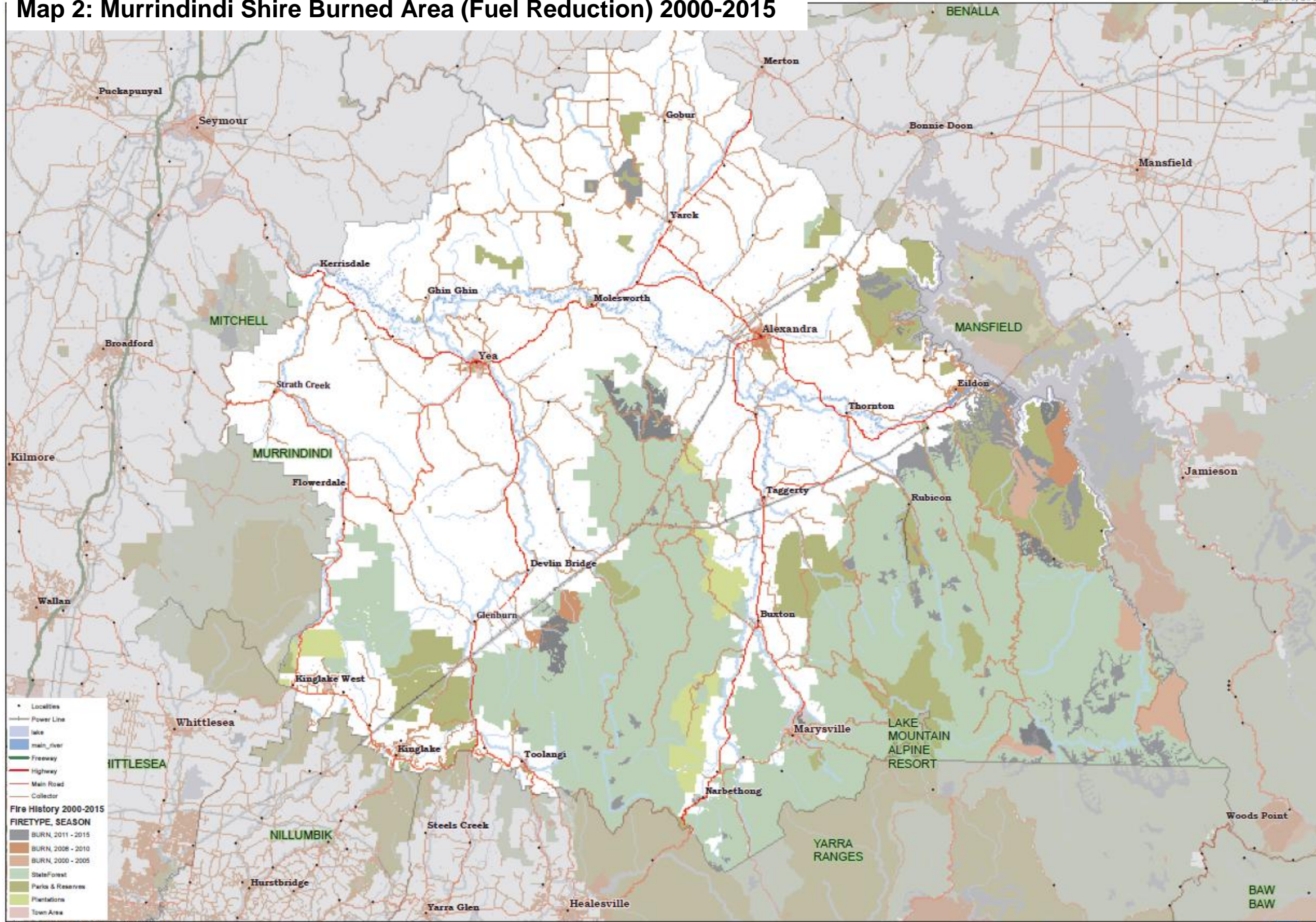
Map produced by DELWP, Alexandra, 2015
This publication may be of assistance to you but the
State of Victoria and its employees do not guarantee
it is without any kind of flaw.

1:300,000
GDA 1994 VICGRID94

0   5   10
Kilometers

VICTORIA
State Government

Legend

Roads
- • Locality
- Freeway
- Highway
- Major Road
- Main Road
- Road
- Road
- Minor Road
- Minor Road
- Permanent Waterbody
- Wetland Area
- Hume Region
- LGA Boundaries

Fire FMZ
ZONETYPE
- Asset Protection Zone
- Bushfire Management Zone
- Landscape Management Zone
- Planned Burning Exclusion Zone
- Other

Map Produced by Wodonga GIS team, July, 2012
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publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all
liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

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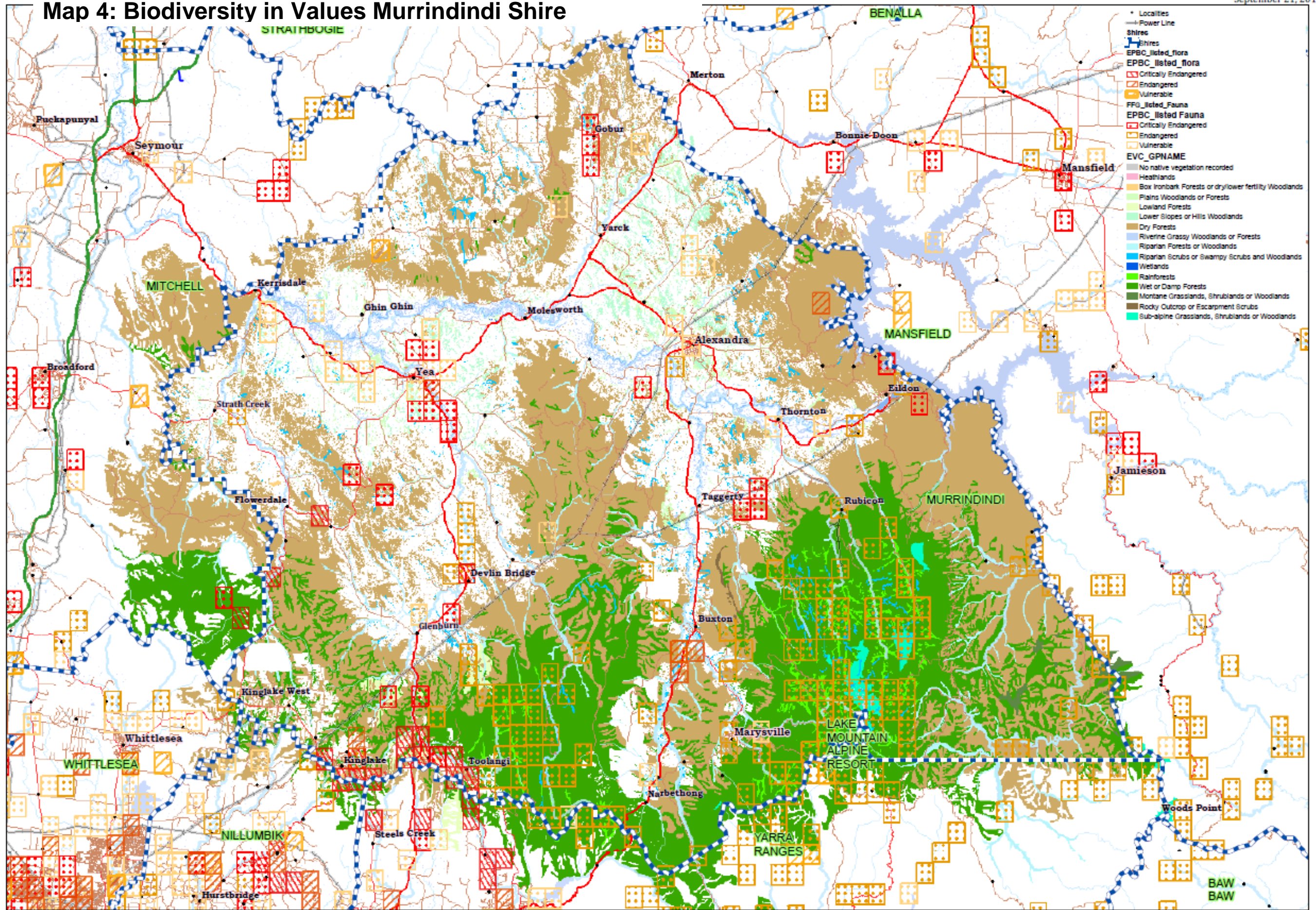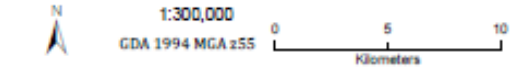   Kilometers

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Scale: 1:300,000   GDA 1994 VICGRID94

State Government
Victoria

Map 4: Biodiversity in Values Murrindindi Shire

September 21, 2015

Biodiversity Values Overview: Murrindindi Shire

1:300,000

GDA 1994 MGA z55

Map 5: Murrindindi Shire Council Fire Prevention Program

Fuel Reduction Corridors

Id	Road_Name
1	Highlands Road
2	Ghin Ghin Road
3	King-Parrot Crk Road
4	Limestone Road
5	Dairy Creek Road
6	Molesworth-Dropmore Rd
7	Molesworth-Dropmore Rd
8	Murrindindi Road
9	Break O'Day Road
10	Whanregarwen Road
11	Langs Road
12	Sierra Hills Drive
13	Siers Lane
14	Watsons Road
15	Pheasant Creek Road
16	OGradys Road
17	Estons Road
18	Johnann Road
19	Estons Road
20	Estons Road
21	Kinglake-Glenburn Road
22	West Bridge Road
23	Kinglake-Glenburn Road
24	Kanumbra-Gobur Road
25	Yark Road
26	Spring Creek Road
27	Taits Lane
28	Maintongoon Road
29	U.T Creek Road
30	Back Eildon Road
31	Rubicon Road
32	Whanregarwen Road
33	Glendale Lane
34	Connellys Creek Road
35	Connellys Creek Road
36	Cathedral Lane
37	Snobs Creek Road
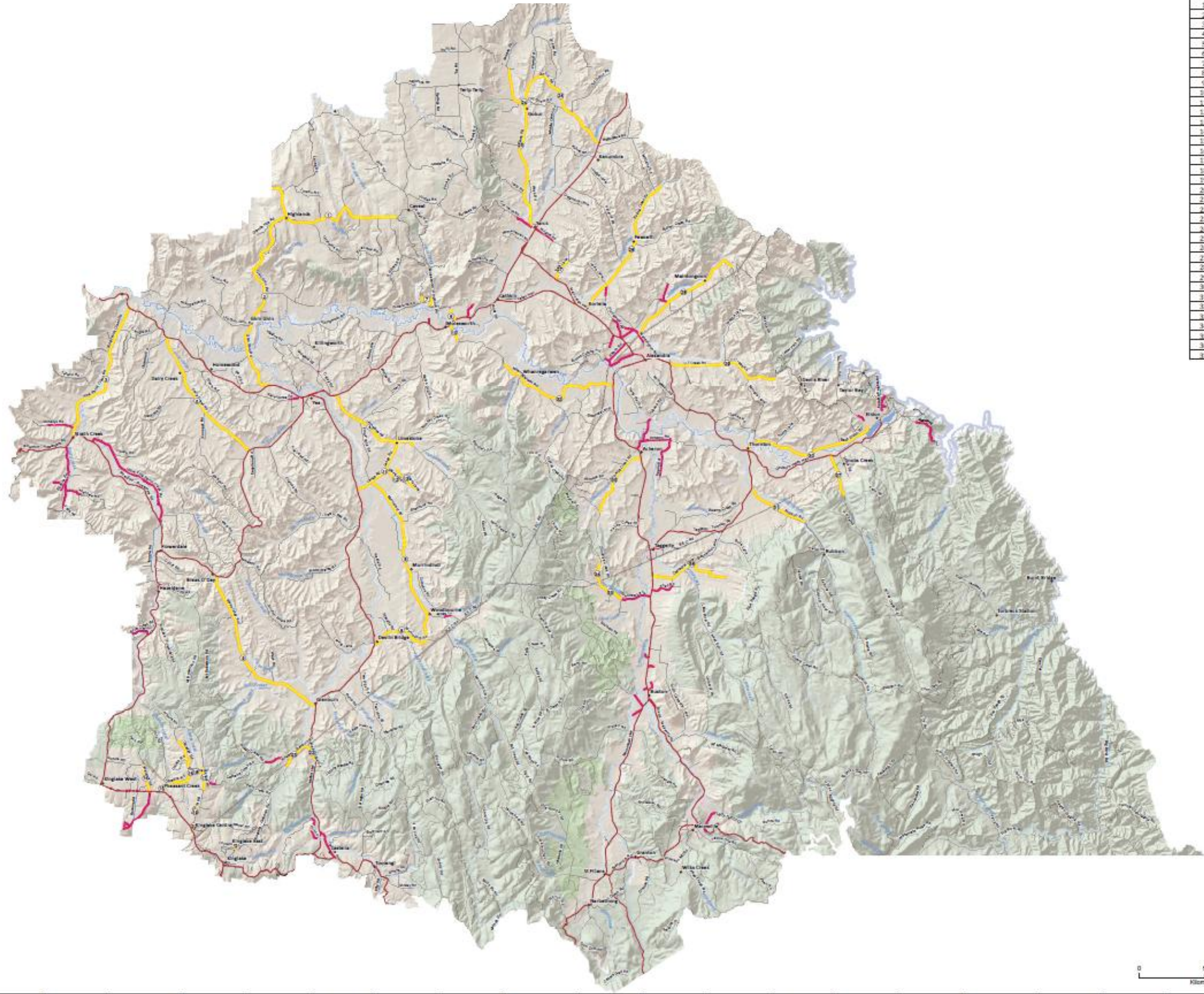
Legend:
- Shire_slashing_as_rqd
- MurShire_FuelReductionCorridors2015
- Major Roads
- Roads
- Power Line
- Crown Land
- Plantations
- Town Area

1:100,000

The Electricity Safety Act 1998 (Vic) (**ES Act**) provides that a municipal council must specify, within its Municipal Fire Prevention Plan:

(a) procedures and criteria for the identification of trees that are likely to fall onto, or come into contact with, an electric line (**hazard trees**); and

(b) procedures or the notification of responsible persons of trees that are hazard trees in relation to electric lines for which they are responsible.

Under the ES Act, the person responsible for maintaining vegetation and clearance space around power lines is referred to as the 'responsible person'.

The procedures outlined in this section of the MFMP seek to address the requirement detailed above.

Each responsible person should have its own internal procedure regarding the steps that will be taken when it receives notification of a potentially hazardous tree.

What is a hazard tree?

According to the ES Act, a hazard tree is a tree which is likely to fall onto, or come into contact with an electric line.

The Electricity Safety (Electric Line Clearance) Regulations 2010 (**the Regulations**) further provide that a responsible person may cut or remove such a tree, provided that the tree has been assessed by a suitably qualified arborist and that assessment confirms the likelihood of contact with an electric line having regard to foreseeable local conditions.

Due to legal requirements which require a clearance space be maintained around an electric line, hazard trees are usually located outside the regulated clearance space. Despite being outside the clearance space, the tree still have the potential to contact the line due to its size or because of a structural fault or weakness which renders part, or all, of the tree likely to contact or fall onto the line.

Who is responsible for a hazard tree?

Under the ES Act, the person responsible for maintaining vegetation and clearance space around power lines is referred to as the "responsible person". This includes responsibility for keeping the whole or any part of a tree clear of the line.

Under the ES Act, responsibility is allocated between distribution businesses and other owners of electricity infrastructure, land owners and occupiers, public land managers such as municipal councils and VicRoads.

Municipal councils are responsible for trees on public land within their municipalities, for which they are the land manager, where these are also within a Declared Area for the purposes of the ES Act. Primary responsibility for vegetation clearance and management within the municipality, for areas which are not within a Declared Area, will usually fall to the relevant electricity distribution company.

NOTE: There is no "Declared Area" within Murrindindi Shire

As a result the electricity distributor becomes the "Primary Responsible Person"

Responsible Persons within the Shire of Murrindindi.

There is one organisation that has responsibility for line clearance in Murrindindi Shire: SP-AusNet for distribution lines.

Other relevant information

Responsible persons, other than private persons, must have an electric line clearance management plan in place for areas for which they have responsibility (refer Electricity Safety (Electric Line Clearance) Regulations 2010).

Municipal Fire Prevention Strategy (MFPS) amended February 2011, section 4.06, is currently under review with the development of the Murrindindi Shire Municipal Integrated Fire Management Plan due for completion December 2012.

PROCEDURES AND CRTIERIA FOR IDENTIFYING HAZARD TREES

In the course of everyday duties, potentially hazardous trees may come to the attention of staff or volunteer members of the entities with representation on the Municipal Fire Management Planning Committee, (**the Committee**), staff of the distribution business(es) or other persons, including members of the public.

There are a range of factors which may indicate that a tree is a hazard tree. That is, a tree which is likely to fall onto, or come into contact with, an electric line. Some of these factors will be obvious when looking at the tree but many may only be apparent when the tree is assessed by a person with specific expertise and training such as an arborist.

The following criteria may be used to assist in identifying a hazard tree:

- The size of the tree suggests that it is likely to come into contact with the electric line, for example because it appears to be encroaching or growing into the line clearance space.

- There is an excessive lean on the tree, or branches hanging off the tree and the tree is in proximity to an electric (power) line.

- The size or appearance of the tree suggests it could come into contact with the line including under foreseeable local conditions.

If a potentially hazardous tree is identified, the notification procedure outline below should be followed. Where a responsible person becomes aware of a potentially hazardous tree for which they have responsibility, they must follow their own applicable internal procedure and the notification procedure described does not apply.

PROCEDURES AND CRITERIA FOR NOTIFYING HAZARD TREES

To ensure that information regarding potentially hazardous trees is captured in an efficient manner and, as appropriate, referred to the responsible person for action, the following procedure for the notification of hazardous trees should be followed:

- The person with responsibility for the highest percentage of lines within the municipality (**the primary responsible person**) is the person to whom potentially hazardous trees should be reported.

- The primary responsible person (or their representative) is referred to in these Procedures as the primary responsible person representative (**PRPR**).

- Where any person becomes aware of, or receives a report of, a potentially hazardous tree within the municipality, this should be referred to the PRPR. Where the Council becomes aware of, or receives a report of, a potentially hazardous tree within the municipality, this must be referred to the PRPR.

- Reports of potentially hazardous trees must be provided to the PRPR for action as soon as practicable. Reports must include, at a minimum:

  o The name and contact details and any relevant qualifications where known of the person making the report

  o As much detail as possible about the location of the trees (including, where known, GPS coordinates, details of numerical/name plate on nearest pole, name of nearest road or crossroads, closest landmark, whether tree is on private land or road reserve etc.)

  o A description of the tree (including, if known, the genus and species of tree)

  o The primary reasons given for the tree being identified as potentially hazardous (eg. Tree is in proximity to an electric line AND there is evidence of structural weakness and/or excessive lean and/or appears to be encroaching into line clearance space etc.)

  o An indication of whether or not urgent action is required.

- The PRPR must take all necessary steps to advise the person responsible for the tree that it may be hazardous.

Primary Responsible Person Representative (PRPR)

For the purposes of this part of the Plan, the primary responsible person is 'AusNet Services' with responsibility for the power lines within the Local Government Area – Murrindindi Shire

Contact details for AusNet Services are as follows:

Agency name	Select Solutions (a division of AusNet Services
Position title of contact person	Peter Scotto
Telephone Number	03 9237 4416 or 0408 403 749
Email Address	peter.scotto@select-solutions.com.au
After Hours Number	03 9237 4419 or 13 17 99

Note also General emergency enquiries AusNet Services 92293778- (24hr availability) –

- Electrical Faults & emergencies Phone 131799

Corporate Emergency Planning and Security Emergency Operations Centre:

- Phone. 9679 4051 - Mobile. (M/AH) 0488 619442 - emergency@sp-ausnet.com.au

PROCEDURES FOR NOTIFICATION OF RESPONSIBLE PERSONS

Where a potentially hazardous tree has been reported to the PRP, the PRPR should follow the procedure outlined below:

Step 1	Report provided to PRPR	
Step 2	PRPR to determine who the responsible person is in relation to the reported tree (If necessary, the PRP can seek assistance from ESV for this step.)	
Step 3	Is the responsible person the primary responsible person?	**Yes =>**applicable internal procedure for referral and assessment of potentially hazardous tree to be followed
		No=>proceed to Step 4
Step 4	Did the report indicate that urgent action is required?	**Yes+>** the responsible person should be notified as soon as possible, and by the close of the next business day.
		No=> the PRPR must advise the responsible person of the existence and location of a potentially hazardous tree in accordance with the timelines below.*

*   The PRPR should put in place mutually agreed arrangements for the manner in which it passes on reports of potentially hazardous trees to responsible persons.

Reporting Timelines

The PRPR should provide reports to the relevant responsible person as soon as practicable.

In circumstances where:

▪ the potentially hazardous tree is located within a high bushfire risk area (as per s.80 of the ES Act) and the potentially hazardous tree is reported during the fire danger period declared under the Country Fire Authority Act 1958 (Vic); or

▪ the report indicated that there is an imminent danger that the tree will contact or fall onto lines as a result of minor environmental changes;

- the potentially hazardous tree must be referred to the relevant responsible person for action as soon as possible, and by the close of the next business day.
- Each responsible person (other than the primary responsible person) must provide the PRPR with contact details of the person (position title) to whom reports should be provided. It is the responsibility of each responsible person to ensure that the PRPR is provided with up-to-date contact details.

Register

It is recommended that the PRPR maintain a register in which all notifications are recorded together with the date of receipt of the notification and the date the notification was reported to the responsible person.

It is recommended that responsible persons also maintain a register of notifications received of hazardous trees for which they are the responsible person.

PRPR Consultation

The Committee notes that the Primary Responsible Person was consulted in relation to the development of these procedures.

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Community Information Guide (CIG):

CIGs provide a planned response for both emergency services and the community to a bushfire within close proximity to a township that has the potential to impact on the local community. These plans address the specific needs of the town's people, their safety and pre-planning, property preparation, asset protection, environment and economy, and are typically divided into 3 parts: a) Community Information. b) Township planning factors. & c) Fire Prevention

CIGs have been completed and are available for the following towns in the Murrindindi Shire:

- Flowerdale and Hazeldene
- Kinglake
- Marysville
- Kinglake West and Pheasant Creek
- Toolangi and Castella
- Eildon / Taylor Bay

The above list of CIGs was accurate at the time of printing, however new CIGs may have been produced since that time and the most up to date list of CIGs can be found at the CFA website at:

- http://www.cfa.vic.gov.au/plan-prepare/community-information-guides/

APPENDIX 6: NEIGHBOURHOOD SAFER PLACE-PLACES OF LAST RESORT

Neighbourhood Safer Places are a place of last resort and do not guarantee safety. They should only be used if a resident's Bushfire Survival Plan (see link below for more information) fails and residents have no other place for shelter. Welfare facilities will not be made available and the place may not provide shelter from smoke and embers

For more information on Bushfire Survival Plans go to the CFA Website:

- http://www.cfa.vic.gov.au/plan-prepare/

 NSPs have been declared at the following areas in Murrindindi Shire

Township	Location	Address
Alexandra	Leckie Park Cricket Oval	Station Street (opposite Lamont Street) Alexandra 3714.
Eildon	Eildon Basketball Courts Open space	Corner Centre Avenue and Main Street Eildon 3713.
Flowerdale	Flowerdale Hall	Whittlesea-Yea Road opposite Broadford-Flowerdale Road Flowerdale 3717.
Kinglake West	Kinglake West Recreation Reserve	Corner of Whittlesea-Kinglake Road and Recreation Road Kinglake West 3757. Entry off Recreation Road
Marysville	Marysville Community Centre Located in Gallipoli Park	Falls Road Marysville 3779.
Thornton	Thornton Recreation Reserve Oval	Taggerty-Thornton Road (near corner Goulburn Valley Highway) Thornton 3712.
Yarck	Yarck Recreation Reserve	Corner Yarck Road and Goodear Lane Yarck 3719. Entry off Goodear Lane
Yea	Yea Skate Park	Station Street (Melba Highway) opposite Mary Street Yea 3717.

The above list of NSPs was correct at the time of printing. However, new NSPs may have been declared since that time. The most up to date list of NSPs can be found on the Murrindindi Shire Website (with maps):

- www.murrindindi.vic.gov.au/Your_Council/Emergency_Management/Neighbourhood_Safer_Places_-_a_place_of_last_resort

Or the CFA Website

- http://www.saferplaces.cfa.vic.gov.au/cfa/search/default.htm

DELETED – PUBLIC VERSION

APPENDIX 8A: GENERAL

Any roadside works including the removal of native and non-native vegetation or slashing on council managed roadsides may require a permit from Council. If anyone wishes to undertake any fire prevention activities on Council managed roadsides, they are to first contact the MFPO before undertaking any works. If necessary the MFPO will contact the Planning and Environment Department within Council to ascertain if any planned works require a permit.

If works are proposed on road sides managed by another agencies (e.g. DELWP or Vic Roads), applicants must contact the relevant agencies before conducting any works.

Fire Brigades are encouraged to submit annually to the Council for consideration by the MFMPC, prior to the Fire Season, details of proposed and ongoing Fuel Reduction Works proposed to be undertaken on roads and/or reserves.

All work on roadsides are to be undertaken in accordance with the details following.

APPENDIX 8B: FUEL REDUCED CORRIDORS

Fuel Reduced Corridors must be sufficiently fuel-reduced, in accordance with appropriate native vegetation management requirements, to provide a safe corridor for the travelling public, provide a means of establishing a control line, reduce the time of travel to low-risk areas and to slow the spread of fire on the road reserve.

Fuel Reduced Corridors should, where applicable, have the fine fuel reduced for a distance of 3 m behind the guideposts (see diagram in Appendix 8E below) on either side of the road where practical. All overhanging obstructions less than 5 m above the road pavement must be removed, to allow the safe passage of fire fighting appliances. They must be inspected annually by the controlling road authority and maintained prior to the fire danger period.

One or all of the following methods can be used to meet the requirements:

- Mowing or slashing a strip at least 3 metres wide on one or both sides of the road reserve, either adjacent to the shoulders of the pavement (including drains and batters), or next to or inside the adjoining property, at the appropriate time to prevent regrowth and accumulation of dry slashed material.
- Fuel reduction low-intensity burning by fire brigades on a coordinated basis. Fuel reduction burning shall only be required when the fuel load exceeds 4 tonne per hectare or when determined by the MFPO. Fuel loadings on the roadsides identified for burning are to be reviewed annually by the MFPO in the spring of each year.
- The CFA's current policies in relation to brigades conducting burn-offs is to be adhered to by local brigades.
- The spraying of herbicide where other treatments are not practical or cost effective, to create a strip a minimum of 3m wide with little or no vegetation present on both sides of the road reserve adjacent to the shoulders of the pavement. Burning may then follow as required.

Spraying of native grasses and other native species should be avoided. As with slashing, all proposed herbicide application needs to be checked by the MFPO

- Thinning out of approved vegetation within the reserve or easement, and removing potentially dangerous trees. If vegetation thinning is required by planned works it must be approved by the MFPO

Appendix 8E contains a diagram for typical works on Fuel Reduced Corridors. Map 5 in Appendix 3 shows the current fire prevention program on Fuel Reduced Corridors by Murrindindi Shire Council.

Fuel Reduced Corridors are to be identified in Brigade Fire Prevention Plans if available.

The following Fuel Reduced Corridors have been identified:

Fuel Reduced Corridors, Murrindindi Shire	
Back Road Eildon.	Molesworth-Dropmore Road. (Bottom Section)
Break O'Day Road	Murrindindi Road
Cathedral Lane*	O'Grady's Road*
Connelly's Creek Road	Rubicon Road
Dairy Creek Road	Sierra Hills Drive*
Extons Road*	Snobs Creek Road
Glenburn-Kinglake Road*	Spring Creek Road
Ghin Ghin Road	Tait's Road
Gobur Road.	UT Creek Road
Highlands Road Top section up to the school.	Watson's Road
Lang's Road.	West bridge Road (until Captains Creek Road)
Limestone Road.	Whanregarwen Road
King Parrot Creek Road	Yarck-Gobur Road*
Maintongoon Road.	

* new additions in 2015 review

APPENDIX 8C: PRIORITY ACCESS ROADS

Priority Access Roads must be sufficiently fuel-reduced to provide a safe corridor, and minimise travel time for the travelling public and emergency service vehicles. Priority Access Roads are managed by Vic Roads and are the major roads within the shire.

Priority Access Roads must be cleared of all low overhanging obstructions less than 5 m above the road pavement and dangerous trees/limbs need to be removed. A 3.0 m minimum width fine-fuel reduced area on both sides of the road must abut a clear travelled path that has a 6.0 m minimum width.

Vic Roads has undertaken a Roadside Bushfire Risk Assessment and has proposed treatment options which ensure all identified Priority Access Roads are inspected and that a systematic program is undertaken to improve road safety to meet its obligations to prevent fires on roadsides and contain roadside fires as required by the CFA Act 1958 (Section 43).

An annual works program, including any additional priority works due to weather conditions or other factors, is prepared and reviewed annually in consultation with the MFMPC and Council.

The following Priority Access Roads have been identified:

Priority Access Roads, Murrindindi Shire		
Goulburn Valley Highway	Taggerty-Thornton Road	Broadford-Flowerdale Road
Maroondah Highway	Buxton-Marysville Road	Whittlesea-Kinglake Road
Maroondah Highway Link	Marysville-Narbethong Road	Healesville-Kinglake Road
Melba Highway	Whittlesea-Yea Road	Heidelberg-Kinglake Road

It is recognised that all the roads listed above are under the direct control of Vic Roads and the works that are carried out on these roads are "as required" and are undertaken by Vic Roads or its approved contractors.

APPENDIX 8D: FIRE ACCESS ROADS

Fire Access Roads are required to provide summer access for fire fighting vehicles and will be maintained by the Council or other appropriate authority accordingly, prior to the summer period if required. General works on these roads do not generally include spraying, slashing and vegetation removal. Instead these roads may require grading, surface preparation and maintenance and general maintenance when necessary (e.g. culverts etc). Much of the work carried out on these roads forms part of the Municipality's general requirement for road maintenance. The roads that are the most important for fire access and egress require maintenance specifically for fire access purposes. They are identified in the table below with an asterisk (*).

The following Fire Access Roads have been identified:

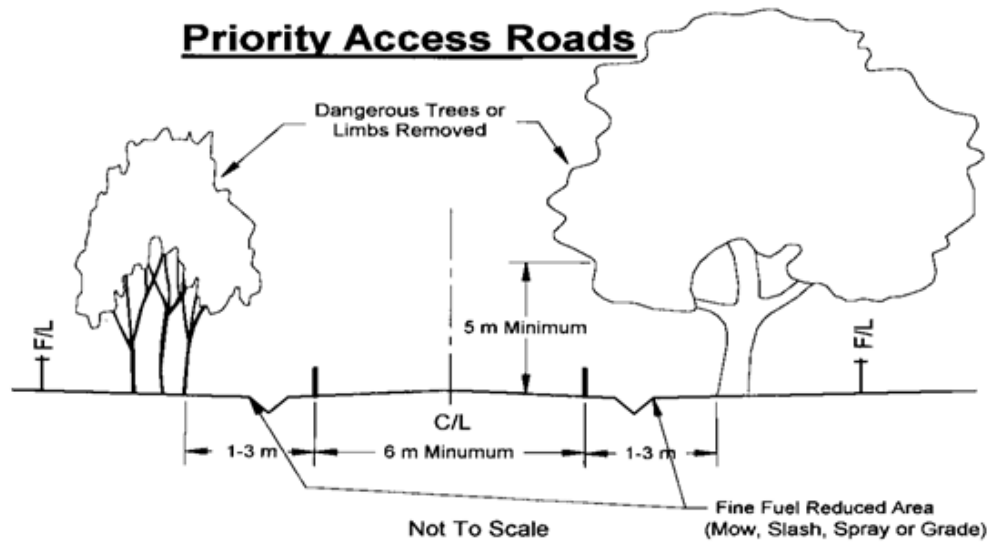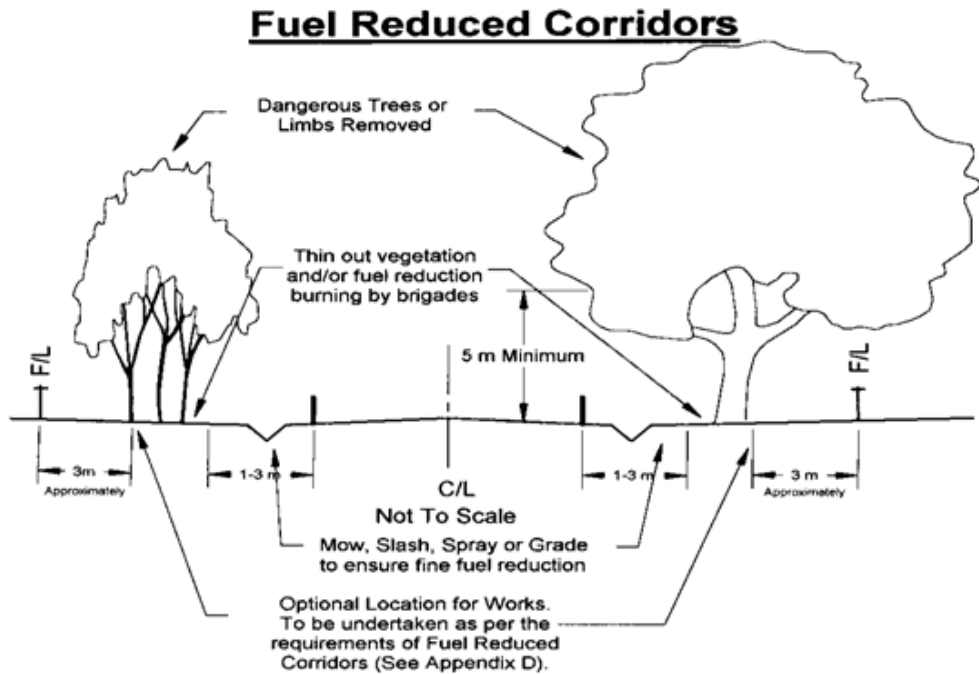| Fire Brigade District	Roads
Acheron	Yellow Box Ridge Road
	Connelly's Creek Road (Jackels Driveway to Glendale Lane)
Alexandra	*UT Creek crossing near Briggs Oval
Buxton	South Cathedral Lane (to Mt Margaret Rd)
	Williams Lane
	Gypsy Lane
	Passing Lane
	Dyes Lane
Eildon	*Karralika Heights track to Taylor Bay
	Taylor Bay Roads - left & right arms
	Darlingford Harbour to Jerusalem Creek Road
	Tea Tree Drive
	* Eildon Fire Track

Fire Brigade District	Roads
Granton	Granton Fire Break
Koriella	Parsons Lane
	Hodsons Lane
	*McGuigans Road
	*Taits Lane
	Stoney Creek Road
	Old Fawcett Road
	Minterns Lane
	Durhan Lane
Marysville	Marysville Township Firebreak
Taggerty	Cathedral Lane
	Connellys Creek Road
	Swamp Creek Road
Thornton	Bulls Lane
	Thoms Lane
Whanregarwen	*Grannies Lane
Yarck	*Continuation of Wrights Road to Taits Lane
	Hodsons Lane
	Parsons Road
Highlands- Caveat	*Extension of Chisholms Rd & Spaniaks Road
	Old Ghin Ghin Road
Homewood	Guymers Road
	*Several fire access tracks along the Boundary Range - marked on map as the Yea Spur Track (Map 403 B Region 12)
Kinglake	Captains Creek Road
Kinglake West	Burtons Road
Molesworth	*Abes Lane
	*Whites Lane
	*Native Dog Track
Strath Creek	*Tehans Track
	Callandoon Track
Toolangi	Old Toolangi Road
	Spraggs Road
	Dixons Creek Road
Yea	Hill Street
	Rifle Range
	*Whites Lane
	*Abes Lane
	*White's Lane
	*Native Dog to Tunnel Road

APPENDIX 8E: TOWNSHIP MAINTENANCE

Council staff and contractors of Murrindindi Shire Council undertake mowing around the perimeter of a number of the townships within the Municipality. Whilst it is acknowledged that this work is undertaken primarily for aesthetic reasons, it is also recognised that this work reduces fuel loading in these locations and hence has a fire prevention component. The MFPO may request areas within and adjoining townships to be specifically included in these works.

Diagrams of Typical Works on Roads

NOTE: The following diagrams show the optimum desirable situation. It must be noted that this may not be achievable or practical in all situations. Council general slashed roads are maintained in the same manner as Fuel Reduced Corridors.

Fuel Reduced Corridors

Dangerous Trees or Limbs Removed

Thin out vegetation and/or fuel reduction burning by brigades

5 m Minimum

F/L

3m Approximately

1-3 m

C/L
Not To Scale

1-3 m

3 m Approximately

F/L

Mow, Slash, Spray or Grade to ensure fine fuel reduction

Optional Location for Works. To be undertaken as per the requirements of Fuel Reduced Corridors (See Appendix D).

Priority Access Roads

Dangerous Trees or Limbs Removed

5 m Minimum

F/L

1-3 m

6 m Minumum

C/L

1-3 m

F/L

Not To Scale

Fine Fuel Reduced Area (Mow, Slash, Spray or Grade)

On-going liaison shall be maintained between the MFPO and the local Fire Brigades to ensure that fire hazards are minimised throughout the year. Council Officers are requested to note any occurrence of roadside vegetation that may constitute a fire hazard during their normal inspections. When such a hazard is identified the MFPO will investigate and coordinate the removal of any identified hazard where appropriate.

Fire hazards and risks associated with commercial and industrial properties are controlled by legislation, such as the Building Code of Australia and the *Planning and Environment Act 1987*. Where hazards are identified at these locations the advice of specialists such as Council's building surveyor should be sought.

The property owners or occupiers shall complete fire hazard removal, reduction and isolation, including the clearing of blocks pursuant to Section 41 of the *CFA Act 1958*, prior to the introduction of the declared Fire Danger Period. This must include blocks that have been cleared and have regrown.

A Public notice shall be placed in the Council Noticeboard, advising the public as to their responsibilities for the removal of Fire Hazards from private land and the consequences of noncompliance. Appropriate notices shall be inserted in all local newspapers early to mid-November annually, reminding residents to remove fire hazards and construct fire breaks within the next four weeks. An advisory letter also may be sent to owners / occupiers of land that may be a fire hazard.

Priority will be given to urbanised areas and adjoining land however action may be taken on any fire hazard within the Municipality.

Following the public notice, and depending on seasonal variability, it is expected that the MFPO will commence formal property inspections during spring, generally in early November. This must be completed in adequate time to ensure that all areas of the Municipality can be inspected some three weeks prior to the expected date of the fire danger period. Where the MFPO forms an opinion that a fire hazard exists, a Fire Prevention Notice will be served on the property owner or manager in accordance with the *CFA Act 1958* and Regulations. Owners who have not undertaken the works will then be issued with a Fire Prevention Notice.

Brigades are requested to alert the MFPO of potential fire hazards prior to the fire danger period.

Following the expiration of the allowed time for required works (generally 14 days), the MFPO will undertake a further inspection of the property. Property owners who have failed to have the work completed by the allotted deadline will have the work undertaken by Council or contractors where appropriate at the owners expense and may also have infringement notices issued to them.

APPENDIX 8G: ALLOTMENTS AND RESTRICTIONS ON AREA TYPE

URBAN RESIDENTIAL ALLOTMENTS

It is recommended that Urban Residential Allotments should have all the grass, weeds and undergrowth cut to a height of less than 75 mm including all grass up to and against fences, buildings and trees. It is recognised that special circumstances may require a variance to this

standard in some cases. Vegetation may be required to be removed, together with any dead wood or other flammable refuse from the allotments and the adjacent half width of the street.

LARGER ALLOTMENTS EXCEEDING I HA AND UP TO 20 HA

Larger allotments, exceeding 1 hectare and less than 25 hectares, should have the fuel reduced by slashing, mowing or intensive grazing for a distance of 20 m around dwellings and other assets. An adequate strip must be maintained around the boundary or as deemed suitable by the MFPO. Spraying, if undertaken at the appropriate time, can be used to make these breaks. Removal of vegetation on larger allotments may require a permit. If in doubt about whether a permit is needed, please contact the MFPO.

LARGER ALLOTMENTS LARGER THAN 20 HA

Where larger allotments adjoin townships the boundary zone adjoining the township shall be maintained in a fuel-reduced condition as deemed suitable by MFPO. Adequate fire-breaks may be required to be implemented around external fence-lines of properties. Vegetation removal on larger allotments may also require a permit and contact should be made with the MFPO before removal.

FOREST AREAS

In forest areas it is recommended that:

- All flammable vegetation and undergrowth be removed for a safe distance around buildings and other assets.
- Trees should be thinned, and cut trees and limbs removed.
- Clumps of dense vegetation should be isolated.
- A 6m minimum width firebreak should be constructed around the perimeter of the property by ploughing or spraying, where practical.

The above may be varied as deemed necessary by the MFPO and Council Planning Provisions must be observed when removing vegetation.

GRASSLAND

In grassland areas fuel reduction should be undertaken by cutting, grazing or ploughing for a distance of 20 m around buildings and assets and other installations requiring protection. A 3m to 6m minimum width break around the perimeter of the property should also be undertaken where practical. If necessary the MFPO may issue further directions.

UNDEVELOPED MUNICIPAL RESERVES AND MUNICIPAL PUBLIC LAND

Undeveloped Municipal Reserves and Municipal Public Land should have a fire break or fuel reduction strip 3m to 6m wide, as deemed suitable by MFPO, constructed around the perimeter of the Reserve where practical. This may be varied as deemed necessary by the MFPO. Access for fire fighting vehicles should be provided.

RURAL DWELLINGS

Rural dwellings should be located and constructed in accordance with the '*Design and Siting Guidelines-Bushfire Protection for Rural Houses.*

APPENDIX 8H: MURRINDINDI SHIRE COUNCIL COMMUNITY LOCAL LAW 2012 (EXTRACT)

Open Air Burning on Rural Land

26. *Burning of Vegetation (windrow or stump)*

No person may in the period between October 15th or earlier as defined by the Municipal Fire Management Planning Committee and the introduction of the Fire Danger Period (C.F.A.)/Prohibited Period (Department of Sustainability and Environment) in any year light or allow to remain alight any windrow or stump.

Penalty: 20 Penalty units

27. *Council Fire Restriction Period*

(1) No person may in the period between October 15th or earlier as defined by the Municipal Fire Management Planning Committee and the introduction of the Fire Danger Period (C.F.A.)/Prohibited Period (Department of Sustainability and Environment) light or allow to be lit any tree, stump, log, any vegetation in excess of 75mm (3 inches) in diameter or discharge any firework without first obtaining a permit.

Penalty: 20 Penalty units

(2) No application is required for a permit for burning of stubble grass, bracken or any vegetation under 75mm (3 inches) in diameter, in the period between October 15th or earlier as defined by the Municipal Fire Management Planning Committee and the introduction of the Fire Danger Period (C.F.A.) / Prohibited Period (Department of Sustainability and Environment) provided:

(a) Such fires are lit between the hours of 3.00pm and 11.00pm on any day until the commencement of the C.F.A. fire restrictions/prohibited period. All fires must be extinguished by 11.00pm of the same day the fire is lit.

(b) Adequate means are at all times available for preventing the escape of fire and for extinguishing the fire.

(c) An adult person must remain with the fire at all times whilst it is alight.

(d) Prior to the fire being lit, the applicant must notify Vic Fire of the pending burn-off.

(e) The person who lights a fire, or allows a fire to remain alight, must extinguish the fire upon being directed to do so by an authorised officer or a member of the Police Force, or authorised Forest Officers of Department of Sustainability and Environment.

Penalty: 20 Penalty units

(3) A person who is the owner or occupier of land must not allow fireworks to be lit or pyrotechnics to be conducted, without a permit.

Penalty: 20 Penalty units

(3a) For the purposes of clause (3), 'firework' is described as a device in which combustible materials are ignited and produce coloured flames, sparks, noise and smoke. 'Pyrotechnics' are described as a firework display.

(4) In deciding whether to grant a permit under clause (3) of this provision, the Council must take into consideration:

    (a) The zoning of the land; and

    (b) The proximity to adjoining properties; and

    (c) The likely effects on adjoining owners and their animals; and

    (d) Whether the issuing of the permit will comply with both the Murrindindi Shire Council's and the Country Fire Authority's fire restriction periods, for open air burning.

(5) During the Country Fire Authority's 'declared fire danger period', a person must obtain a written permit from the Country Fire Authority, to light a firework or allow pyrotechnics to be conducted within the municipality.

Open Air Burning on Residential Land

28. Open Air Burning and Incinerators

(1) A person who is the owner or occupier of residential land is guilty of an offence if that person allows:

    (a) A person without a permit to use an incinerator on that land; or

    (b) A person without a permit to light a fire in the open air on that land; or

    (c) A person without a permit to construct or install an incinerator on that land.

Penalty: 20 Penalty units

(2) A person who directs another person to light a fire on residential land is guilty of an offence.

Penalty: 20 Penalty units

(3) For the purposes of this clause (1) and (2), a fire is in the open air if it is in any place other than within a permanent structure.

Penalty: 20 Penalty units

29. Exemptions

Clause 27 and 28 does not apply to:

(a)   A fire lit in the course of duty by an officer or member of the Country Fire Authority or the Department Sustainability and Environment, or other authorised person/s; or

(b)   A barbecue that is being used for cooking purposes.

Note: *The use of a barbeque during the Declared Fire Danger Period is regulated by the Country Fire Authority. Guidelines are available from the Country Fire Authority for the use of barbeques on days of Total Fire Ban.*

30.   Nuisance

(1)   A person must not light a fire on land so as to cause a nuisance to any other person.

Penalty: 20 Penalty units

(2)   A person must not light a fire on land so as to burn or cause or allow to be burnt any noxious or toxic substance.

Penalty: 20 Penalty units

(3)   A person who directs another person to light a fire in contravention of clause (1) and (2) is guilty of an offence.

Penalty: 20 Penalty units

31.   Burning of offensive materials

(1)   A person must not, without a permit, burn or cause to burn any offensive materials in any part of the municipal district.

(2)   For the purpose of clause (1) materials containing the following substances are offensive:

(a)   Any manufactured chemical;

(b)   Any rubber or plastic;

(c)   Any petroleum or oil;

(d)   Any paint or receptacle which contains or which contained paint;

(e)   Food waste, deceased animals or other offensive or noxious matter; and

(f)   Any other material as determined by the Council from time to time.

Penalty: 5 Penalty units

Term	Description
ABS	Australian Bureau of Statistics
AFAC	Australian Fire and Emergency Services Authorities Council
Acceptable Risk	The level of potential losses that a society or community considers acceptable, given existing social, economic, political, cultural, technical and environmental conditions.
APT	Australian Pipeline Trust
ARMB	Alpine Resort Management Board
AIIMS	Australasian Inter-service Incident Management System A nationally adopted structure to formalise a coordinated approach to emergency incident management.
Assets and Values	Recognised features of the built, natural and cultural environments. Built assets may include buildings, roads and bridges; Structures managed by utility and service providers; or recognised features of private land, such as houses, property, stock and crops plus associated equipment. Natural assets may include forest produce, forest regeneration, conservation values including vegetation types, fauna, air and water catchments. Cultural values may include recreational, indigenous, historical, and archaeological and landscape values. (Code of Practice for Emergency Management on Public Land)
AWS	Automatic Weather Station The Bureau's standard AWSs use sensors to monitor temperature, humidity, wind speed and direction, pressure and rainfall. Various advanced sensors are available for specialised applications. These sensors can monitor cloud height (ceilometer), visibility, present weather, thunderstorms, soil temperature (at a range of depths) and terrestrial temperature. (Developed from the BOM).
BASO	Brigade Administration Support Officer
BMO	Bushfire Management Overlay. The BMO has been introduced to replace the Wildfire Management Overlay by the Department of Planning and Community Development. The provisions of the BMO ensure that development in areas that may be affected by bushfire can only take place after bushfire issues have been considered. This includes the location of a building on the site, emergency access and fire-fighting water supply. The BMO requires that new development implements appropriate bushfire protection measures. If risk to life and property from bushfire cannot be reduced to an acceptable level the development cannot proceed. The BMO includes a statutory provision in planning schemes and a map showing where the provisions apply. The requirements for development in a BMO are specified in planning schemes. A planning permit issued under the BMO must include a condition that requires the landowner to maintain bushfire protection measures in perpetuity
BOM	Bureau of Meteorology
Burning Program	A program of prescribed burns scheduled these for a designated area over a nominated time, normally looking ahead over one fire season (for the coming spring to the following autumn), but can also look ahead five years or more.
Burn Plan	The plan which is approved for the conduct of prescribed burning. It contains a map identifying the area to be burnt and incorporates the specifications and conditions under which the operation is to be conducted.
Bushfire	Unplanned vegetation fire. A generic term which includes grass fires,

Term	Description
	forest fires and scrub fires both with and without a suppression objective.
Bushfire Danger Period	A period of the year either established by legislation or declared by the relevant agency, when restrictions are placed on the use of fire due to dry vegetation and the existence of conditions conducive to the spread of fire.
Bushfire Management	All those activities directed to prevention, detection, damage mitigation, and suppression of bushfires. Includes bushfire legislation, policy, administration, law enforcement, community education, training of fire fighters, planning, communications systems, equipment, research, and the multitude of field operations undertaken by land managers and emergency services personnel relating to bushfire control.
Campaign Fire	A fire normally of a size and/or complexity that requires substantial fire fighting resources, and possibly several days or weeks to suppress.
CERM	Community Emergency Risk Management
CFA	Country Fire Authority
COL	Consequence of Loss - OESC A dataset is owned and maintained by the OESC. The dataset contains records of infrastructure and assets under the categories: Economic Infrastructure, Economic Production, Environmental Biodiversity, Social Cultural, Social Human Life and Social Infrastructure. The dataset contains detailed attributes about the assets type, value and location.
CIG	Community Information Guide (formerly Township Protection Plan)
Consequence	Outcome or impact of an event
Control Authority	The agency, service, organisation or authority with legislative responsibility for control of the incident. (Also referred to as the responsible authority or agency.)
Coordination	The bringing together of agencies and elements to ensure effective response to an incident or emergency. It is primarily concerned with the systematic acquisition and application of resources in accordance with the requirements imposed by the emergency or emergencies. Coordination relates primarily to resources and operates: • vertically, within an agency, as a function of the authority to command; • horizontally, across agencies, as a function of the authority to control.
Essential Infrastructure	Those services, physical facilities, supply chains, information technologies and communication networks that, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact on the social or economic wellbeing of the community E.g. Water supply facilities.
Curing	Drying and browning of herbaceous vegetation due to mortality or senescence.
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DELWP	Department of Environment, Land, Water and Planning
DET	Department of Education and Training
DHHS	Department of Health and Human Services
DOT	Department of Transport
DPCD	Department of Planning and Community Development
EHO	Environmental Health Officer – Council
Elements at Risk	The population, buildings and civil engineering works, economic activities, public services and infrastructure etc., exposed to sources of risk.
EMA	Emergency Management Act
EMMV	Emergency Management Manual Victoria
EPBC	Environmental Protection Biodiversity Conservation

Term	Description
Essential Service	A service (including the supply of goods) that if rendered unavailable for an extended period would significantly impact on the social or economic wellbeing of the community E.g. Electricity supply. (Adapted from Essential Services Commission Act 2001)
FDI	Fire Danger Index A relative number denoting the potential rates of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed.
FDR	Fire Danger Rating A relative class denoting the potential rates of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed, indicating the relative evaluation of fire danger.
FFG Act 1988	Flora and Fauna Guarantee Act 1988 – Victorian State Legislation
Fire Management	All activities associated with the management of fire prone land, including the use of fire to meet land management goals and objectives.
FOI	Freedom of Information
Fuel Break System	A series of modified strips or blocks tied together to form continuous strategically located fuel breaks around land units.
Fuel Management	Modification of fuels by prescribed burning, or other means.
Fuel Modification	Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling and burning).
Fire Season	The period during which bushfires are likely to occur, spread and do sufficient damage to warrant organised fire control.
FRB	Fuel Reduction Burn
Fuel	Any material such as grass, leaf litter and live vegetation which can be ignited and sustains a fire. Fuel is usually measured in tonnes per hectare. Related Terms: Available fuel, Coarse fuel, Dead fuel, Elevated dead fuel, Fine fuel Ladder fuels, Surface fuels, and Total fine fuel.
Fuel Hazard	A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.
Fuel Management	Modification of fuels by prescribed burning or other means. (AFAC)
GBCMA	Goulburn Broken Catchment Management Authority
G-MW	Goulburn-Murray Water
GVW	Goulburn Valley Water
Hazard	A source of potential harm or situation with a potential to cause loss. A potentially damaging physical event that may cause loss of life or injury, property damage, social and economic disruption or environmental degradation.
Hazard Layer – DELWP	Hazard layer developed and maintained by DELWP, Office of Land and Fire. It is a state-wide coverage of <30 m^2> cell resolution with approx 27 attributes detailing surface and elevated fuel loads, hazard ratings and vegetation descriptions.
HRSFMPC	Hume Region Strategic Fire Management Planning Committee
HRSFMP	Hume Region Strategic Fire Management Plan
IAP	Incident Action Plan
IFMP	Integrated Fire Management Planning
IRSED	Index of Relative Social & Economic Disadvantage ABS scoring method for determining and comparing levels of social and economic disadvantage in given areas at a given point in time, with

Term	Description
	information displayed according to IRSED values from lowest (most disadvantaged) to highest (least disadvantaged).
ISO	International Standards Organisation
ISO 31000:2009	An international risk management standard that provides principles and general guidelines on how to manage risk
ICC	Incident Control Centre The location where the Incident Controller and various members of the Incident Management Team provide overall direction of response activities.
LGA	Local Government Authority Represents relevant Municipal Council (or ARMB) for area of concern.
Likelihood	Probability or frequency of an event can be either qualitative or quantitative.
Loss	Any negative consequence or adverse effect, financial or otherwise.
MBS	Municipal Building Surveyor - Council
MDA	Map Display Area
MEMP	Municipal Emergency Management Planning
MEMPC	Municipal Emergency Management Planning Committee
MERC	Municipal Emergency Response Coordinator – Victoria Police
MERO	Municipal Emergency Resource Officer – Council
MFB	Metropolitan Fire Brigade
MFMP	Municipal Fire Management Plan
MFMPC	Municipal Fire Management Planning Committee
MFPC	Municipal Fire Prevention Committee *(superseded by MFMPC)*
MFPP	Municipal Fire Prevention Plan *(superseded by MFMP)*
MFPO	Municipal Fire Prevention Officer
Mitigation	Measures taken in advance of a disaster, aimed at decreasing or eliminating its impact on society and environment.
Municipal Area	The geographic footprint of the relevant LGA/ARMB
NSP	Neighbourhood Safer Place – Place of Last Resort
NTC	National Transport Commission
OESC	Office of Emergency Service Commission
PPRR	Prevention, Preparedness, Response, Recovery
Practicable	What is realistic to achieve in the context of: • The severity of the hazard. • The state of knowledge about the hazard or risk and any ways of removing or mitigating it. • The availability and suitability of ways to remove or mitigate that hazard or risk. • The cost of removing or mitigating that hazard or risk. (Dangerous Goods (Storage and Handling) Regulations 2000)
Preparedness	Arrangements to ensure that in the event of an emergency occurring all those resources and services that area needed to cope with the effects can be efficiently mobilised and deployed.
Prescribed Burning	The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives.
Prevention	Regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated.
Probability	A measure of the chance of an event occurring, often expressed as a number.
Recovery	The coordinated process of supporting emergency affected communities

Term	Description
	in the reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical wellbeing.
Residual Risk	Risk remaining after implementation of a risk treatment.
Resilience	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures. (UN/ISDR, Geneva 2004)
Response	Actions taken in anticipation of, during and immediately after an emergency, to ensure its effects are minimised and that people affected are given immediate relief and support.
Risk	The exposure to the possibility of such things as economic or financial loss or gain, physical damage, injury or delay, as a consequence of pursuing a particular course of action. The concept of risk has two elements, i.e. the likelihood of something happening and the consequences if it happens.
Risk Analysis	A systematic use of available information to determine how often specific events may occur and the magnitude of their likely consequence.
Risk Assessment	The overall process of risk identification, analysis and evaluation.
Risk Criteria	Terms of reference by which the significance of risk is assessed.
Risk Evaluation	Process of comparing the level of risk against criteria.
Risk Identification	The process of determining what, where, when, why and how something could happen.
Risk Management	The culture, process and structure that are directed towards potential opportunities whilst managing adverse effects.
Risk Management Process	The systematic application of management of policies, procedures and practices to the tasks of communicating, establishing the context, identifying, analysing, evaluating, treating, monitoring and reviewing risk.
Risk Reduction	Actions taken to lessen the likelihood, negative consequences, or both, associated with a risk.
Risk Register	A listing of risk statements describing sources of risk and elements at risk, with assigned consequences, likelihoods and levels of risk.
Risk Treatment	Process of selection and implementation of measures to modify risk.
RSFMPC	Regional Strategic Fire Management Planning Committee
SES	State Emergency Services
SFMPC	State Fire Management Planning Committee
SMR	StateNet Mobile Radio
SOP	Standard Operating Procedures
Source of Risk	Source of potential harm
Stakeholders	Those people and organisations who may affect, be affected by or perceive themselves to be affected by a decision, activity or risk.
Susceptibility	The potential to be affected by loss
TAPO	Technical Administrative Project Officer
TFB	Total Fire Ban (A day of Total Fire Ban)
Tolerable Risk	A risk within a range that society can live with so as to secure certain net benefits. It is the range of risk regarded as non-negligible and needing to be kept under review and reduced further if possible.
TOR	Terms of Reference
Treatment	An existing process, policy, device, practice or other action that acts to minimise negative risk or enhance positive opportunities. The word control may also be applied to a process designed to provide reasonable

Term	Description
	assurance regarding the achievement of objectives.
Treatment Assessment	Systematic review of processes to ensure that controls are still effective and appropriate.
TSV	Transport Safety Victoria
Urban Rural Interface	The line, area, or zone where structures and other human development adjoin or overlap with undeveloped bushland.
VBA	Victorian Building Authority
VFRR	Victoria Fire Risk Register CFA process that identifies assets at risk from bushfire, assesses the level of risk and highlights the risk mitigation treatments currently in place along with the responsible agencies for implementing these treatments. The output is a geographic layer and associated attributes that identifies the asset type; name; location and risk factors and priorities of these assets based on a wildfire occurring in its vicinity on a day of 100 FDI.
VICPOL	Victoria Police
Vulnerability	The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. (UN/ISDR, Geneva 2004)
Vulnerable People	Those living in high bushfire risk areas and who are unable to make an independent decision, including due to cognitive impairment; physically dependant and totally reliant on in home personal care and support; and people who live alone and are geographically isolated with no co-resident carer or family. (DHHS)
VWA	Victorian WorkCover Authority
WMO	Wildfire Management Overlay. Replaced by the Bushfire Management Overlay (see BMO above for more details)
WTP	Water Treatment Plant

WEBSITES

Australian Bureau of Statistic, 2015, Murrindindi Shire Statistics
http://statistics.murrindindi.vic.gov.au/

ABC website, April 1 2015, *Children Injured in Houseboat Fire on Lake Eildon in Victoria's North East*, http://www.abc.net.au/news/2015-03-31/children-injured-in-boat-fire-on-lake-eildon-in-victoria27s-no/6361706

Friends of the Leadbeater's Possum website, 2015, *Lake Mountain Recovery*
http://leadbeaters.org.au/projects/lake-mountain-recovery/

Rice, P. 2005, *Alexandra District Fire Brigades Group history* page,
http://www.virtual.net.au/~alexgroup/History.htm

Transport Safety Victoria website, 2015, *Incident sparks boat fire message from safety regulator,*
http://www.transportsafety.vic.gov.au/maritime-safety/newsroom/news/news-articles/incident-sparks-boat-fire-message-from-safety-regulator

Victorian Building Authority Website, 2015, *Smoke Alarms,* http://www.vba.vic.gov.au/consumer-resources/building/pages/smoke-alarms

GENERAL REFERENCES

Australian Bureau of Meteorology, 2014, *Special Climate Statement 50 – Australia's Warmest Spring on Record*, 2 December 2014

Burns EL, Lindenmayer DB, Stein J, Blandchard W, McBurney L, Blair D and Banks SC ,2014, *Ecosystem assessment of mountain ask forest in the Central Highlands of Victoria, south-eastern Australia.* Austral Ecology.

Barwick, D. 1984, 'Mapping the Past: An Atlas of Victorian Clans 1835-1904', Part 1, *Aboriginal History* 1984, 8(2):100-31

Clark, I. 1990. *Aboriginal Languages and Clans: An Historical Atlas of Western and Central Victoria*, Monash Publications in Geography No. 7.

CSIRO and BOM 2012. *State of the Climate 2012*, Commonwealth Scientific and Industrial Research Organisation, Bureau of Meteorology.

DEPI Leadbeater Possum Action Statement, 2014 http://www.depi.vic.gov.au/environment-and-wildlife/wildlife/leadbeaters-possum

DSE, 2008. *Climate change in Goulburn Broken*, Department of Sustainability and Environment, Victoria, Melbourne

Essential Economics (for Mansfield Shire Council), 2006, 'Jamieson-Eildon Road Business Case', September 2006

Goulburn Valley River Tourism 2012, *Travel to Goulburn River Valley, year ended March 2012*, www.goulburnrivervalley.com.au/visitationstatistics

NSW Fire and Rescue, 2013, *Hazardous Material (Hazmat) definition* http://www.fire.nsw.gov.au/page.php?id=19

Sydney Morning Herald, 1872, *Destructive Fire at Alexandra, Victoria*, 14th November 1872

Threatened Species Scientific Committee, 2015, *Conservation Advice Gymnobelideus leadbeateri*, http://www.environment.gov.au/biodiversity/threatened/species/pubs/273-conservation-advice.pdf

KEY LEGISLATION, REGULATION AND POLICY

Acts important in the preparation of this plan include

- *Emergency Management Act 1986*
- *Emergency Management Act 2013*
- *Country Fire Authority Act 1958*
- *Forest Act 1958*
- *Forests (Fire Protection) Regulations* 2014
- *Safety on Public Land Act* 2004
- *National Parks Act* 1975
- *Local Government Act 1989*
- *Emergency Management Manual Victoria*
- *Crimes Act 1958*
- *Planning and Environment Act 1987*