BUSHFIRE FUEL MANAGEMENT GUIDE

For the protection of townships and settlements

WORKING IN CONJUNCTION WITH COMMUNITIES, GOVERNMENT, AGENCIES AND BUSINESS

Acknowledgements
This document has been developed by the Southern and Eastern Metropolitan Fuel Management Working Group, a working group under the Southern & Eastern Metropolitan Regional Strategic Fuel Management Sub Committees. It is based on the original work completed by the Dandenong Ranges Bushfire Risk Landscape Project Fuel Management Working Group and the valuable contribution of agency and community members involved, including:

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Feedback

Your feedback on the use of this Guide is welcome.
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Part 1: About This Guide

Purpose

Bushfire Fuel Management for the Protection of Townships and Settlements is a guide for communities and fire management practitioners who are seeking to protect their townships and settlements from the threat of bushfire.

It provides practical information and a methodology to plan the management of bushfire fuels on public and private land in and around towns and settlements. It also provides a decision-making framework for identifying different priority areas (such as Fuel Management Zones) for treatment and sets objectives and performance measures.

It is intended that by using this Guide, communities, in collaboration with fire and land management agencies and municipal councils, can plan fuel management actions to increase protection to their town.

Fuel management actions are one of a suite of tools available to communities to increase their protection and resilience from bushfires. Many communities will use this guide as part of a broader Community Based Bushfire or Emergency Management process, which may include other actions. For further resources about other actions that can be taken, please see the 'more information' section.

Using this Guide will also provide greater opportunities for collaboration and empower communities to participate in planning for their own safety.

Audience

This Practitioner Guide is for all those involved in managing the bushfire safety of local communities including:

- Community/Township Fire Planning Groups
- Municipal Fire Management Planning Committees
- Municipal Fire Prevention Officers
- CFA Vegetation Management Officers
- Natural environment planners
- Fire services
- Local governments
- Water authorities
- Public land managers.

Expected outcomes

Implementation of this Guide is intended to contribute to the following outcomes:

- The development or acknowledgement of 'safer centres' within towns or settlements where communities usually or traditionally gather.
- The protection of critical community assets including schools, shops, meeting places, and homes.
- Ensuring that critical community assets remain to support recovery after a fire.
- A demonstration and strengthening of shared responsibility.
- Landowners and land managers who:
  - ✓ are better informed and empowered to act
  - ✓ understand the role of fuel management in landscape scale risk mitigation and how it integrates with other risk treatments
- Effective implementation of strategic, integrated fuel management across the landscape.

What it does *not* do

The implementation of the Guide is voluntary.

Use of this guide does not negate the requirement for any person conducting fuel management to abide by existing land use planning or vegetation protection regulations, requirements and approvals.

Nor does it:

- Provide advice on how to manage bushfire fuel for protection of individual properties.
- Identify land parcels for treatment or prescribe treatments in any circumstance.
- Relieve individuals or organisations of their legislated and moral responsibility for bushfire fuel management.

More Information

For more information about native vegetation protection guidelines, contact the CFA or your local Council.

http://www.cfa.vic.gov.au/plan-prepare/clearing-trees-and-vegetation

For information on how to manage bushfire fuel or protect an individual property, refer to Landscaping for Bushfire: Garden Design and Plant Selection (CFA: 2011).

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

For information on fire safety on the farm refer to On the Land (CFA 2007) or go to http://www.cfa.vic.gov.au/plan-prepare/fire-safety-on-the-farm/

For information on management of bushfire risk in road reserves go to http://www.cfa.vic.gov.au/about/roadside-management/

Part 2: Bushfire Fuel Management

What is bushfire fuel?

Bushfire fuels are mostly made up of leaf litter, fallen bark, grasses, and shrubs. These fuels are typically less than 6mm wide. They dry out, heat up quickly as a fire approaches, and burn rapidly releasing large amounts of energy and contributing significantly to the intensity of bushfires.

The arrangement of bushfire fuels is also critical. The horizontal and vertical arrangement of fuel largely determines the rate of spread and intensity of bushfires.

For more information:

Overall Fuel Hazard Assessment Guide – 4th edition

https://www.ffm.vic.gov.au/research-and-publications/fire-research-and-adaptive-management-publications

Why is it important to manage bushfire fuels?

The safety of people living, visiting, and working in bushfire prone areas is the responsibility of government agencies, municipal councils, corporate land managers, and the people themselves.

The protection of settlements is critical to support the survival of people and their assets, and to protect key elements of community infrastructure (e.g. shops, schools, halls, community buildings, and communications).This is essential to community wellbeing and the recovery of communities following a bushfire event.

There are a range of activities that can be undertaken to achieve optimum levels of community safety. One of these is the **modification of bushfire fuels around settlements and across the landscape.**

Effective management of bushfire fuel can:

Reduce the likelihood of and limit the spread of ignitions.

Modify the flow of significant fires across the landscape.

Reduce fire intensity, flame impact and ember load on towns and settlements.

Reduce fire intensity around key community assets.

Support firefighting activities

Target areas likely to generate significant embers.

Fuel management must be planned and undertaken with due regard for the wellbeing and sustainability of communities and the protection and enhancement of the natural environment. In some situations, it may be necessary to compromise natural environment values to provide protection to settlements. In other places, the natural environment values will be of such high value that the safety of people and their property will require alternative solutions.

In all situations, a well informed and respectful discussion will assist the choice of action.

Limitations to fuel-based risk reduction

Fuel management can provide useful protection to settlements and assets in bushfires up to ***Severe*** conditions.

As the Fire Hazard Rating moves into ***Extreme*** and ***Code Red***, fuel management can still offer benefits, but will be less effective in the protection of life and assets. Loss of life and property is much more likely in ***Extreme*** and ***Code Red*** conditions and the safety of people will become increasingly dependent on community safety solutions such as warnings and information, relocation and sheltering.

Cross tenure fuel management planning

To be effective in managing the bushfire risk to communities, fuel management planning should be **applied consistently across all land**.

The processes and standards described in this Guide are based on the *Code of Practice for Bushfire Management on Public Land* (DSE 2012).

Using this Guide enables consistent fuel management planning across all land, both public and private.

Shared responsibility: *shared knowledge, shared resources, shared power*

Effective bushfire management requires input and cooperation from all levels and sectors of society. Likewise, roles and responsibilities must also be shared.

In the development of bushfire fuel management planning, this is how shared roles and responsibility might work at the different planning levels.

Community / Township/Settlement

- Collaborate with fire and land management agencies and local government.
- Provide local knowledge and resources.
- Provide connection and communication to the local community.
- Establish and maintain authority, ownership and control of the planning process.

Municipal Fire Management Planning Committees

- Identify high-risk towns and settlements.
- Resource and support local fuel management planning.
- Adopt township-based fuel management plans.
- Incorporate local fuel management plans into the Municipal Fire Management Plan.
- Coordinate planning activities across the municipality.
- Conduct an annual review of local fuel management plans.

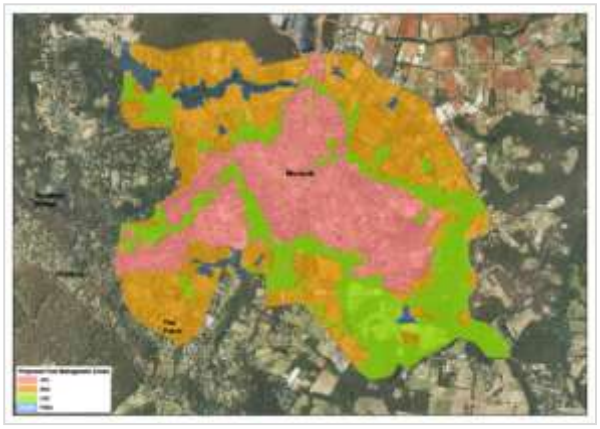
Regional Strategic Fire Management Planning Committees/Subcommittees

- Identify priority towns across the risk landscape.
- Encourage fire and land management agencies to participate in fuel management planning.
- Contribute technical expertise and resources.

  Monitor and review the implementation of fuel management planning and treatments within the region.

Fuel Management Zones

Fuel Management Zones are areas of land where fuel management activities are planned and implemented to modify fire behaviour, protect townships and achieve the bushfire safety outcomes described above.



Fuel Management Zones applied to Monbulk Township

Fuel Management Zones describe fuel treatment objectives, along with associated performance measures, for a defined area.

The four Fuel Management Zones are:

- Asset Protection Zone
- Bushfire Moderation Zone
- Landscape Management Zone
- Fuel Management Exclusion Zone*.

Fuel Management Zone placement is determined through strategic bushfire management planning at local and regional levels. Considerations include:

- credible bushfire behaviour and likely high risk scenarios
- risk to human life and property, community assets, and community sustainability
- overall fuel hazard ratings
- topography – slope and aspect
- climate – landscape/local/micro
- vegetation types
- potential impacts from fuel management on important values, such as ecological resilience and cultural heritage sites

Each Fuel Management Zone has different fuel treatment aims and associated performance measures.

Although the name of the zone indicates its primary purpose, multiple goals can be achieved when undertaking activities in any given zone.

For example, fuel management undertaken primarily for asset protection, may also have beneficial ecological outcomes. Likewise, ecological management activities undertaken in Fuel Management Exclusion Zones* (such as removal of woody weeds) may also have bushfire risk reduction and safety outcomes.

** The Code of Practice for Bushfire Management on Public Land defines this zone as Planned Burn Exclusion Zone, however it has been expanded to include all fuel management actions for the purposes of this guide.*

Multiple goals and outcomes

NOTE

While each of the zones is further explained in this section, *Appendix 1* describes the intent of the zones and provides indicative prescriptions and performance measures for each zone.

Asset Protection Zone (APZ)

Asset Protection Zones use intensive fuel treatment. They aim to:

- provide the highest level of localised protection to human life and property in close proximity to settlements and key community assets
- protect critical infrastructure, strategic control lines, and priority transport routes

An example of fuel management in an Asset Protection Zone

In this type of zone, the goal of fuel treatment is to reduce fire intensity, flame height, radiant heat, and ember attack on people and their assets in the event of a bushfire.

Fuel treatment is generally carried out through a combination of mechanical fuel modification (e.g. mowing, slashing, mulching, selective vegetation removal) and planned burning. Other options might include grazing, modification of vegetation protection controls, controlled revegetation, and utilising fuel reducing infrastructure (e.g. roads, recreation reserves and easements).

Achieving the objectives of an Asset Protection Zone may have a negative impact on natural environment values (e.g. ecosystems or aesthetics). Where this is likely, planners should seek to moderate the negative impact, as far as practicable, provided that this **does not compromise the safety objectives of this zone.**

Bushfire Moderation Zone (BMZ)

Bushfire Moderation Zones aim to:

- support Asset Protection Zones
- reduce fire spread from sources of ignition
- interrupt the flow of significant fires across the landscape
- support strategic control lines and access and egress routes

An example of fuel management in a Bushfire Moderation Zone

In this zone, the goal of fuel treatment is to reduce the intensity, rate of spread, and ember loads from significant bushfires.

Fuel treatment is generally carried out through a mix of planned burning and mechanical fuel modification. Other options might include grazing, horticulture, and other 'low fuel' land uses.

Bushfire safety and protection objectives are still prioritised. However, ecological outcomes can also be achieved by seeking to manage bushfire fuel for ecologically desirable outcomes where practicable.

Landscape Management Zone (LMZ)

Landscape Management Zones aim to:

- protect significant biodiversity assets within *Asset Protection Zones* and *Bushfire Moderation Zones* while still enabling fuel management activities
- provide bushfire protection outcomes by reducing the overall fuel hazard in the landscape
- modify rate of spread and intensity of bushfires at critical locations across the landscape
- improve ecological resilience through appropriate vegetation management regimes
- support management of the land for particular values, including forest regeneration and protection of water catchments.

Fuel treatment is generally carried out through a mix of planned burning and mechanical fuel modification. Ecological outcomes are prioritised. However, bushfire protection and safety outcomes are still achievable.

Most of the landscape is usually zoned as Landscape Management Zone.

An example of a Landscape Management Zone

Fuel Management Exclusion Zone (FMEZ)

Fuel Management Exclusion Zones aim to exclude fuel treatment from areas where:

- there is a high potential for ecological, cultural, or economic loss
- disturbance might exacerbate other risks such as erosion or landslip
- fuel management of any kind is impractical

An example of a Fuel Management Exclusion Zone

Selective vegetation management may still be undertaken for ecological outcomes (such as woody weed removal) and this might also have fuel reduction outcomes, however this is not the goal of these actions.

Where these areas coincide with settlements and assets, safety and protection measures **other than fuel modification** should be considered (e.g. evacuation strategies and shelter options).

Implementing Fuel Management

Implementing township or settlement-level fuel management can be achieved in several ways: through legislation and regulation, voluntarily, or through incentive and support programs.

Legislation and regulation

Legislation about the management of bushfire fuel within our communities includes the following for public and private land:

> In the country area of Victoria, it is the duty of every municipal council and public authority to take all practicable steps (including burning) to prevent the occurrence of fires on, and minimise the danger of the spread of fires on and from:
>
> (a) any land vested in it or under its control or management; and
>
> (b) any road under its care and management.

Country Fire Authority Act 1958 – Section 43: Duties and powers of councils and public authorities in relation to fire

> In the country area of Victoria, the Municipal Fire Prevention Officer of a municipal council may serve a fire prevention notice on the owner or occupier of land in the municipal district of that council (other than a public authority) in respect of anything—
>
> (a) on that land, other than a building or in a building;
>
> (b) on the adjacent half width of any private street that abuts that land, that by its nature, composition, condition or location constitutes or may constitute a danger to life or property from the threat of fire.

Country *Fire Authority Act 1958* - Section 41: Fire Prevention Notices Voluntary (by property owners)

Many property owners understand that they have a responsibility to reduce the fire risk within their community. Information about managing bushfire fuel is readily available. The Country Fire Authority (CFA) Vegetation Management Officers and Council Municipal Fire Prevention Officers are also available for further advice and support.

An example of Voluntary fuel management

Incentive and support programs

Below are two examples of support programs that help implement township-level fuel management.

FireScape Program

Groups of property owners often work with each other and public land managers to reduce fuel across different land tenures. The Country Fire Authority facilitates and supports these neighbourhood fuel management activities through the *Firescape Program*.

Community Fireguard

Groups of property owners can also come together to learn about bushfire risk and mitigation options (including fuel management) for their households through CFA's Community Fireguard Program

A group of property owners participating in a fuel management planning

More Information

- http://www.cfa.vic.gov.au/about/sustainable-fire-management/
- http://www.cfa.vic.gov.au/fm_files/attachments/About Us/Flyer_Fire_Scape-2014-04-01.pdf

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

Green waste disposal

Your local council may provide support programs, such as 'green waste disposal'.

Part 3: Bushfire Fuel Management Planning process

Community Based Fuel Management Planning

Planning for the protection of communities at risk from bushfire is best done as a community-based process. It involves interested community members supported by staff from local government, fire and land management agencies, working together in a collaborative process.

A Bushfire Fuel Management Planning team

The concept of community-based fire management planning is consistent with and supported by, state government policy such as:

- Community Based Emergency Management (EMV 2016)
  www.emv.vic.gov.au/publications/community-based-emergency-management-overview
- Bushfire Safety Policy Framework (EMV 2014)
  www.emv.vic.gov.au/publications/bushfire-safety-policy-framework
- Community Resilience Framework (EMV 2017)
  www.emv.vic.gov.au/publications/community-resilience-framework-for-emergency-management
- Safer Together (DELWP 2016).
  http://www.safertogether.vic.gov.au

More Information

For more information on Community Based Bushfire Management, contact your local CFA, Forest Fire Management Planning Team of Forest Fire Management Victoria (FFMVic) or local government representative.

A process for planning fuel management for the protection of townships and settlements

The methodology for township and settlement-based fuel management planning described in this guide was developed over three years by a working group of the *Dandenong Ranges Bushfire Landscape Project*. The concept was tested, trialled and further developed with the communities of Monbulk and Kalorama.

The Monbulk and Kalorama fuel management planning processes were led by community representatives and supported by staff from Yarra Ranges Council; Country Fire Authority (CFA); Department of Environment, Land, Water, and Planning (DELWP); Parks Victoria; and Melbourne Water.

As a result, Fuel Management Plans for Monbulk and Kalorama have been adopted by the Shire of Yarra Ranges Municipal Fire Management Planning Committee, and are now incorporated into the Municipal Fire Management Plan.

Methodology

1. Initiate planning

Bushfire fuel management planning for a specific town or settlement can be initiated in several ways. For example:

Community-Based Emergency Planning Group Might identify bushfire as one of their key threats. A group would approach agencies for support to determine the particulars of a planning process that would meet the needs of their community
Municipal Fire Management Planning Committee Might identify a list of priority towns. They would then work with the Regional Strategic Fire Management Planning Committee to ensure that planning was strategic and resources were adequate.
Regional Strategic Fire Management Planning Committee Might identify several high-risk towns through a risk assessment process. They might then suggest the need for fire/fuel management planning for a region or locality that straddles municipal boundaries. The capacity of a community to participate in any planning process needs to be considered by agencies and the community itself, regardless of who initiated. Some communities may have limited capacity, while others will be comfortable leading with support from the agencies.

2. Assemble the team

Bushfire fuel management planning at a township/settlement level is most successful if all relevant stakeholders collaborate in the planning process.

The best way to ensure this, is to form a working group with representatives from:

- locally relevant community groups (e.g. fire brigade, Landcare groups, business groups)
- Traditional Owners
- fire and land management agencies (e.g. CFA, FFMV, Parks Victoria, water authorities, plantation managers)
- large land owners relevant to the area (e.g. plantation companies, Trust for Nature)
- local council (e.g. Municipal Fire Prevention Officers, conservation officers)

This approach provides a good cross section of interests, local knowledge, capacity and responsibility. Other people can be engaged as required throughout the process.

3. Think carefully about leadership

Leadership is essential, and where this is provided by local community members, the planning process is likely to be more effective, with greater buy-in from the broader community.

4. Collaboration of fire and land management agencies

The collaboration and commitment of fire and land management agencies is essential to:

- provide technical expertise and information
- provide information on existing risk reduction initiatives
- link to response plans and other plans
- demonstrate commitment at the local level
- ensure cross tenure implementation of fuel management plans.

5. Involve other local groups and stakeholders

Other local groups and stakeholders, such as Landcare, conservation groups and farming groups, may also provide good local knowledge and connection with local landholders.

Any group who contributes to, or is impacted by, fuel management activities may also have issues that need to be considered.

It is more effective to address these issues in the planning stage than to let them create conflict later, when you are trying to implement the fuel management plan for the town.

6. Consider using an independent facilitator

A skilled, independent facilitator can be helpful to the planning process. Their role is to:

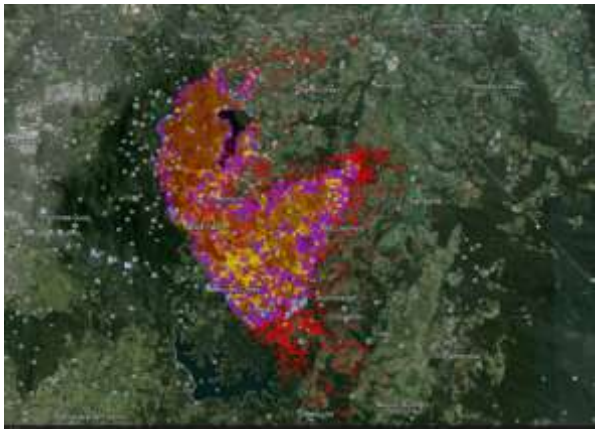
- lead discussions
- bring relevant parties and data/information to the planning process
- advocate for the planning group.

A skilled, independent facilitator makes sure that:

- all views are considered
- technical data and modelling is open, understandable and challengeable
- fuel management is considered in the broader context of community health and wellbeing, sustainability and viability
- corporate or personal agendas do not dominate
- outcomes are equitable and transparent.

7. Identify the bushfire 'catchment' for the town/settlement and model fire behaviour across this footprint

Bushfire risk modelling is used to identify the potential catchment of bushfire ignition and spread that is relevant to the town/settlement. This provides the geographic scope for discussion, an understanding of the bushfire threat, and where fuel management might be most effectively applied for the protection of the town/settlement.



Bushfire scenario modelling

Note

The regional Forest Fire Management Planning Team of FFMVic may be able to provide the bushfire risk modelling and mapping expertise for the working group.

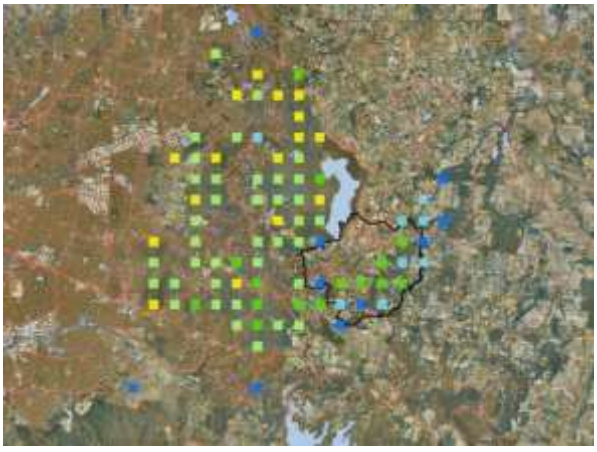
The bushfire catchment also provides a base map for the fuel management planning process. It is useful to provide several different map views of the bushfire catchment (e.g. satellite, public/private land, roads, easements).

Bushfire modelling and analysis needs to account for:

Geographic features	Weather features	Likelihood of impact
Fuel	Historical weather under which bushfires have occurred	Weather patterns prone to bad fire behaviour
Terrain	Potential future weather conditions	Ignition occurring – lightning or human cause
Location of assets and their impact threshold	Local weather patterns and idiosyncrasies	Loss of asset due to fire behaviour

Bushfire modelling products could include:

- ignition history and high impact ignition areas
- mapped areas showing threats from flame impacts, ember impacts and potential convective centres
- 'frequency of impact' models to identify particularly vulnerable areas
- historical and future weather data for the defined area.
  - what are the local weather patterns, including the worst case scenario?
  - What are the most likely local fire weather conditions to result in bushfire impacts?



Ignition risk modelling

8. Map existing public and private land fuel management plans

On the base map, identify and map:

- public and private land
- land managed by authorities and corporations (e.g. Melbourne Water, Councils and plantations)
- existing fuel management plans (e.g. Fire Operations Plans on public land, Council and local fire brigade fuel management plans).
- roadside fuel management plans and strategic fuel breaks if they exist.

9. Map the Urban Grown Boundary +200 meters as starting point for the Asset Protection Zone (APZ)

Many towns will have a designated Urban Growth Boundary. The Urban Growth Boundary marks the boundary to the existing (and future) densely settled area of the town.

> **NOTE**
> This information should be available from the local Council.

If one exists:

- map the Urban Growth Boundary (UGB) for the town
- mark a buffer of 200 metres outside the UGB.

Adding a buffer of 200 metres establishes an effective separation from unmanaged vegetation.

Where an Urban Growth Boundary is not designated, begin by drawing a line around the settled area of the township/settlement and include an approximately 200 metre buffer.

10. Rationalise APZ boundary to meaningful and practical linear features

Starting with the UGB+200 boundary, use local knowledge and existing fuel management plans (particularly on public land) to map the boundary of the Asset Protection Zone (AZP).

The APZ boundary should:

- Follow practical landscape features such as roads, easements and property boundaries.
- Incorporate existing public land APZs where they exist.
- Consider likely fire paths and direction of threat.
- Avoid crossing properties, using drainage lines, or other impractical linear features.

Asset Protection Zone

The Asset Protection Zone is intended to provide protection to the town by:

- reducing radiant heat and ember attack in the event of a bushfire
- reducing house loss potential
- enabling the potential establishment of the town centre as a 'safer centre' and
- protecting most community and commercial infrastructure in the town/settlement.

Asset Protection Zones are prioritized to protect life and property and have the highest intensity of bushfire fuel management. In many places the APZ will include buildings, gardens, paved areas, and recreation spaces.

11. Consider need for, and placement of, Bushfire Moderation Zones (BMZ)

Once the APZ is mapped and agreed, consider the need for Bushfire Moderation Zones. Generally, this zone is placed around the Asset Protection Zone. Consideration might be given to increasing the depth of the BMZ on the approach side of bushfires or in areas of significant forest.

Bushfire Moderation Zone

The purpose of the BMZ is to:

- reduce the speed and intensity of a bushfire
- support the APZ (particularly on the approach side of a community-threatening bushfire)
- address risks resulting from topographic or significant areas of unmanaged vegetation
- reduce the impact of embers on the township or settlement.

The priority of Bushfire Moderation Zones is still on the protection of life and property. However, the fuel management standards are less intense, and damage to ecological values should be minimised, as long as it does not compromise the safety of people and property.

12. Identify and map Landscape Management Zones (LMZ)

The next zones to identify and map are the Landscape Management Zones (LMZ). These might be identified within the APZ or the BMZ if there are:

- areas of significant ecological, cultural or historical value (e.g. vegetation of high ecological value, indigenous cultural sites, historic sites)
- areas not available for fuel management (e.g. too steep, too wet).

Landscape Management Zone

In these areas, vegetation management may still be undertaken. The emphasis, however, is on achieving objectives other than the bushfire protection of the town/settlement, such as woody weed control, planned burns for biodiversity enhancement, protection of individual houses.

NOTE

All other areas outside the APZ and the BMZ will be considered as Landscape Management Zone.

13. Identify and map Fuel Management Exclusion Zones (FMEZ)

The next step is to identify the Fuel Management Exclusion Zones (FMEZ) within the other three zones. This provides an opportunity to exclude or restrict fuel management activities from areas:

- containing very high ecological value such as rare or endangered species
- of significant cultural/historical significance
- where fuel management might create other risks such as landslip or erosion (as identified by existing land-use planning layers, available through the local Council).

Use local knowledge, Council data and other information to map such areas as FMEZ.

Fuel Management Exclusion Zones

Note

Within a Fuel Management Exclusion Zone, vegetation or any other ground disturbance should **not be undertaken** without due consideration for the risks that this activity might create.

Any works undertaken may require a planning permit. It is strongly recommended that anyone considering undertaking vegetation management in these areas contact their local Council.

14. Redo bushfire modelling and risk assessment

Once you have mapped the proposed Fuel Management Zones for your community, it is useful to re-run the bushfire risk modelling and assessment.

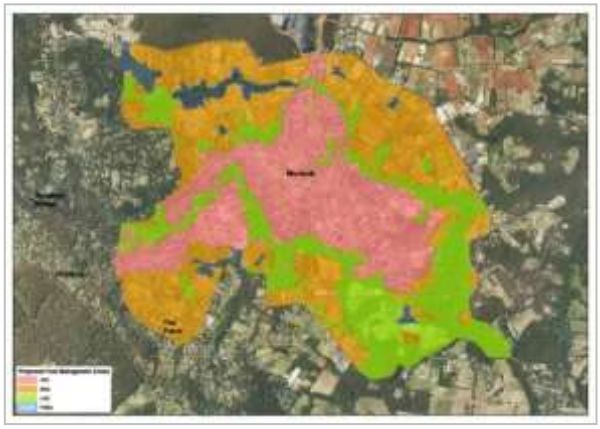
Bushfire modelling should consider these questions:

- Do the Fuel Management Zones contribute to risk reduction in a way that is acceptable to the Working Group and the community?
- Are there modifications to the Fuel Management Zones that would further reduce the impact of bushfire on this community?
- What bushfire risk cannot be managed by the Fuel Management Zones?

15. Agree on the plan

After the Fuel Management Zones are mapped and evaluated, members of the Working group should:

- discuss the draft Bushfire Fuel Management Plan
- carry out further bushfire risk modelling (if necessary)
- consult with local experts and interest groups
- amend the planning as necessary.



Map of Fuel Management Zones

Once the Working Group are comfortable that the Bushfire Fuel Management Plan provides for the safety of the town (ensuring that ecological and other values are considered) they should formally agree on the plan. This might mean that:

- DELWP/Parks Victoria agrees to carry out actions on public land to support the Bushfire Fuel Management Plan.
- CFA undertakes fuel management on behalf of and at the request of the private landowner/manager
- Other relevant land managers (e.g. water authorities, Council) agree to carry out fuel management activities to support the Bushfire Fuel Management Plan.
- Council agrees to carry out actions on council managed land to support the Bushfire Fuel Management Plan and to undertake fire hazard inspections on private land based on the Fuel Management Zone prescriptions.
- Private landholders are engaged, and information on how to maintain their property to the appropriate standard is made available.

- All stakeholders agree on implementation, ongoing management and review of the Bushfire Fuel Management Plan.

Note

Please refer to the completed example of a Bushfire Fuel Management Plan attached to this Guide in Appendix 3

16. Communicate the plan to the community

Most bushfire fuel is under the management of private landholders. Therefore, it is critical they understand the background and detail of fuel management planning and what their responsibilities might be. It is also important to listen carefully to concerns and issues, and resolve them where possible.

Note

Please refer to the completed example of the Bushfire Fuel Management Plan Information for Residents in Appendix 4 as a resource to assist communicating bushfire fuel management as detailed in this Guide.

It is important to clearly communicate the purpose of the Bushfire Fuel Management Plan, which is to protect and sustain their township or settlement.

It is 'their plan' and not just a product of an agency or the Council. All agencies and community members share responsibility and need to collaborate to protect the township and its assets.

Important

Fire safety is just one of the priorities for the town. It fits within the broader framework of community Health and Wellbeing, which includes:

- economic considerations
- ecosystem health and sustainability
- social wellbeing
- buildings and infrastructure.

17. Formally endorse the plan

When the community and agency stakeholders have broadly agreed on the Township Bushfire Fuel Management Plan and how it will be implemented, it should be:

- formally endorsed by the local Working Group
- presented, with recommendations, to the relevant Municipal Fire Management Planning Committee.

Note

The authority to plan, and the ownership of the Township Bushfire Fuel Management Plan, always remains with local planning groups.

18. Consider and adopt the plan - Municipal Fire Management Planning Committee

The Municipal Fire Management Planning Committee will consider and adopt the Township Bushfire Fuel Management Plan. It will then be added to the Municipal Fire Management Plan as an appendix. This ensures that agencies and Council:

- include appropriate actions in their Annual Work Plans
- coordinate and monitor fuel management planning along with other fire management activities.

Municipal representatives to the Regional Strategic Fire Management Planning Committees, can provide mapping data from township Fuel Management Plans. This enables collation of these plans across the broader landscape. It also helps strategic fuel management planning at the regional level.

19. Implement the Plan

All stakeholders have responsibility for implementing the township/settlement Fuel Management Plan, according to their responsibilities and resources. It may take a number of years for the Plan to be fully implemented.

- Public land managers need to include and implement actions from the plan in their Fire Operations Plan.
- CFA will need to include and implement actions from the plan into brigade, district and regional planning processes
- Council needs to manage reserves and roads under their control, consistent with the plan and other fire management expectations.
- Council also needs to implement its Fire Hazard Inspection Program consistent with the standards outlined within the plan.
- Private landholders must manage bushfire fuel on their land in accordance with plan.

20. Review the plan

The Bushfire Fuel Management Plan should be reviewed annually.

Annual review

Fire Management Action Plans should be reviewed annually by the Municipal Fire Management Planning Committee (MFMPC). This includes reviewing and reporting on implementation of individual town-based fuel management plans.

An annual review will:

- establish if there have been significant changes to bushfire risk in the plan area over the last 12 months
- confirm that agreed actions for that year have been undertaken
- confirm and schedule actions for the next 12 months.

Monitoring and Review

The Regional Strategic Fire Management Planning Committee/Subcommittee (RSFMPC/RSFMPSC) will monitor and review the implementation of fuel management planning within the region.

This includes:

- reviewing and reporting on the implementation of municipal and regional level fuel management plans and actions across the region and to the state
- coordination of resources to undertake fuel management planning across the region including advocating to the state on regional needs
- reviewing risk mapping and modelling
- monitoring land use or settlement pattern changes
- liaising with adjoining regions on fuel management planning

Appendix 1: Bushfire Fuel Management Zones

These prescriptions are based on the Port Phillip Region, East Port Phillip Fire District Fire Protection Plan, Department of Sustainability and Environment, November 2003. Other locations around the state may have their own prescriptions, based on their local environment.

Asset Protection Zone

Purpose

Asset Protection Zones (AMZ) provide the highest level of protection from the impact of radiant heat and direct flame contact and embers.

The aim is to establish relatively small, local, intensely managed areas to specifically protect:

- human life
- settlements
- facilities accommodating vulnerable people, (schools, aged care, hospitals)
- high value community assets and infrastructure
- critical transport routes.

Trigger

The trigger level for undertaking fuel management activities in this zone is when the Overall Fuel Hazard reaches ***Moderate***.

Management intensity

Fuel management in this zone is intensive. The aim is to reduce the Overall Fuel Hazard **to below Moderate over 90% of the planned area.**

Defined limits for fuel hazard

Each fuel component should be maintained at or below the maximum levels (*Overall Fuel Hazard Guide – McCarthy et al. 2010*).

Fuel Layer	Hazard Rating (OFHG)
Surface fine fuels	At or less than ***Moderate***(litter bed height 15–25 mm)
Near surface fuels	At or less than ***Moderate***
Elevated fuels	At or less than ***High***
Bark fuels	At or less than ***High***(unless surface fine fuels are Low)

Impact

Intensive fuel management may have a significant impact on a range of environmental and economic values. Fuel management activities should be complimentary across public and private land. Planning should be undertaken with owners, occupiers or managers of the target land, agencies and appropriate community groups.

The aim is to integrate fuel management activities across the public/private land interface.

Treatment options

In this zone, mechanical fuel treatment will provide the most effective and certain outcomes. Planned burning may be an effective option but will provide challenges such as timing, resources, and risk if in close to assets. Grazing may provide a cost-effective treatment in areas of low ecological value.

Indicative treatment frequency

Frequency should maintain the Overall Fuel Hazard to the above limits and could vary between **one and five years.**

Land use planning considerations

The adoption of an Asset Protection Zone might inform land use planning. Considerations could include:

- relaxation of vegetation controls
- restriction on revegetation
- restriction of land use that results in fuel hazard inconsistent with the APZ performance standards.

Revegetation considerations

Revegetation should be consistent with the Fuel Hazard prescriptions for an Asset Protection Zone including:

- minimal middle story
- low flammability and low bark hazard species
- clumped and spatially separated plantings.

Other risk considerations

Undertaking intensive fuel management may increase the risk from other hazards, such as landslip and erosion. Overlaying these risk layers during the planning process will ensure that managing one risk does not exacerbate the others.

Bushfire Moderation Zone

Purpose

Bushfire Moderation Zones (BMZ) provide strategic areas and corridors of sufficient width, continuity and fuel modification. The aim is to:

- support APZ protection
- provide areas which assist in making fire suppression safer and more effective
- provide a substantial barrier to the spread of bushfire by reducing its speed and intensity
- reduce spread from predictable, high consequence ignition areas
- reduce ember hazard from areas that might generate significant ember impact on communities (e.g. ember ramps).

Trigger

The trigger level for undertaking fuel management activities in this zone is when the Overall Fuel Hazard reaches ***High.***

Management intensity

Fuel management in this zone should be strategic and regular. The aim is to:

- maintain a nominated range of fuel characteristics that are generally broader than those for APZ
- reduce the Overall Fuel Hazard to **below High over 80% of the planned area**.

Defined upper limits for fuel hazard

Each fuel component should be maintained at or below the maximum levels (Overall Fuel Hazard *Guide – McCarthy et al. 2010*).

Fuel Layer	Hazard Rating (OFHG)
Surface Fine Fuels	At or less than ***High*** (litter bed height 25–35 mm)
Near Surface Fuels	At or less than ***High***
Elevated Fuels	At or less than ***High***
Bark Fuels	At or less than ***High*** (unless surface fine fuels are Low)

Impact

The level of fuel management in this zone may have significant impact on sensitive environmental and economic values. The potential incompatibility between fuel management and these values should be resolved by careful placement and delineation of the zone.

Consultation may be required and zone boundaries and/or treatment schedules modified without compromising safety and protection objectives.

Location

Bushfire Moderation Zones are located to complement APZ areas, and strategically placed in the broader landscape, around settlements and adjacent to areas where there is a high potential for economic or cultural loss from bushfire. They should be spaced to minimise the area at risk from bushfire under strong northerly and south-westerly winds.

Treatment options

In this zone, mechanical fuel treatment provides the most effective and certain outcomes. Planned burning, although valuable, faces challenges such as timing, resources, and risk – if in close proximity to assets. Grazing may provide a cost-effective treatment in areas of low ecological value.

Indicative treatment frequency

Frequency should maintain the Overall Fuel Hazard to the above limits and could vary between **five and twenty years.**

Land use planning considerations

The adoption of a Bushfire Moderation Zone might inform land use planning. Considerations could include:

- relaxation of vegetation controls
- restriction on revegetation
- restriction of land use that results in fuel hazard inconsistent with the APZ performance standards.

Revegetation Considerations

Revegetation should be consistent with the Fuel Hazard prescriptions for a Bushfire Moderation Zone including:

- low flammability and low bark hazard species
- ensuring that plantings are targeted to specific ecological outcomes (e.g. riparian zones) but do not compromise community safety outcomes.

Landscape Management Zone

Purpose

Landscape Management Zones (LMZ) identify areas where fuel management may be undertaken to support an APZ and a BMZ, and modify the way bushfires move across the broader landscape. . The aim is to protect significant biodiversity assets, while still enable fuel management activities.

Landscape Management Zones can also be applied to areas that are:

- not otherwise zoned
- identified as having significant biodiversity value
- not available to practical fuel management treatments.

Trigger

The trigger level for scheduling fuel management activities in this zone is when the Overall Fuel Hazard reaches ***High* on 50% of the zone**.

Management intensity

Fuel management in this zone should complement the intensive and strategic fuel management undertaken in the APZ and the BMZ. The aim is to:

- provide a mosaic of fire frequencies and intensities without large contiguous areas of non-managed fuel
- undertake fuel management at a **low to moderate intensity over 50-69% of the area** (although this may vary according to the ecological objective).

Opportunistic planned burning may also occur to link areas burnt by wildfire to other strategic fuel management areas.

Defined limits for fuel hazard

Each fuel component should be maintained at or below the maximum levels (*Overall Fuel Hazard Guide – McCarthy et al. 2010*).

Fuel Layer	Hazard Rating (OFHG)
Surface Fine Fuels	At or less than ***High***(litter bed height 25–35 mm) on 50 % of the zone
Near Surface Fuels	At or less than ***High*** on 50% of the zone.
Bark Fuels	At or less than ***High*** on 50% of the zone (unless surface fine fuels are Low)
Elevated Fuels	At or less than ***High*** on 50% of the zone

Impacts

Fuel management in this zone provides a mosaic of fire frequencies and intensities without burning large contiguous areas. Fuel management should be consistent with appropriate fire regimes for particular vegetation communities.

Advice from flora and fauna biologists should be sought to ensure that appropriate fire frequency and intensity is within the preferred range for achieving broad-based ecological management objectives.

Landscape Management Zone areas strengthen protection for APZs and BMZs, and comprise areas where the frequency and intensity of burning is compatible with ecological processes. High value assets are not directly at risk. Fuel Management is not required to be excluded.

Treatment options

In this zone, mosaic burning, mechanical, and manual vegetation modification may be most appropriate to use in smaller LMZ areas within Asset Protection Zones or Bushfire Modification Zones. Woody weed removal can also be an effective method of improving biodiversity while reducing fuel. Planned burning also provides a cost-effective tool for modifying fuels in larger areas or at a landscape level.

Indicative treatment frequency

Frequency should maintain the Overall Fuel Hazard to the above limits and could vary between **fifteen and thirty-five years,** depending on ecological objectives.

Fuel Management Exclusion Zone

Purpose

Fuel Management Exclusion Zones exclude fuel treatment from areas where:

- there is a high potential for ecological, cultural, or economic loss
- disturbance from fuel management activities may cause or exacerbate other risks such as erosion or landslip.

In these zones, vegetation management may still be undertaken for ecological outcomes. This might also have fuel reduction outcomes (for example woody weed removal).

Location

Fuel Management Exclusion Zones might be applied to:

- high value ecological sites (e.g. containing rare or threatened species or ecosystems)
- sites being managed for ecological outcomes (e.g. Land for Wildlife)
- sites identified as being of significant cultural value (e.g. aboriginal cultural sites)

Identification

These areas may be identified during fuel management planning and through discussions with community members and groups. Such areas might be considered as 'assets' and may be the subject of special protection measures (including fuel reduction in nearby areas) to reduce the probability of damage by wildfire.

Fuel Management Exclusion Zones may also be negotiated or agreed between private property owners and Municipal Fire Prevention Officers and be excluded from annual fire prevention programs.

Appendix 2: Bushfire Fuel Management Treatment Options

Introduction

Modifying vegetation for bushfire fuel management and community safety outcomes can be done in several ways. The method chosen depends on the area and the aim of fuel management for that area.

Planned burning

Planned burning

Planned burning is an efficient way to treat large areas or areas difficult to access. All fuel layers may be managed in the one operation.

Planned burning can also be used to improve the ecological value of degraded or unmanaged areas.

This type of treatment:

- requires a lot of planning and coordination
- is highly labour intensive
- is heavily weather dependent
- carries significant risk.

Mechanical

Mechanical vegetation modification

Mechanical vegetation modification e.g. slashing, mowing and mulching is a very effective fuel management treatment to use in Asset Protection Zones or Bushfire Moderation Zones.

Mechanical vegetation modification can be:

- precisely timed
- is largely independent of weather conditions
- provides certainty around fuel reduction
- is less labour intensive than planned burning.
- may be less costly than planned burning
- Planning considerations must include:
- the impact on the natural environment (e.g. soil, water, flora and habitat for fauna).
- scheduling to meet the requirements of the flora or fauna in the slashed area, providing the fuel management objectives are still met.
- avoidance of translocation of weed species from one area to another
- maintaining slashed areas in a condition that satisfies the fuel management objectives.

Mechanical vegetation management can also be carried out to maintain physical clearance and sight lines. Frequency is decided by the type of vegetation and the site ecological value.

Grazing

Grazing

Grazing is an efficient fuel management option when it aligns with the fuel management objectives of the targeted area.

The location, type, level and period of grazing should be decided through consultation with:

- land managers
- specialists in forestry, flora and fauna
- any other relevant specialists
- the property owner.

Appendix 3: Township/Settlement Bushfire Fuel Management Plan

The following is a completed example of a Draft Community Based Fuel Management Plan prepared for the Monbulk Township and presented to the Shire of Yarra Ranges Municipal Fire Management Planning Committee for adoption into the Yarra Ranges Municipal Fire Management Plan.

Community Based Bushfire Fuel Management Plan

Monbulk

Background

This Fuel Management Plan was prepared by the Monbulk Fuel Management Working Group.
The Working Group consisted of representatives of: Monbulk community; Monbulk Fire Brigade; Country Fire Authority; Shire of Yarra Ranges; Melbourne Water; Parks Victoria; Department of Environment, Land, Water and Planning.

Purpose

The purpose of this Plan is to contribute to the safety of people seeking shelter in the 'safer centre' of Monbulk and ensure the viability and sustainability of the Monbulk Township from the impact of bushfires.
This Plan identifies:

- Identifies fuel Management Zones on private and public land (including fuel management exclusion zones);
- Details fuel management actions appropriate to manage bushfire hazard;
- Assigns responsibility and timing for action;
- Records completed actions and reviews.

Authorisation

The Monbulk Fuel Management was presented to, and endorsed by interested community members in November 2016.
The Plan was adopted by the Shire of Yarra Ranges Municipal Fire Management Planning Committee (SYR MFMPC) on: .....

Review

Annually: The actions defined in this Plan will be reviewed annually by the SYR MFMPC.

5 yearly: The Plan will be reviewed every five years with regard to:

- Fire and risk modelling
- Completion of actions
- Appropriateness of Fuel Management Zones and risk treatment actions

The next 5 year review is due in 2022.

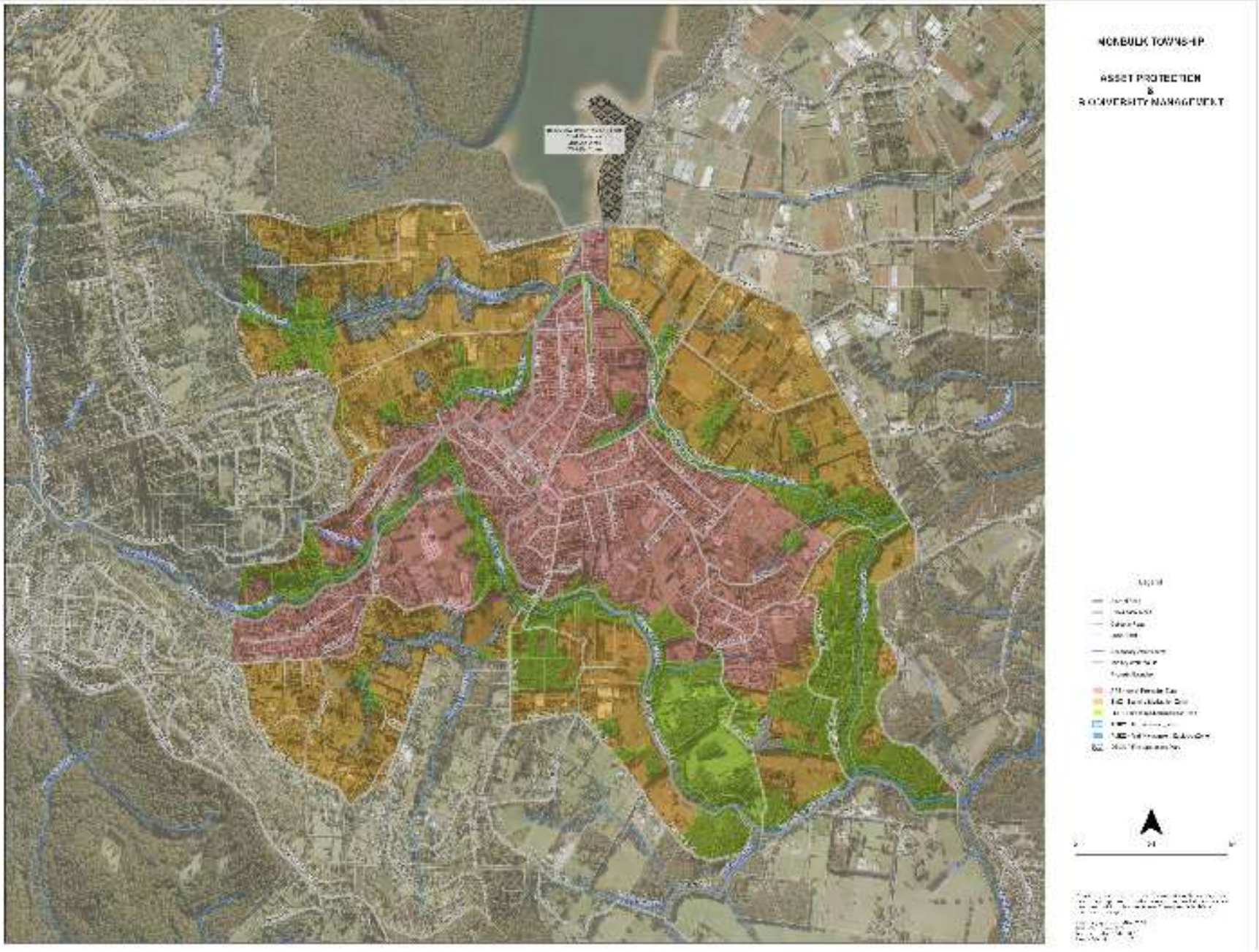
References

Fire Operations Plan - DELWP

Silvan Bushfire Risk Management Plan – Melbourne Water

Shire of Yarra Ranges Municipal Fire Management Plan

Fuel Management Plan - Monbulk



Example Action Plan for consideration

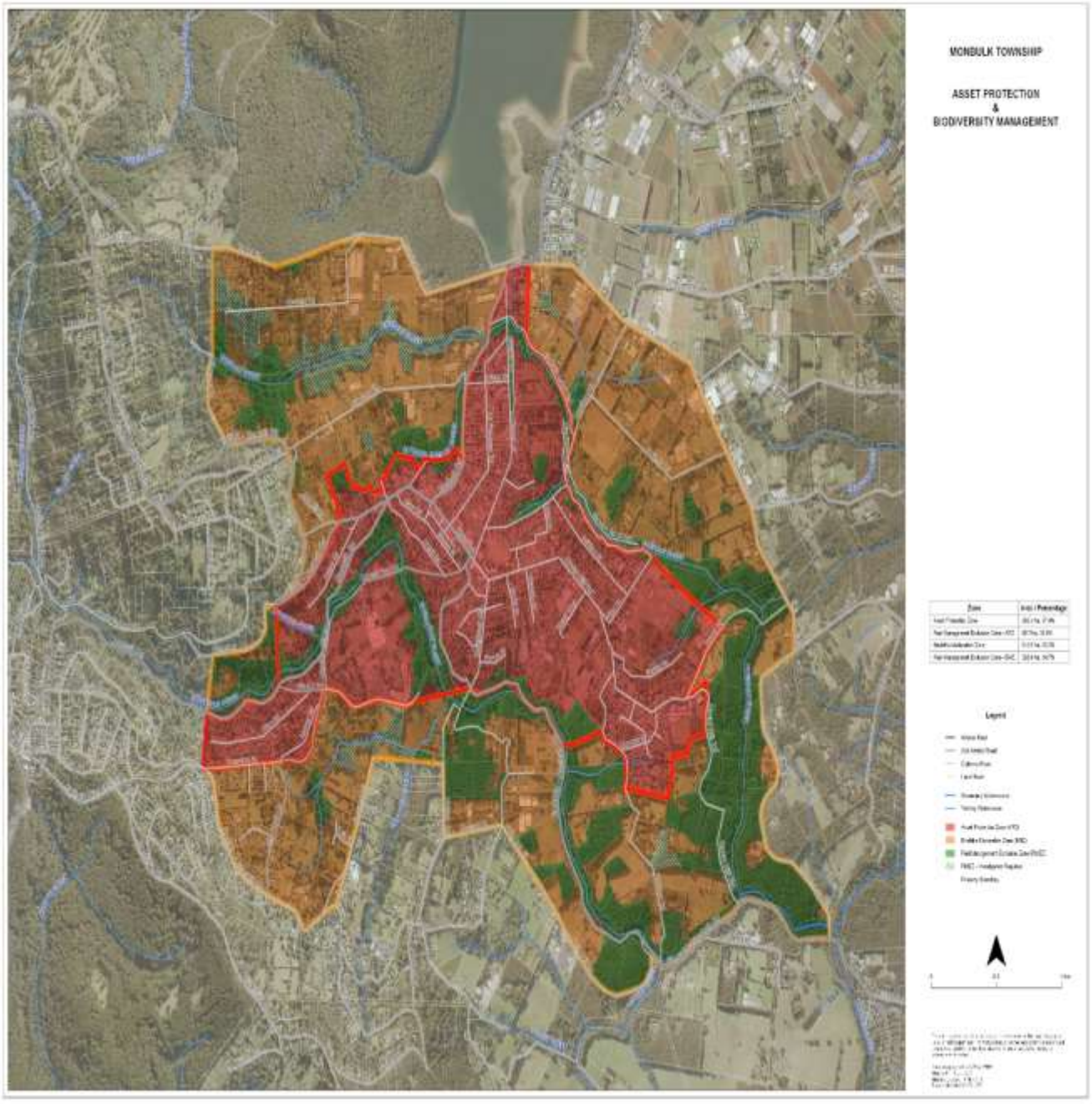
Action	detail	Timing	Responsibility	Completed/reviewed
Fire hazard Inspections	targeting APZ & BMZ	Annually	SYR MFPO	
Planned Burning	Burn Unit XX	20XX	Parks Victoria	
	Burn Unit YY	20XX	Melbourne water	
	Property Address	20XX	Monbulk Fire Brigade	
Mechanical Vegetation Modification				
Grazing				

Appendix 4: Bushfire Fuel Management Plan Information for Residents

The following is a completed example of information prepared for the Monbulk Township to help inform the local community about the fuel management methodology and requirements outlined in the local Bushfire Fuel Management Plan.

Monbulk
Bushfire Fuel Management Plan

Information for Residents



Developed and prepared by the

Monbulk Fuel Management Working Group

Working together to reduce bushfire fuels

The Monbulk Bushfire Fuel Management Plan has been developed by a Working Group of community members, Monbulk Fire Brigade, Monbulk Landcare, staff from Yarra Ranges Council, Country Fire Authority, Parks Victoria, Melbourne Water, and Department of Environment, Land, Water and Planning.

What does the Monbulk Bushfire Fuel Management Plan do?

The Monbulk Bushfire Fuel Management Plan identifies areas where fuel reduction is important to protect our town and community. It also identifies areas where fuel management may not be appropriate, or where natural values should be preserved.

Having a coordinated and agreed fuel management plan for Monbulk will help:

- protect the township of Monbulk
- reduce spot fires within the area
- reduce house-to-house ignitions
- protect the majority of critical community assets including schools, shops, and halls
- protect the majority of homes within the township
- provide greater safety to people (residents and visitors) seeking shelter in Monbulk
- ensure that critical community infrastructure remains viable to aid the recovery of our community after a fire has passed.

NOTE

Important Note

- This Plan identifies areas where bushfire fuel management will be targeted to **reduce bushfire risk to the community.**
- **It is not designed to protect individual properties or houses** (although many properties will benefit from this plan). **IMPORTANT: The responsibility for the protection of individual properties rests with the property owners themselves.**
- Information on preparing and protecting your property is readily available from CFA and Yarra Ranges Council.

What is bushfire fuel?

Anything in the open that can burn, will add to the intensity of a bushfire. This includes all forms of vegetation, ground litter, and even houses. In managing the intensity of bushfires, most emphasis is placed on managing 'fine fuels' – plant material that is less than 6mm in diameter. Fine fuels dry out quickly, ignite easily, release all their energy in a short time and can be carried as embers.

While the amount of fine material is important, more important is its arrangement, both horizontally and vertically. For example, modifying middle storey vegetation will reduce the chances of flames getting into the tree canopy, while clumping vegetation and separating clumps by 10 metres with paths or managed grassed areas will change the way fire moves across the area. Clumps should not be bigger than 10 metres.

About This Resident Information Pack

This information has been developed to inform residents about the Monbulk Bushfire Fuel Management Plan and how to contribute to bushfire fuel management in reducing bushfire risk to the Monbulk township and community.

A copy of the Monbulk Bushfire Fuel Management Plan is available on the Shire of Yarra Ranges website: http://www.yarraranges.vic.gov.au or by contacting the Council's emergency management team.

Managing bushfire fuel

IMPORTANT NOTE

- **Nothing in this bushfire fuel management plan removes the obligation for land owners to comply with all native vegetation protection regulations. Further information is available at Yarra Ranges Council.**
- Exemptions may apply, particularly for the management of vegetation in close proximity to houses. Contact Yarra Ranges Council for further information.

Reducing the fine fuels that contribute to the bushfire risk can be undertaken in a number of ways. Many properties in Monbulk will already achieve a reduced bushfire risk through everyday gardening and property maintenance.

Where fuel management is required, it might be undertaken by:

Mowing and Slashing

Mowing and slashing are effective in reducing the amount of fuel and changing the arrangement of grasses and undergrowth.

Grazing

Grazing is a very efficient, low cost way of managing fine fuels (grass). Best applied in existing pasture areas, grazing is not appropriate in areas of native vegetation.

Planned Burning

Using fire to reduce fuel on your property may be an option outside of fire restriction periods and local law requirements. Significant knowledge and skill is required to undertake planned burning and property owners should seek the advice of CFA and local Council before undertaking any fuel reduction burning. (Contact CFA's Vegetation Management Officer on 8739 1300)

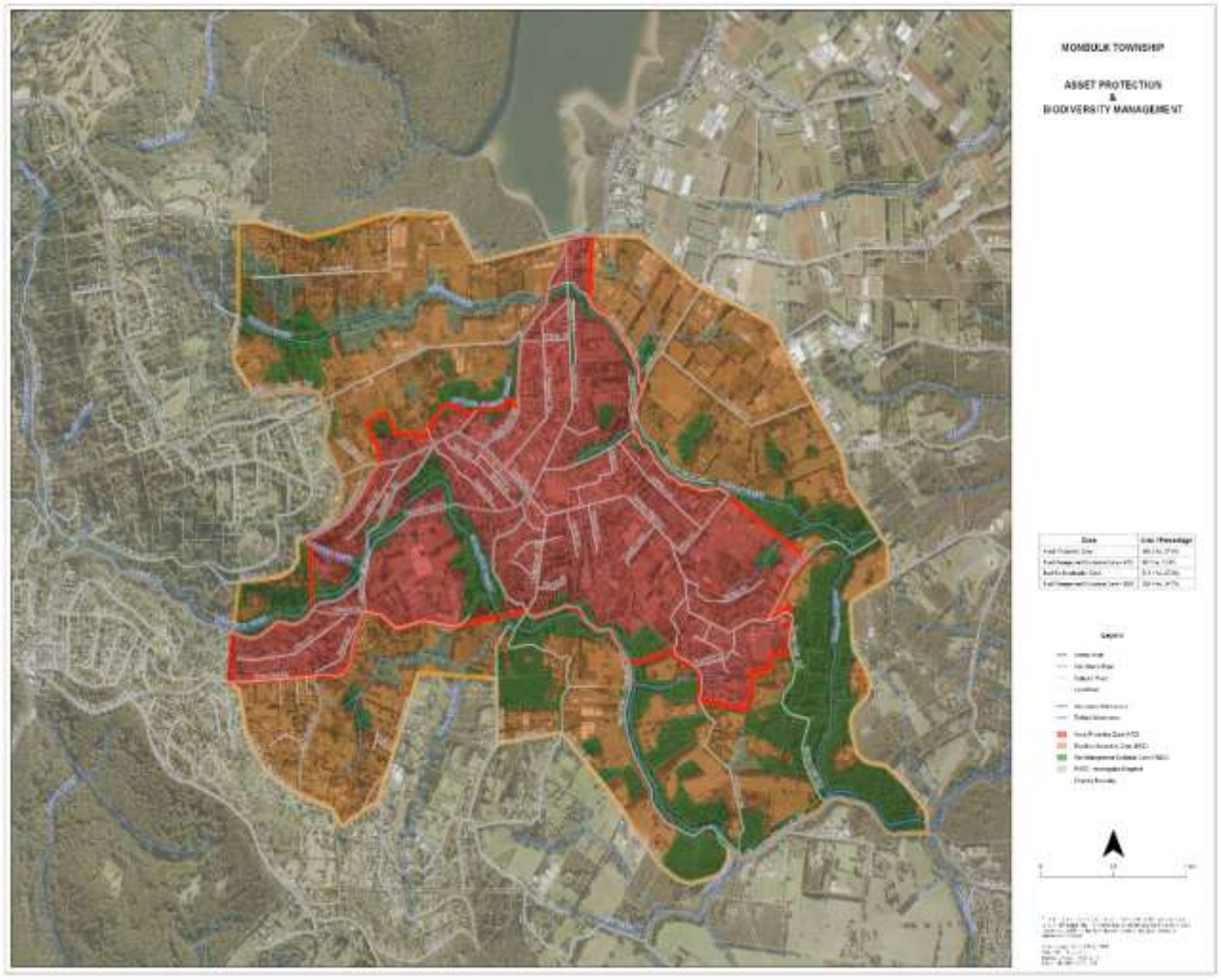
Enforcement and Exemptions

Where the bushfire fuel conditions on individual properties create a risk to the broader community, property owners may be served a Fire Prevention Notice under the CFA Act; which will detail specific fuel reduction actions the property owner must undertake. Failure to comply with Fire Prevention Notices may result in significant fines with the required work being undertaken by contractors.

Where properties are managed for ecological/biodiversity objectives, property owners are able to seek variations from the recommended fuel management standards. If you would like to discuss variations for your property, call the Municipal Fire Prevention Officer at Yarra Ranges Council.

Monbulk Bushfire Fuel Management Plan

The following is the completed map of Fuel Management Zones for Monbulk from the Bushfire Fuel Management Plan



- Asset Protection Zone
- Bushfire Moderation Zone
- Landscape Management Zone
- Fuel Management Exclusion Zone

What does it mean for you as a property owner?

If you live in the Asset Protection Zone (APZ)

The **Asset Protection Zone** is targeted to provide the greatest level of protection to the majority of community assets. Bushfire fuel management will be intense and the aim is to have very high fuel reduction across 90% of the area.

Example	Fuel Management
	Gardens ▪ Garden maintenance. ▪ separated garden beds ▪ grass mown to less than 10 cm ▪ low flammability plants (see https://www.cfa.vic.gov.au/plan-prepare/landscaping for details) ▪ minimal leaf litter
	Bushland areas ▪ middle storey (shrub layer) removed or heavily modified ▪ grass slashed ▪ minimal ground fuel
	Roadsides ▪ Residents need to contact the appropriate road authority prior to conducting any work on roadsides.

If you live in the Bushfire Moderation Zone (BMZ)

Bushfire Moderation Zones supports Asset Protection Zones by reducing bushfire intensity and the potential for embers. Fuel management is less intense than in the APZ, with more consideration for ecological outcomes. The aim is to have high bushfire fuel management across 80% of the area.

Example	Fuel Management
	Gardens ▪ clumped plantings with paths and grassed area separating plantings ▪ reduced middle storey
	Bushland areas ▪ middle storey (shrub layer) removed or heavily modified ▪ bark fuels modified ▪ ground fuels slashed or burnt every few years
 	

If you live in the Landscape Management Zone (LMZ)

All areas not identified as APZ, BMZ or Fuel Management Exclusion Zones are considered as **Landscape Management Zones.** Landscape Management Zones identify areas which are less critical for managing the bushfire threat to the town, and may have significant ecological or cultural values. Vegetation management by planned burning may be undertaken to improve ecosystem health, and will also have fuel reduction outcomes. Fuel management is to be undertaken less frequently, based on the needs of endemic species.

Example	Fuel Management
	Wet Gullies ▪ may have significant ecological value and fire sensitive plants` ▪ difficult to undertake planned burning or mechanical fuel management ▪ because of high moisture, generally pose lower bushfire risk. ▪ sometimes removal of woody weeds may contribute to fuel reduction
	Bushland areas ▪ may have significant ecological value ▪ plant species may benefit from occasional planned burns ▪ reduction in bark hazard may support bushfire protection.
	

Fuel Management Exclusion Zone (FMEZ)

FMEZs identify areas where the ecological values are so high that vegetation management should not be undertaken for the purposes of bushfire protection. They also identify areas where undertaking fuel management may lead to increases in risks such as landslip or erosion.

Example	Fuel Management
	Bushland areas ▪ no planned bushfire fuel management ▪ sometimes removal of woody weeds may reduce fire risk

More information?

Yarra Ranges Council

- Contact the Emergency Management Team:
  - Phone: 1300 368 333
  - Email: emergencymanagement@yarraranges.vic.gov.au
  - Website: http://www.yarraranges.vic.gov.au

Country Fire Authority

- Contact: http://www.cfa.vic.gov.au
- Contact CFA Vegetation Management Officer 8739 1300

Forest Fire Management Victoria

- Email: Forestfire.planningpp@delwp.vic.gov.au
- Website: https://www.ffm.vic.gov.au

Appendix 5: Further Information

Overall Fuel Hazard Assessment Guide (DELWP)
https://www.ffm.vic.gov.au/__data/assets/pdf_file/0005/21110/Report-82-overall-fuel-assess-guide-4th-ed.pdf

Community Based Emergency Management Overview
www.emv.vic.gov.au/publications/community-based-emergency-management-overview

CFA Roadside Management Guidelines
www.cfa.vic.gov.au/fm_files/attachments/Publications/roadside_guide.pdf

CFA Landscaping for Bushfire
www.cfa.vic.gov.au/fm_files/attachments/plan_and_prepare/landscaping/landscaping_for_bushfire.pdf

Code of Practice for Bushfire Management on Public Land
www.ffm.vic.gov.au/__data/assets/pdf_file/0006/21300/Code-of-Practice-for-Bushfire-Management-on-Public-Land.pdf

Bushfire Management Overlay Guide
www.dtpli.vic.gov.au/planning/planning-and-building-for-bushfire-protection

DELWP Fire Operations Plan
https://www.ffm.vic.gov.au/bushfire-fuel-and-risk-management/fire-operation-plans

Vic Roads Bushfire Risk Assessment Guidelines
www.vicroads.vic.gov.au/~/media/files/technicaldocuments/guidelines/bushfireriskguidelines_web.ashx