



Building in a Wildfire Management Overlay



Applicant's Kit 2007



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Foreword

Each year wildfires represent a significant risk to people and property throughout Victoria.

To help combat wildfire risk, and to minimise loss of life and property, the Country Fire Authority (CFA) has developed guidelines about the appropriate location and design of buildings and the adoption of other fire risk management actions in wildfire prone areas.

The information provided in this kit has been developed in cooperation with councils, the Municipal Association of Victoria, the Department of Infrastructure, the Department of Sustainability and Environment and the Building Commission.

The kit was first released in 2002. This update has several new features to improve understanding of the site assessment process, guidance on house design and location, and linkages to environmental planning controls.

If the property is well prepared, a house may be used as a safe haven to protect residents from the passage of a wildfire. Our aim is to implement planning and construction controls that will make it feasible for residents to plan for, and actively defend their home against wildfire.



Neil Bibby ASFM
Chief Executive Officer
Country Fire Authority
June 2007

Introduction

To help ensure that new homes are defensible, the Victorian government has introduced a planning permit control called the Wildfire Management Overlay. This overlay forms part of a municipal planning scheme and identifies areas which are considered to be at particular risk from wildfire due to vegetation, slope and climatic conditions.

New developments in areas covered by a Wildfire Management Overlay will be subject to permit conditions that control the location, building design and ongoing management of the site.

CFA has developed this kit to streamline the process of applying for a planning permit and at the same time help the applicant understand wildfire risk and how to manage it.

The kit provides a set of tools for the assessment of wildfire risk and management requirements, standard permit conditions that could be applied, and guidance for alternative solutions if the standard conditions are not appropriate.

Managing for wildfire risk is complex, however the kit provides tailored solutions for less complex sites. In more complex sites applicants may need to seek professional assistance. This kit will help you identify if you need professional assistance.

About the Kit

Who should use this kit?

This kit will help anyone intending to build or extend a house in a Wildfire Management Overlay (WMO) area to obtain the necessary permits. It is used to ensure that development can meet the objectives and outcomes of the WMO. These requirements address *wildfire risk* only. There may be other controls in the planning scheme which also require a permit.

Before lodging a permit application you should check with your local council which other controls apply.

Some other types of buildings in WMO also require a permit. The kit is written for those wishing to build or extend a house, however the kit site assessment tools may assist for other types of buildings.

What permits will you need?

To build a house in a WMO, you will need a planning permit and a building permit.

How to use this kit

This kit takes you through the steps of applying for a planning permit in an area covered by a WMO.

The kit provides instructions and a self guided process which will help you:

- assess the wildfire risk
- choose the most appropriate house site
- choose management actions to address wildfire risk by either
 - selecting from a set of standard permit conditions which in less complex situations meet the requirements of WMO, or
 - developing an alternative solution where the standard permit conditions cannot be implemented due to site constraints, or are not acceptable to the applicant or the council

The kit contains a *WMO Declaration Form* which you will need to detach and include with other documents required by your council for your planning permit application. Keep your copy of the kit and a copy of your permit as a handy record of your wildfire risk assessment and permit condition requirements.

Three options to obtain a planning permit in WMO

The option that is appropriate for your situation will depend on the features of your land, the risk of wildfire, and what types of other land management constraints that may apply. The information required to assess a permit application is different for each.

Option One and Option Two will apply to development situations which are relatively simple. The requirements for both options are set out in standard permit conditions.

You must be able to meet these conditions for either option to be available to you.

Option Three is provided for applicants who are unable to meet standard permit conditions and/or who wish to demonstrate an alternative means of meeting the fire protection requirements of WMO.

Which Option applies to me?

Before you decide which option applies to you, the first and most critical step is to decide on the best site for your house. Refer to *How to: Choose a house site* on page 3.

To establish which Option is best suited to your situation, follow these two steps:

1. Determine the vegetation type.

The pictures on page 5-8 will help you establish the vegetation type in your area. If the predominant vegetation within 100 metres of your proposed house is cultivated gardens, grassland with minimal trees, low forest or woodland, go to *Requirements for Option One* on page 10. If the vegetation around your property is shrub and heath, medium forest or tall forest, go to *Requirements for Option Two* on page 12.

2. Consider the standard permit conditions and choose option 1, 2 or 3.

If you are able to meet the standard permit conditions for Option One or Option Two, proceed with your application by completing the appropriate forms and submitting the documentation as requested by your council. If the standard conditions are not appropriate for your site, or you cannot agree with these, go to *Requirements for Option Three* as shown on page 18. Refer to Figure 1 *Which Option applies to me?*

Expert Advice for Difficult Sites

There are some situations where the constraints and risks are beyond the scope of the standard permit conditions. In these circumstances you will be required to design an alternative solution.

The design and documentation of an alternative solution for Option Three will involve the preparation of a statement and this may need to include design detail of a standard which will require the services of a suitably qualified consultant.

Before you engage a consultant, contact your CFA Area office to discuss your situation. Refer to page 25 for *Helpful Hints and Contacts*.

NOTE

House Ignition

Houses ignite in wildfire from:

- Direct flame contact
- Heat radiating from the fire
- Embers landing on or in the building

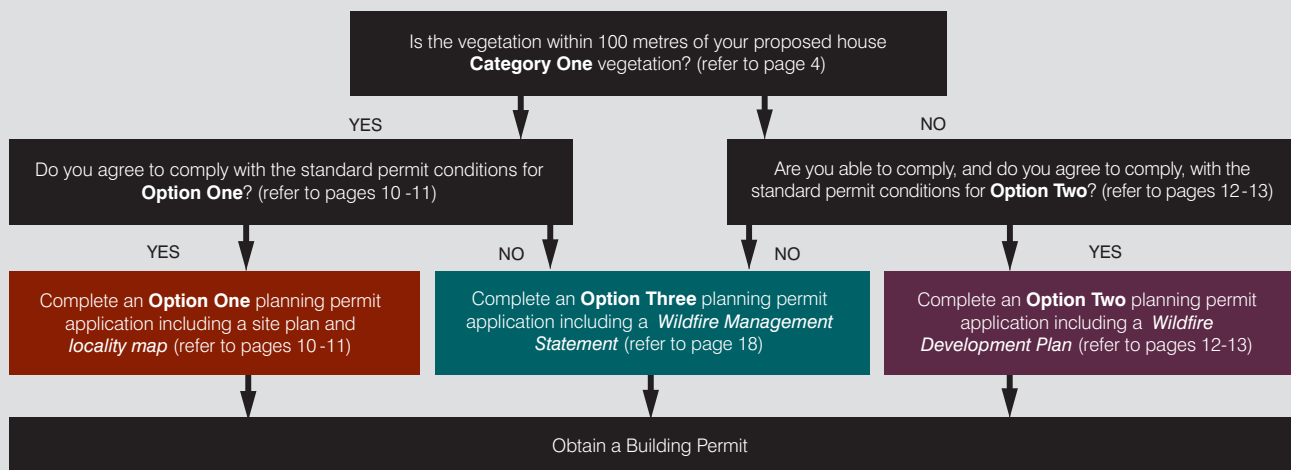
Vegetation management helps by reducing the incidence and intensity of each.

Wildfire Risk

There are three physical elements to wildfire risk

- vegetation (fuel)
- topography
- weather

Figure 1. Which option applies to me?



Obtaining a building permit

You may apply for a building permit at the same time as you seek a planning permit. The application may be made to any registered building surveyor. However, the building surveyor must not issue the building permit until the planning permit has been issued. The planning permit should include a note which states the category of bushfire attack which will determine the relevant building construction standards for wildfire. If the note is not included in the permit, the building surveyor will determine the category of bushfire attack.

The building permit must be consistent with the planning permit.

The site assessment in this kit meets the requirements of a Bushfire Prone Area and a separate site assessment should not be required to obtain a building permit for the purposes of regulation 804 of the Building Regulations 2006.

How to: Choose a house site

The location of houses on larger blocks in rural or urban bushland interface areas can have a significant bearing on safety in wildfires. The objective is to locate the house site where the wildfire will be less intense. Before you can determine what wildfire management actions are appropriate for your development, you must reduce the wildfire risk as much as you can by choosing the house site carefully.

Wildfire risk varies depending on the slope and vegetation characteristics.

Here are some principles to help you select a suitable house site.

Vegetation

- Locate a house in cleared areas instead of patches of bush
- If you cannot locate a dwelling where there is no bush, choose a site where the bush is less dense or where it has been disturbed by previous development or land use
- Take advantage of existing low fuel load areas such as roads, fuel breaks, or water bodies by locating the house to the south and east of these features

Slope

- Avoid north or north-west facing slopes, particularly steep ones
- Avoid ridge tops, particularly saddles
- Utilise flat or near flat sites
- If no flat sites are available, locate house at the base of, or on, gentle south facing slopes
- If building near a ridge locate the house on the east or south easterly side of the ridge

- If building on a slope build the house on a slab bench rather than have it perched on stilts
- Flat or gently sloping sites are easier to implement wildfire management actions

Note for Removal of Native Vegetation

The principles for siting a house to reduce wildfire risk may also assist you to meet the requirements for the planning scheme controls that protect native vegetation.

All planning schemes contain native vegetation provisions in Clause 52.17*, and may have other environmental controls such as Significant Landscapes and Environmental Significance overlays.

When considering proposals that involve native vegetation removal a council must have regard to the Three Step Approach of Victoria's *Native Vegetation Management – A Framework of Action*. The steps are:

1. Avoid adverse impact, particularly through vegetation removal
2. If impacts cannot be avoided, **minimise** impacts through appropriate planning and design
3. Identify appropriate **offsets** for the impacts

To meet the requirements of WMO and other environmental overlays you may need to assess a number of alternative house sites so that you can demonstrate how you have applied the Three Step Approach.

* Copies of Clause 52.17 can be obtained from your council or downloaded from the DSE website www.dse.vic.gov.au

Identifying the Vegetation

Types of vegetation

The type of vegetation around your property is critical to determining the wildfire risk, the precautions you need to take when building your house, and the appropriate option to follow when making your planning permit application.

You will need to assess the vegetation type correctly because this will also determine the level of construction required for your building permit.

Use the following descriptions and diagrams to determine the vegetation type on and around your land. The photographs on pages 5-8 provide examples of vegetation which can be used to help understand the descriptions.

Category One vegetation - lower risk areas

Lower risk sites are those where the natural vegetation has low levels of fuel, or where the vegetation is altered from a natural state and managed so that there are low levels of fuel.

The kit has four classifications of lower risk vegetation.

Cultivated garden

- Highly managed urban or horticultural areas.
- Typically these feature exotic and native vegetation in garden beds separated by open spaces of grass

Grassland with minimal trees

- Include areas of grazed paddocks, with or without occasional trees
- Commonly rural residential areas, hobby farms or broad acre grazing properties

Low forest

- Tree heights less than 10 metres and canopy cover greater than 30 per cent
- Commonly found on sites of poor, rocky or sandy soils, lower rainfall, or areas exposed to extreme weather such as mountainous ridges or coastal areas

Woodland

- Canopy cover of the trees is less than 30 per cent, regardless of the height of the tree
- There will be distinct spaces between the crowns of trees

If the predominant vegetation within 100 metres of your proposed dwelling is one or more of the above, proceed with *Requirements for Option One* on page 10.

Note if the Low forest or Woodland has a continuous cover of shrub or heath (refer to Category Two vegetation, Shrub and Heath, page 7) under the canopy, the vegetation type will be classified as Shrub and Heath.

Cultivated garden (any tree height)

Vegetation Examples



A



B

Example A

- residential subdivisions of small size house lots
- cultivated gardens with mown or slashed grassed areas
- scattered eucalypts, which are usually mature remnants of the original forest
- no regeneration of the forest
- access by constructed roads and paths

Example B

- rural, township or bushland setting with larger residential lots
- cultivated gardens with mown or slashed grassed areas
- scattered eucalypts, which are usually mature remnants of the original forest
- no regeneration of the forest
- access by constructed roads (sealed and unsealed)

Grassland with minimal trees (any tree height)

Vegetation Examples



A



B

Example A

- isolated, scattered or clumped eucalypts, usually mature remnants of the original forest
- open grassy paddocks with grazing and/or slashing
- may have some regeneration of canopy or understorey trees which have been selectively retained
- easy to walk through in any direction

Example B

- isolated, scattered or clumped eucalypts, usually mature remnants of the original forest
- open grassy paddocks with grazing or cropping
- no regeneration of canopy trees
- easy to walk through in any direction

Low Forest (tree height 10 metres or less)

Vegetation Examples



Example A

- very few shrubs, mostly grasses and other tussock plants in the understorey
- moderate levels of leaf and twig litter
- moderately easy to walk through
- generally low rainfall, poor soils

Example B

- eucalypt canopy trees of usually multi-stem 'Mallee' habit
- very few shrubs, grasses and other plants in the understorey
- low to moderate levels of leaf and twig litter
- easy to walk through
- generally low rainfall, poor soils

Woodland (any tree height, canopy less than 30% cover)

Vegetation Examples



Example A

- highly modified remnant vegetation with extensive tree removal, no shrubs, and only occasional tussock plants
- intensively mown with no shrub or tree regeneration
- leaf and twig litter largely absent or mulched from frequent mowing or slashing
- easy to walk through 'park-like' setting
- generally moderate to high rainfall and deep soils

Example B

- sparse or patchy cover of shrubs, often spindly
- grass cover sparse and patchy to negligible
- low levels of leaf and twig litter separated by patches of bare earth
- easy to walk through
- generally low to moderate rainfall and poor soils

Category Two vegetation - higher risk areas

Higher risk sites are either located near or within areas of vegetation which can carry a high intensity fire. These areas have high fuel loads and the fuel is elevated and mostly continuous.

The kit has three classifications of higher risk vegetation.

Shrub and Heath

- generally shrubs less than three metres high, but ranging up to six metres
- most plants tend to be tough, wiry and scratchy with small leaves
- there may also be occasional trees but these are isolated
- commonly found in coastal areas or damp locations associated with waterways or in poorly drained areas

Medium Forest

- generally eucalypt trees 10 to 30 metres in height and a canopy cover greater than 30 per cent
- commonly with stringy bark, peppermint and box bark eucalypts
- may have a shrubby or grassy understorey
- common vegetation type in fertile valleys, foothills and mountain areas

Tall Forest

- Eucalypt trees 30 metres high or more, and canopy cover greater than 30 per cent
- may be stringy bark, peppermint or smooth gum bark eucalypts
- typically with small trees, and large shrubs and ferns in the understorey
- common in medium to high altitude areas, along waterways, or where there is high rainfall and/or well protected sites such as in gullies

If the predominant vegetation within 100 metres of your proposed house is one of these vegetation types, go to *Requirements for Option Two* on page 12, or if the Option Two standard permit conditions cannot be met or you don't agree with them, go to *Requirements for Option Three* on page 18.

Shrub and Heath (no trees)

Vegetation Examples



Example A

- dense cover of mostly prickly shrubs which form the canopy
- may have some ferns and tussock plants underneath the canopy
- very difficult to walk through or impenetrable
- generally poorly drained (swampy) areas



Example B

- dense cover of mostly prickly shrubs which form the canopy
- may have some tussock plants in the understorey
- very difficult to walk through or impenetrable
- coastal areas on sandy soils



Example C

- dense patches of low prickly shrubs which may be separated by patches of tussock plants
- moderately difficult to walk through
- generally poor soils and/or poor drainage
- frequently on exposed sites

Medium Forest (tree height 10 - 30 metres, canopy greater than 30% cover)

Vegetation Examples



Example A

- scattered shrubs with grasses in between them
- easy to walk through
- high levels of leaf and twig litter
- generally poor, shallow soils

Example B

- dense, prickly shrub cover to 3 metres with some grasses
- high levels of leaf and twig litter
- difficult to walk through
- generally poor soils

Tall Forest (tree height 30 metres or more, canopy greater than 30% cover)

Vegetation Examples



Example A

- small trees and tall shrubs in the understorey, often with tree ferns and large tussock plants (sedges)
- creepers and grasses climbing in the large shrubs and small trees
- high levels of leaf, twig and loose bark litter
- difficult to walk through
- high rainfall, deep soils

Example B

- small trees and tall shrubs forming a dense understorey
- sometimes with ferns, but usually with grasses, sedges and other tussock plants
- high levels of leaf and twig litter
- difficult to walk through
- generally moderate to high rainfall, deep soils

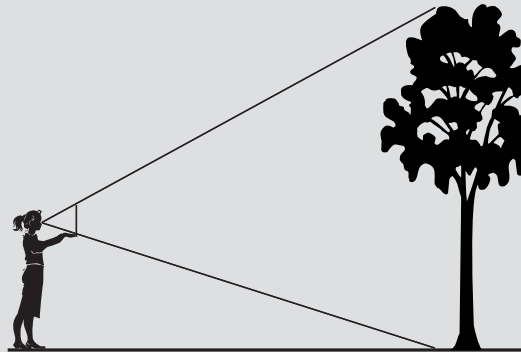
How to: Estimate tree height

There are a number of ways to estimate tree height, but one simple method is to get a person of a known height to stand against the base of the tree and with the second person standing well back, estimate how many times that person could be stacked on top of themselves to reach the treetop.

Alternatively, you could take a photo of the person standing against the base of the tree and use that picture to calculate the height.

Another method of estimating tree height involves holding a stick, ruler or pencil at arm's length. Walk backwards until the top of your thumb sights the base of the tree and the top of the object you're holding sights the treetop. Keeping the top of your thumb in line with the base of the tree, rotate the object until it is horizontal and lined up with a point on the ground.

Measure from the base of the tree to the point where the rotated object appears to meet the ground (this should be at right angles to your line of sight to the tree base and on flat ground). The distance measured will be equal to the tree height.



How to: Understand vegetation types and fuel arrangements

A useful way to understand the structure of vegetation types and the characteristics of fuels is to break these down into smaller parts as shown in Fig.2 opposite.

Vegetation

The tallest part of natural vegetation is referred to as the **canopy**. In most vegetation types the canopy will be formed by the upper foliage of trees. In most cases the trees are Eucalypt species. Sometimes there are no trees, in which case the canopy is made up of shrubs.

The canopy is also called the **overstorey**. The vegetation below the overstorey is sometimes referred to as the **understorey**. The understorey is made up of lower layers of vegetation. There is a ground layer which comprises leaf litter, wildflowers, grasses and other tufting plants ranging from a few centimetres up to 2 metres. In most vegetation types there also a shrub layer. The shrub layer ranges from patchy to dense, and may be very low (1 metre or less) or up to 15 metres or more with small trees.

The kit uses two classifications for canopy cover - woodland and forest. Refer to Fig.3 which shows the canopy cover looking down from above.

Fuels

Fuels are anything that can burn in a wildfire. As a wildfire front passes along the ground it consumes fine fuel. Fine fuel is foliage material, dead or alive, which is less than 6mm thick. The less fine fuel, the lower intensity of the fire front. Fine fuels are present as leaf litter (surface fuels) or elevated above the surface such as shrubs and creepers. If the fuels are elevated the flames will be higher. Sometimes there may be sufficient elevated fuel for the fire to reach the canopy. In such circumstances a crown fire may develop. The intensity of a crown fire is very high.

Reducing elevated fuels is one way to reduce the likelihood of a crown fire developing and maintaining itself. If there are large gaps between trees a crown fire cannot develop because the fuel is not continuous.

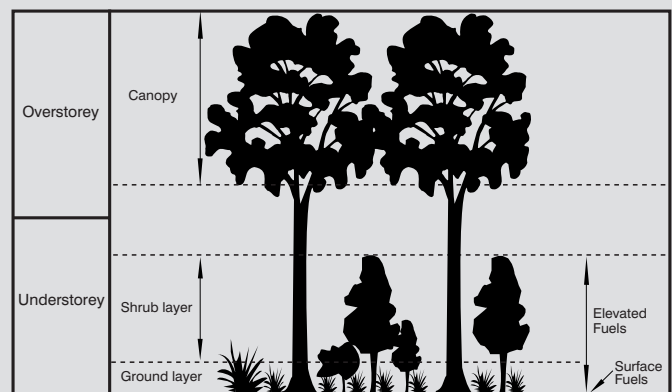


Figure 2. Vegetation structure and fuel arrangements

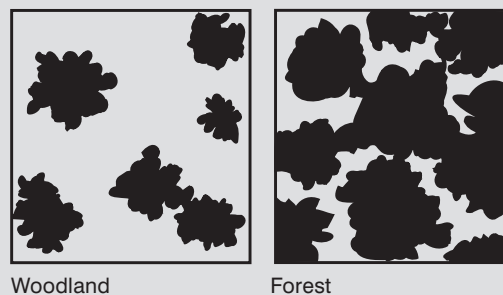


Figure 3. Woodland and forest canopy cover viewed from above

Requirements for Option One

Building in a Wildfire Management Overlay

Is the vegetation type within 100 metres of your proposed building Category One vegetation - low risk?

Can you meet the standard permit conditions on your land for Option One, as set out on pages 10 -11?

If you answer 'yes' to the above two questions, follow the four steps below to complete a WMO Option One response for your planning application.

Follow four steps to meet the requirements for Option One

1. Complete the WMO Declaration Form on page 23
2. Sign the declaration form that you agree to the standard permit conditions
3. Obtain a planning permit application form from your council and complete it, making sure that you have answered all the questions
4. Submit the WMO Declaration Form, site plan, locality map, with the planning application form and other documentation your council requires, to your council

Standard permit conditions for Option One

1. Water supply

A static water supply, such as a tank, must be provided unless there is a hydrant connected to a reticulated water supply within 120 metres of the rear of the dwelling.

A static water supply (if required) must meet the following requirements:

- A minimum of 10,000 litres on-site static storage must be provided on the lot and be maintained solely for fire fighting
- The water supply must be located within 60 metres of the dwelling
- Fire brigade vehicles must be able to get to within 4 metres of the water supply outlet
- The water supply should be readily identifiable from the building, or appropriate signage (see Fig.4) must point to the water supply

All below-ground water pipelines must be installed to the following depths:

- subject to vehicle traffic: 300 mm
- under houses or concrete slabs: 75 mm
- all other locations: 225 mm

All fixed above-ground water pipelines and fittings, including water supply, must be constructed of non-corrosive and non-combustible materials, or protected from the effects of radiant heat and flame.

If the static water supply is above ground, the following additional standards apply:

- All above-ground static water supply must provide at least one 64 mm, 3 thread/25 mm x 50 mm nominal bore British Standard Pipe (BSP), round male coupling (see Fig. 5)
- All pipe work and valving between the water supply and the outlet must be no less than 50 mm nominal bore
- If less than 20 metres from the building, each outlet must face away from the building to allow access during emergencies

NOTE

Compliance with Permit Conditions

Remember wildfire can occur any year and compliance with permit conditions is ongoing. It is your responsibility to ensure that the works required by the permit are done.

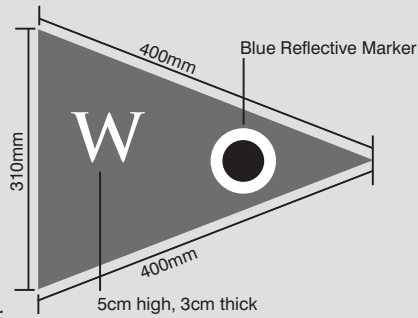


Figure 4.

2. Access requirements

Access to the dwelling must be designed to allow emergency vehicle access. The minimum design requirements are as follows:

- Curves in driveway must have a minimum inner radius of 10 metres
- The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres
- Dips must have no more than a 1 in 8 (12.5%) (7.1°) entry and exit angle

If the driveway from the road to the dwelling and water supply, including gates, bridges and culverts, is greater than 30m long, the driveway:

- must be designed, constructed and maintained for a load limit of at least 15 tonnes, be of all weather construction; and

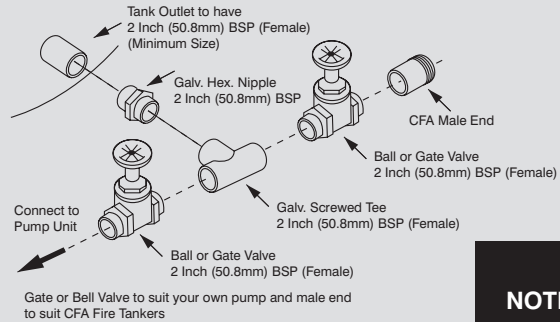


Figure 5.

NOTE

Tank Fittings

CFA trucks use a special fitting to connect to a water supply. Installing a 'T' pipe on your tank outlet provides you with one branch for your own fire fighting systems, and one on the other side for CFA use.

- must provide a minimum trafficable width of 3.5 metres, and be clear of encroachments 4 metres vertically (see Fig. 6).

If the driveway is longer than 100 metres, a turning area for fire fighting vehicles close to the dwelling must be provided, by either:

- a turning circle with a minimum radius of 8 metres; or
- the driveway encircling the dwelling; or
- a T head or Y head with a minimum formed surface of each leg being 8 metres in length measured from the centre point of the head, and 4 metres trafficable width (see Fig. 7)

If the length of the driveway is greater than 200 metres, passing bays must be provided. Passing bays must be 20 metres long and must be provided every 200 metres, with a trafficable width of 6 metres (see Fig. 8).

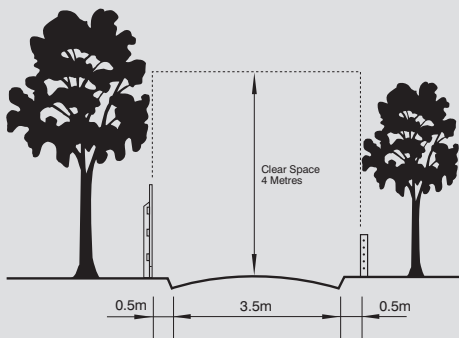


Figure 6.

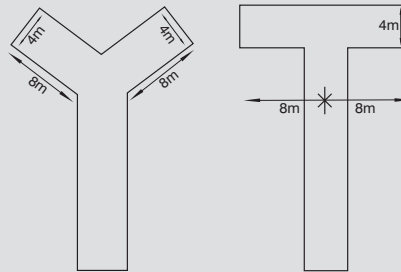


Figure 7.

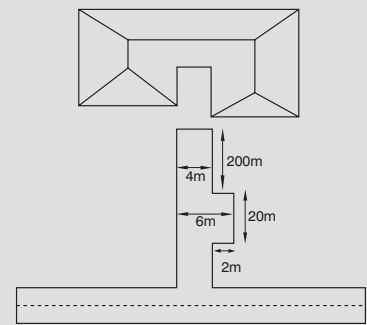


Figure 8.

3. Vegetation management

A distance of 30 metres around the proposed dwelling, or the distance to the property boundary (whichever is the lesser) must be maintained to the following requirements during the declared Fire Danger Period to the satisfaction of the responsible authority:

- Grass must be no more than 100 mm in height
- Leaf litter must be less than 10 mm deep

- There must be no elevated fuel on at least 50 per cent of the area. On the remaining 50 per cent, the elevated fuel must be at most, sparse, with very little dead material.
- Dry shrubs must be isolated in small clumps more than 10 metres from the dwelling
- Trees must not overhang the roofline of the dwelling

4. Permit note for category of bushfire attack for buildings in Option One

Note for low category of bushfire attack

The land is in a bushfire prone area designated under regulation 804 of the Building Regulations 2006. Grassland with minimal trees or cultivated gardens is the predominant vegetation within 100 metres of the proposed dwelling, which corresponds to a low category of bushfire attack under AS 3959.

Note for medium category of bushfire attack

The land is in a bushfire prone area designated under regulation 804 of the Building Regulations 2006. Low forest or woodland is the predominant vegetation within 100 metres of the proposed dwelling, which corresponds to a medium category of bushfire attack under AS 3959.

NOTE

What is the Permit Note for bushfire attack?

Your planning permit will include a note for the *Category of Bushfire Attack* which will be used to determine the construction level for the building permit.

Requirements for Option Two

Building in a Wildfire Management Overlay

Can you meet the standard conditions of Option Two on your land as set out on pages 12-13?

If you answer 'yes', follow the five steps below to complete an Option Two response for your planning permit application.

If you answer 'no', go to page 18 to complete an Option Three response for your planning permit application.

Follow five steps to meet the requirements for Option Two

1. Prepare a locality map
2. Carry out a detailed site assessment
 - a. determine the vegetation type for two risk assessment zones
 - b. assess the slope for each zone
 - c. calculate the outer vegetation management distance for each zone
 - d. calculate the defendable total space for each zone
3. Prepare a Wildfire Development Plan
4. Complete and submit your planning application by:
 - a. completing the WMO Declaration Form on page 23 of the kit
 - b. signing the declaration stating the you agree to the standard permit conditions (please note that additional permit conditions may be required by your council)
 - c. obtain a planning permit application form from your council and complete it, making sure that you have answered all the questions
5. Submit the WMO Declaration Form, Wildfire Development Plan, locality map, with the council planning permit application form and other documents to your local council

Standard permit conditions for Option Two

1. Water supply

A static water supply, such as a tank, must be provided.

A static water supply must meet the following requirements:

- A minimum of 10,000 litres on-site static storage must be provided on the lot and be maintained solely for fire fighting
- The water supply must be located within 60 metres of the dwelling
- Fire brigade vehicles must be able to get to within 4 metres of the water supply outlet as indicated on the wildfire development plan
- The water supply should be readily identifiable from the building, or appropriate signage (Fig. 9) must point to water supply

All below-ground water pipelines must be installed to the following depths:

- subject to vehicle traffic: 300 mm

- under houses or concrete slabs: 75 mm
- all other locations: 225 mm

All fixed above-ground water pipelines and fittings, including water supply, must be constructed of non-corrosive and non-combustible materials, or protected from the effects of radiant heat and flame.

If the static water supply is above ground, the following additional standards apply.

- All above-ground static water supply must provide at least one 64 mm, 3 thread/25 mm x 50 mm nominal bore British Standard Pipe (BSP), round male coupling (see Fig.10)
- All pipe work and valving between the water supply and the outlet must be no less than 50 mm nominal bore
- If less than 20 metres from the building, each outlet must face away from the building to allow access during emergencies

NOTE

Where is the property boundary?

If you cannot achieve the required Option Two vegetation management within your property boundary, you will need to use Option Three.

Your detailed site assessment will show if you are in this situation.

NOTE

Compliance with Permit Conditions

Remember wildfire can occur any year and compliance with permit conditions is ongoing. It is your responsibility to ensure that the works required by the permit are done.

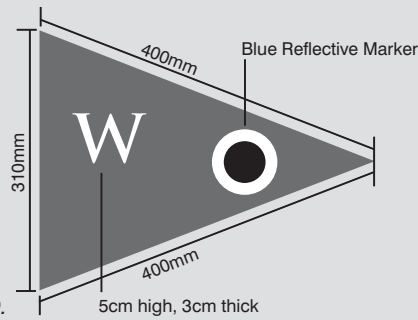


Figure 9.

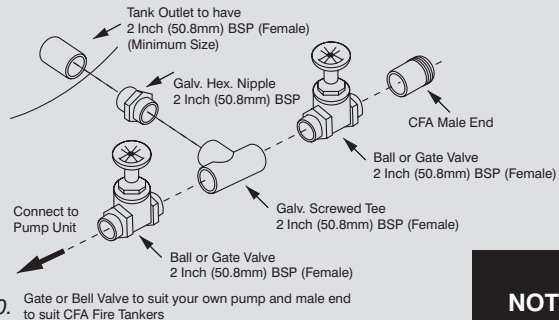


Figure 10.

2. Access requirements

Access to the dwelling must be designed to allow emergency vehicle access. The minimum design requirements are as follows:

- Curves in driveway must have a minimum inner radius of 10 metres
- The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres
- Dips must have no more than a 1 in 8 (12.5%) (7.1°) entry and exit angle

If the driveway from the road to the dwelling and water supply, including gates, bridges and culverts, is greater than 30m long, the driveway:

- must be designed, constructed and maintained for a load limit of at least 15 tonnes, be of all weather construction; and

- must provide a minimum trafficable width of 3.5 metres, and be clear of encroachments 4 metres vertically (see Fig. 11)

If the driveway is longer than 100 metres, a turning area for fire fighting vehicles close to the dwelling must be provided, by either:

- a turning circle with a minimum radius of 8 metres; or
- the driveway encircling the dwelling; or
- a T head or Y head with a minimum formed surface of each leg being 8 metres in length measured from the centre point of the head, and 4 metres trafficable width (see Fig. 12)

If the length of the driveway is greater than 200 metres, passing bays must be provided. Passing bays must be 20 metres long and must be provided every 200 metres, with a trafficable width of 6 metres (see Fig. 13).

NOTE

Tank Fittings

CFA trucks use a special fitting to connect to a water supply. Installing a 'Tee' pipe on your tank outlet provides you with one branch for your own fire fighting systems, and one on the other side for CFA access use.

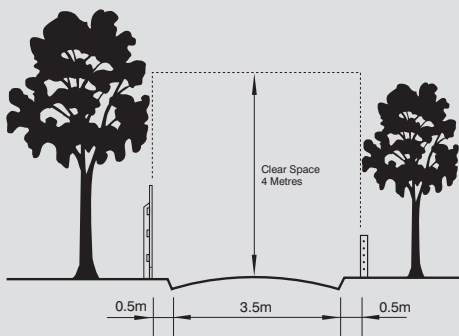


Figure 11.

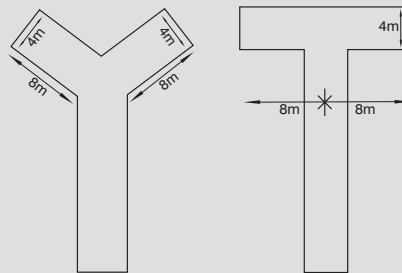


Figure 12.

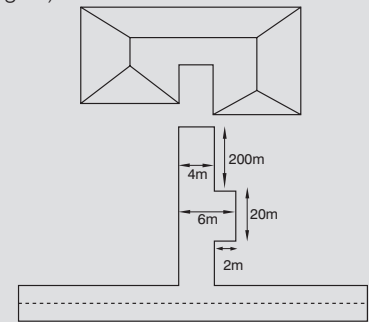


Figure 13.

3. Vegetation management

Option two requires different vegetation management strategies, focusing on the inner and outer zones of the property.

Inner zones:

A distance of 10 metres around the proposed dwelling must be maintained to the following requirements during the declared 'Fire Danger Period' to the satisfaction of the responsible authority:

- Grass must be no more than 100 mm in height
- Leaf litter must be less than 10 mm deep
- There must be no elevated fuel on at least 50% of the Inner zone. On the remaining 50% of the Inner zone, the elevated fuel must be at most sparse with very little dead material. Dry shrubs must be isolated in small clumps more than 10 metres away from the dwelling
- Trees must not overhang the roofline of the dwelling

Outer zones:

Vegetation in Outer zones, as specified in the Wildfire Development Plan, must be maintained to the following requirements during the declared Fire Danger Period to the satisfaction of the responsible authority:

- Grass must be no more than 100 mm in height
- Leaf litter must be less than 20 mm deep
- There must be no elevated fuel on at least 50% of the Outer Zone
- Clumps of dry shrubs shall be isolated from one another by at least 10 metres

Non-flammable features such as tennis courts, swimming pools, dams, patios, driveways or paths should be incorporated into the Wildfire Development Plan, especially on the north and western sides of the proposed building. Features with high flammability such as doormats and firewood stacks should not be located near the dwelling during the fire danger period.

NOTE

What is the Permit Note for bushfire attack?

Your planning permit will include a note for the *Category of Bushfire Attack* which will be used to determine the construction level for the building permit.

4. Permit note for category of bushfire attack for buildings in Option Two

Note for high category of bushfire attack

The land is in a bushfire prone area designated under section 804 of the Building Regulations 1994. Medium

forest, tall forest or shrub and heath is the predominant vegetation within 100 metres of the proposed dwelling, which corresponds to a High category of bushfire attack under AS 3959.

Detailed Site Assessment

How to: Carry out a detailed site assessment

The detailed site assessment in the kit uses two types of zones. One type is used for assessing the existing risk; the other is used to describe future vegetation management.

Risk Assessment Zones

Wildfire intensity is strongly influenced by climatic conditions. The lower the humidity and higher the temperature and wind speed, the more intense the fire. The other influences include fuel and topography.

In a wildfire prone area the most severe fires usually approach from the north-west under the influence of hot dry winds, or from a south-west approach under the influence of strong gushing winds associated with a change of weather. The northern and western aspects of a building require the most protection. The level of protection in the eastern zone generally does not need to be as great.

To make planning and site assessment easier these areas are referred to as zones as set out in the diagram below. The assessment is made for an area which is 100 metres from the proposed building. Refer to Fig.14.

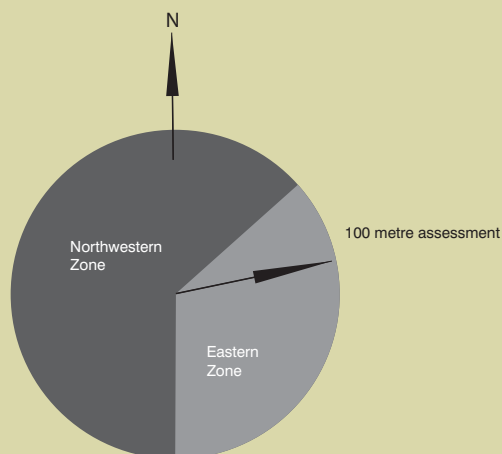


Figure 14. Risk assessment zones

Aspect also affects fire behaviour. A slope facing north and west will be warmer and drier than southerly and easterly aspects. This will influence the type of the vegetation growing, its dryness and fire frequency and intensity. In contrast, vegetation on southern and eastern aspects will tend to be lush and dry out less often.

The slope of the land plays a significant role in determining the rate of spread of a fire. The rate of spread of a fire increases significantly up a slope because it exposes the upcoming vegetation (grass, trees and shrubs) to

preheating and drying, allowing it to catch alight. A rough guide is that every 10° slope doubles the rate of spread and fire intensity. A downhill slope has the reverse effect. Therefore vegetation management is more important on steeper slopes and northerly and westerly aspects, as it will burn more readily and more often.

Vegetation Management Zones

The area closest to the building (*inner zone*) requires more intensive vegetation management than those in the *outer zone*. The inner zone is the same size regardless of your vegetation type or slope and is fixed at 10 metres.

The width of the outer zone will vary in accordance with your wildfire risk assessment which is a measure of **vegetation type** and **slope**.

The management actions for the inner and outer zones are different.

The purpose of the inner zone is to eliminate direct flame contact from the vegetation in the outer zone, and reduce radiant heat, fire intensity, and ember attack to a level where the house is unlikely to be ignited from passage of wild fire.

The purpose of the outer zone is to moderate the fire behaviour so that the inner zone vegetation management is effective.

Your total *defendable space* is the inner zone and the north-western and eastern outer zones combined. Refer to Fig.15.

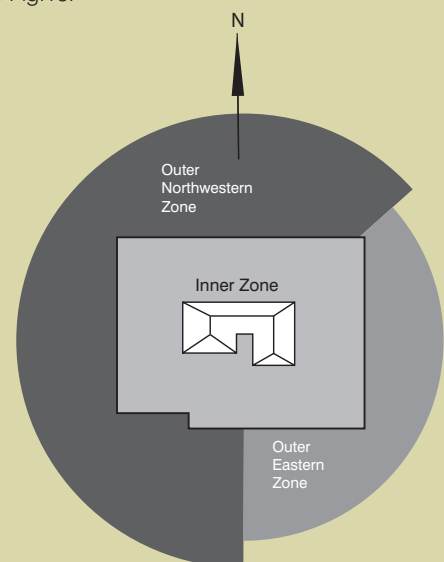


Figure 15. Vegetation management zones

How to: Prepare a locality map

A locality map is used to confirm which parcel of land is being assessed.

Topographic maps are a useful basis for a locality map because they show contours. Refer to Fig.16.

Topographic maps can be obtained from the Department of Sustainability and Environment (DSE) website, most Council planning departments, and many book stores or outdoor shops.

Remember to show the scale and north point on your plan.

Make a copy of the map and attach it to your documentation to complete your application for a planning permit.

DSE Website: www.dse.vic.gov.au

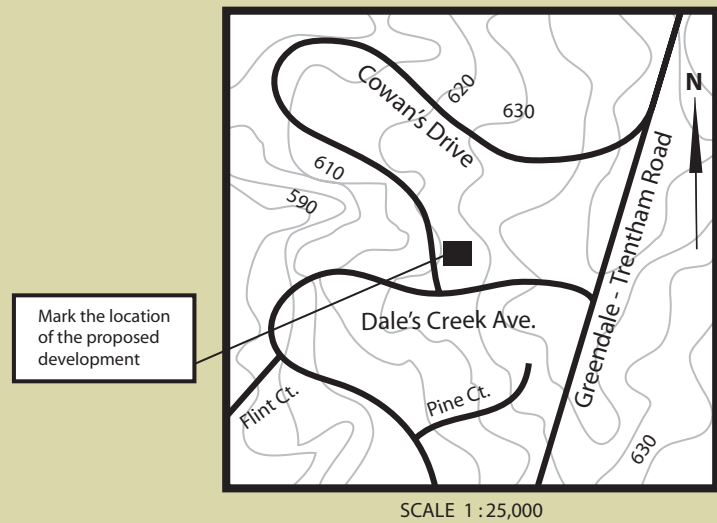


Figure 16. Locality map

How to: Assess the slope

The slope of the land is measured for the direction of the passage of a wildfire front approaching the house.

The direction of slope can be confusing. Make sure you refer to the diagram opposite (Fig.17).

The measurement is made for the average slope within 100 metres of the building envelope in both the north-western zone and eastern zone.

If the slope varies within the site, choose the slope which presents the highest wildfire risk to ensure that you have adequate levels of protection.

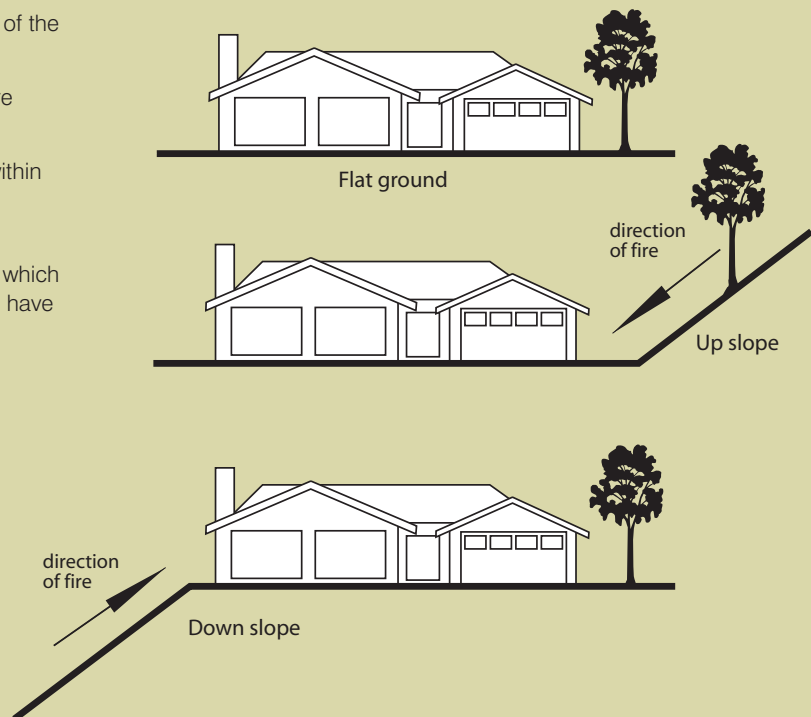


Figure 17. Slope assessment

Follow the four steps to complete a detailed site assessment

1. Determine the vegetation type in each assessment zone

Using the information on pages 4-9, assess the vegetation type within 100m of the proposed house in both the north-west and eastern zones, and record the results in the table below.

Fill in Vegetation Type

The vegetation in the North-western zone is:

- Cultivated gardens
- Grassland with minimal trees
- Low forest
- Woodland
- Medium forest
- Tall forest
- Shrub and heath

The vegetation in the Eastern zone is:

- Cultivated gardens
- Grassland with minimal trees
- Low forest
- Woodland
- Medium forest
- Tall forest
- Shrub and heath

2. Assess the slope in each assessment zone

Assess the slope of the land within 100 metres of the proposed house in both the north-western zone and the eastern zone and record it in the table below.

Is the land leading to the proposed house?

- flat ground
- up slope, (where land is higher than the house)
- down slope (land that is lower than the house)

Fill in the slope type

The slope in the North-western zone is:

- Flat ground
- Up slope
- Down slope

The slope in the Eastern zone is:

- Flat ground
- Up slope
- Down slope

3. Calculate the width of the outer vegetation zone

In Steps 1 and 2 you identified vegetation type and slope for the north-western and eastern zones surrounding your proposed house. The widths required for the outer vegetation management zones are related to both these factors. Use the following chart to calculate the width of the outer zones. Circle your results.

Vegetation Type	Up slope or flat ground		Down slope	
	North-western Outer zone (m)	Eastern Outer zone (m)	North-western Outer zone (m)	Eastern Outer zone (m)
Grassland with minimal trees*	20	20	20	20
Cultivated gardens*	20	20	20	20
Low forest*	20	20	20	20
Woodland*	20	20	20	20
Shrub and heath	70	30	70	35
Medium forest	50	20	80	40
Tall forest	70	30	85	40

4. Calculate the total defendable space

Fill in the vegetation management distances

	Inner zone width (m)		Outer zone width (m)		Total defendable space width (m)
North-western zone	10	+	<input type="text"/>	=	<input type="text"/>
Eastern zone	10	+	<input type="text"/>	=	<input type="text"/>

* Applicants with Category One vegetation in **both** the eastern and north-western zones will be required to manage vegetation to the property boundary, or to the distance in this table, whichever is less.

How to: Prepare a Wildfire Development Plan

The *Wildfire Development Plan* is a detailed plan of your proposal, showing how you will meet the WMO requirements for water supply, access, buildings, works and vegetation management.

The plan (refer to Fig.18) should be drawn to an appropriate scale and on standard sized paper (at least A4) and contain the following information:

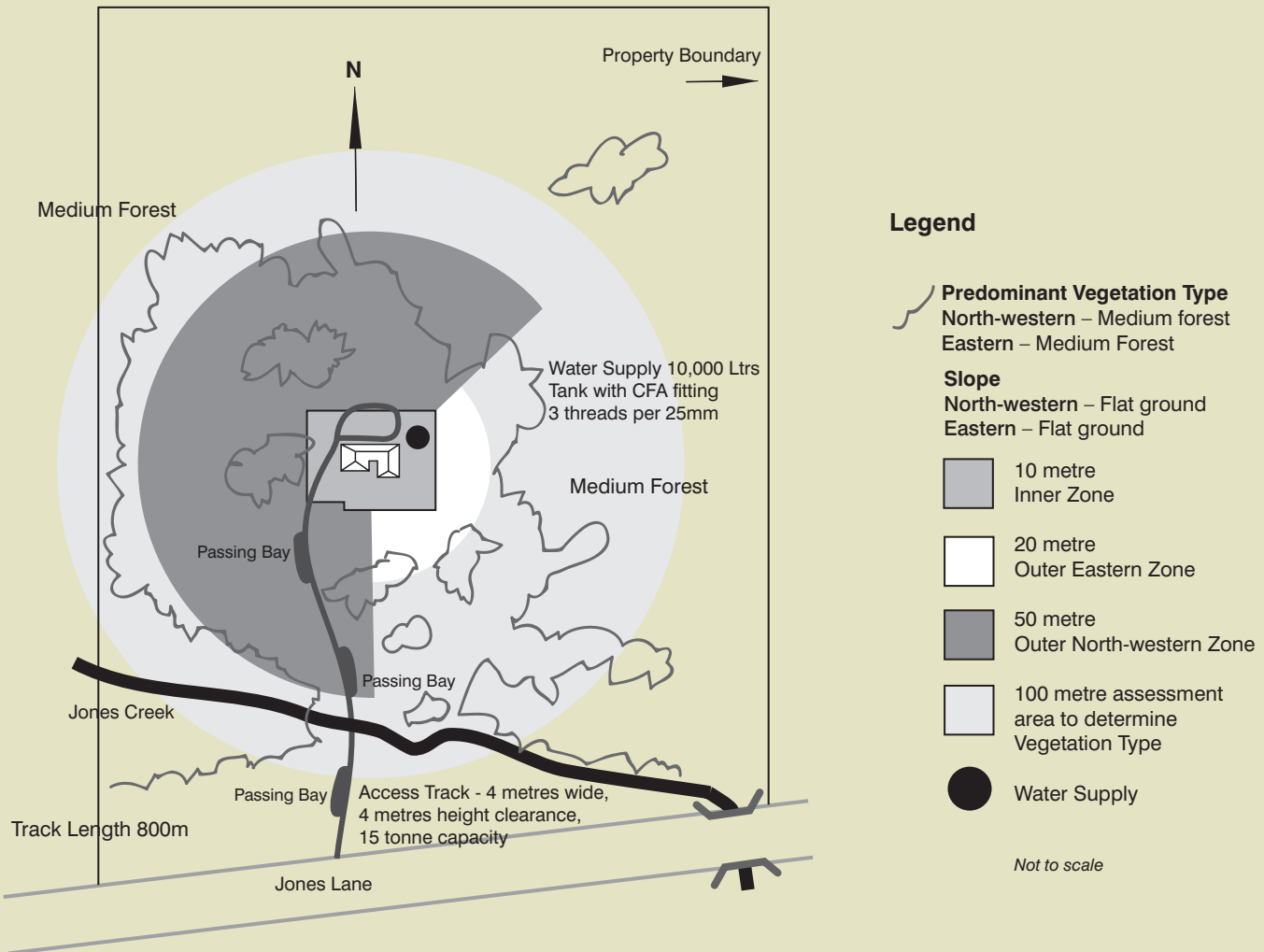
- Legend
- Mark the appropriate distances
- North point
- Location and type of water supply

- Access to building and water supply
- Type of vegetation for eastern and north-western zones as determined at Step 1, page 16
- Slope of the land as recorded in Step 2
- A 10 metre inner zone and outer zone as recorded in Step 4
- Any other relevant information

Don't forget to attach the *Wildfire Development Plan* to your planning permit documentation.

Figure 18. Example of a Wildfire Development Plan

Note your distances and vegetation management may differ from the example



Requirements for Option Three

Building in a Wildfire Management Overlay

If the standard conditions for Option One and Option Two do not suit your situation, you will need to prepare a statement demonstrating alternative means of addressing the requirements of the WMO.

The situations where this may arise include:

- You do not agree with the standard permit conditions in the kit and would like to pose alternative ways of meeting the objectives and outcomes of the WMO
- You have Category Two vegetation but do not have sufficient area on your land to achieve the vegetation management distances required by the standard conditions
- The land has significant environmental values such as native vegetation or a waterway which must be protected

The Option Three alternative solution will be referred by your council to CFA for assessment.

You may require a planning permit under other provisions in the planning scheme. If so, you will need to address other planning scheme requirements in your application. A single planning permit needs to be lodged with your council. As a consequence your application may contain a number of documents that are additional to the WMO requirements.

Follow five steps to meet the requirements for Option Three

1. Prepare a *locality* map
2. Undertake a detailed site assessment (refer to pages 14-16)
 - a. Determine the vegetation type for two risk zones
 - b. Assess the slope for each zone
 - c. Calculate the outer vegetation management distance for each zone
 - d. Calculate the defendable total space for each zone
3. Obtain a copy of Clause 44.06* of the planning scheme and prepare a *Wildfire Management Statement* that meets its policy objectives (for tips refer to *How to: Prepare a Wildfire Management Statement* on page 19)
4. Prepare a detailed site plan showing the location and design detail of the elements that make up your site specific alternative solution
5. Complete and submit your planning application by:
 - a. Completing your council planning permit application form
 - b. Obtaining a copy of the property title and any covenant or a Section 173 agreement under the Planning and Environment Act 1987 that affects your land
 - c. Submitting the *Wildfire Management Statement*, locality map, with the appropriate documentation your council requires, attached to the council planning permit application form to your local council

* Copies of the Clause 44.06 can be obtained from your local council or downloaded at the DSE website www.dse.vic.gov.au

NOTE

Environmental overlays in the planning scheme

Your house site may also be within another environmental management overlay such as Vegetation Protection (VPO), Significant Landscape (SLO) or Environmental Significance (ESO).

Your planning permit application should demonstrate how the other environmental objectives have been integrated with WMO.

A property management plan or planning report, which includes your Wildfire Management Statement, can be used to demonstrate integration with other environmental objectives.

How to: Prepare a Wildfire Management Statement

The first step in developing an alternative solution is to determine the house location that has the lowest wildfire risk.

For guidance on siting a house refer to the principles in *How to: Choose a house site* on page 3.

The next step is to analyse the range of management, design and construction actions to further reduce the risk. Then select from these the ones that will satisfy all the objectives and outcomes of WMO as set out in Clause 44.06 and any other control of the planning scheme that applies to your land.

There will be a number of design elements in your alternative solution. The elements may include:

House location

- orientation
- proximity to existing low fuel areas or fuel breaks
- consolidation of defensible space with existing development or clustering of new developments

House construction and design

- roof shape
- cladding and roofing materials
- door and window furnishing materials
- glass type
- door and window shutters
- foundation type

Topography

- slope
- aspect
- excavation (benching)

Landscape

- radiant heat barriers (for example a stone wall)
- location of water features, paving, driveways to function as low fuel areas or fuel breaks
- location of shrubs and garden beds in relation to the dwelling

Preparing your Wildfire Management Statement

Your statement should address all the objectives and outcomes of WMO as set out in clause 44.06 of the planning scheme.

The statement should describe existing conditions including:

- topography
- vegetation type and cover
- waterways
- infrastructure (roads, power supply, water supply, fences, structures, etc)
- aerial photo

The statement should identify wildfire management actions under the headings of:

- siting
- water supply
- access
- buildings and works
- vegetation management

Each action should describe:

- what will be done
- when will it be done
- how it will be maintained (if required)

Actions for water supply access and vegetation management as described under the standard permit conditions for Option Two on page 12-13 may provide some assistance in developing your Wildfire Management Statement.

Professional Help

If you have identified design elements that may suit your situation, but are not sure if these satisfy the objectives of Clause 44.06, you may need to obtain professional assistance.

Refer to *Helpful Hints and Contacts* on page 25.

NOTE

Passive and Active Features

A passive design feature such as a radiant heat barrier is more reliable than an active one which requires the intervention of an occupant.

Window shutters and bushfire sprinkler system are examples of an active feature.

NOTE

Professional Help

Before engaging a consultant to assist with the preparation of a Wildfire Development Plan you should contact the CFA Area office to discuss your situation.

Making a Permit Application

How to: Complete a council planning permit application form

You must give full details of your proposal and attach as many supporting documents as possible. If you do not provide enough detail your council will ask for more information, and this will delay your application.

The Applicant:

- Give your full name or the name of your company
- Give your full postal address and your contact phone number

The Land:

- Give the street number, street name, town and postcode, together with the lot number and lodged plan number or other Title particulars
- Attach a location plan which includes:
 - The boundaries of the land and their measurements.
 - The street it faces, the nearest intersecting street and the distance from this street and the name of all streets on the plan.
 - The direction of north and the scale of the plan.

The Owner:

- Complete this section if the applicant is NOT the owner; otherwise indicate 'applicant'

The Proposal:

- Describe fully what you want to build, for example, dwelling or dwelling extension. Attach additional information if there is insufficient room
- Attach your location plan to show details of the proposed development and any existing buildings
- Briefly describe the current use of the land and any buildings

The cost of the development

- You must give the estimated cost of the development. This is used by council to assess the amount of any fee you may have to pay (this fee is set by regulation and is payable to the council. Check with the council to determine the correct fee)
- Development here refers to the buildings and works you intend to construct on the land

Planning permit application checklist

Have you:

- Included a list of all the documents and made enough copies of each? (the council will tell you how many copies)
- Completed the council planning permit application form, answering all the questions?
- Included payment to cover the application fee, if required?
- Attached a completed WMO Declaration Form, and a Wildfire Development Plan for Option Two, or Wildfire Management Statement for Option Three?
- Attached a copy of the title and any covenant or a Section 173 Agreement under the Planning and Environment Act 1987 that affects your land?
- Attached the site plan, locality map, photographs and other documents?

Now send the completed planning permit application form and all the documents to the council. You may wish to keep copies for your own records. Keep your copy of the kit handy for future reference.

NOTE

Information Requirements

It is an offence under the Planning and Environment Act 1987 to give false or misleading information.

You may receive a heavy fine and your permit may be cancelled

Definitions

Access

Driveway or track providing safe entry and exit to the building and water supply for both fire brigade vehicles and residents.

Australian Standard AS 3959:1999, Construction of buildings in Bushfire Prone Area

Requirements for the design and construction of buildings in 'bushfire prone areas' in order to improve their performance when subjected to burning debris, radiant heat or flame contact generated from a bushfire.

Building Permit

A legal document issued by a building surveyor which lists the conditions for the construction of building.

Bushfire attack

Attack by burning debris, radiant heat or flame generated by a bushfire which might result in ignition and subsequent destruction of a building.

Bushfire Prone Area

An area which has been formally designated, under Regulation 804 of the Building Regulations 2006 by council after consultation with CFA, and recognised as prone to bushfire attack. Buildings erected in these areas are subject to a building control which relates to the level of construction.

Category of Bushfire Attack

Category of bushfire attack is the bushfire risk associated with a specific site. There are four categories: Low, Medium, High and Extreme. All categories except 'Low' have specific construction requirements set out in the Building Control Act Volume 2.

Cultivated gardens

Cultivated gardens are highly managed horticultural areas typically with exotic and native vegetation in garden beds separated by open spaces of lawn.

Defendable space

Zones of managed vegetation surrounding the building. Depending on the type of vegetation in 'north-western zone' and 'eastern zone' the defendable space may be comprised of only an inner zone (Option One) or a combination of both an inner zone and an outer zone (Option Two). This provides an area of protection from radiant heat, direct flame contact and ember attack.

Eastern zone

See Fig. 14 on page 14. Land clockwise from the north east to the south.

Elevated fuel

Comprises shrub and suspended dead material but does not include bark or foliage of the tree canopy.

Embers

Burning wind-borne flying debris generated by wildfire (eg. glowing fragments of bark).

Fine fuel

Grasses, leaves, bark, twigs and dead foliage less than 6 mm in diameter that can be ignited and sustain a fire.

Fire danger period

Declared each year in Victoria for individual municipalities when conditions warrant restricting fires in the open. The period is generally October to May. Although not prohibited, fires in the open air are restricted during the Fire Danger Period.

Grassland with minimal trees

Where the predominant vegetation type is grasses, generally less than 1.2 metres in height, and also includes grazed paddocks with or without occasional trees. May be hobby farms, broad acre grazing properties or within residential developments.

Inner zone

See Fig. 15 on page 14. Area immediately around the building where fuel is maintained in a minimum condition. The Inner zone aims to:

- reduce radiant heat on the building through the reduction of fire intensity, to a level where the building is unlikely to be ignited during the passage of wildfire;
- eliminate direct flame contact on the building from the Outer zone and unmodified vegetation; and,
- reduce ember attack on the building by reducing the amount of potential fire brands.

Leaf litter

Dead leaves fallen from plants.

Locality map

A plan showing the property in relation to the surrounding area.

Low forest

Vegetation with tree heights less than 10 metres and canopy cover greater than 30%.

Medium forest

Generally 10 to 30 metres high commonly with Stringy Bark and Box Eucalypt with canopy cover greater than 30 per cent and a shrubby or grassy understorey.

North-western zone

See Fig. 14 on page 14. Land anticlockwise from the North east to the south relative to the building.

Outer zone

See Fig. 15 on page 14. Area around the building between the Inner zone and unmodified vegetation where fuel is managed to:

- moderate the fire behaviour in the unmanaged fuel;
- reduce radiant heat on the building through the reduction of fire intensity, to a level where the building is unlikely to be ignited during the passage of wildfire;
- eliminate direct flame contact on the building from the unmodified vegetation; and
- reduce ember attack on the building by reducing the amount of potential fire brands.

Overlay

Overlays affect subdivisions, buildings and works. They operate in addition to the planning scheme zone requirements and generally identify environmental, landscape, heritage, built form, and land and site management issues.

Planning permit

A legal document normally issued by a Council that lists the conditions under which you are able to undertake use and development.

Planning scheme

A statutory document which sets out objectives, policies and provisions relating to the use, development, and protection of land. Decision-making tools within the planning scheme includes zones and overlays, which implement strategies. Each municipality has its own 'local' section of the planning scheme.

Predominant vegetation type

The vegetation type, within the 100 metre assessment area, which presents the greatest wildfire risk. This may not correspond to the vegetation type that has the greatest cover by area.

Reticulated water supply

Piped water supplied by a water authority.

Site Plan

A plan showing the location of the proposed development site with relevant physical features and distances in relation to the property boundaries.

Shrub and heath

Generally dominated by shrubs, usually less than three metres high, but sometimes to six metres. Most plants tend to be tough, wiry and scratchy with small leaves and are frequently multi-stemmed. There may be occasional trees.

Spotting

The ignition of spot fires from burning sparks or embers generated from a wildfire.

Statement demonstrating alternative means of addressing fire protection requirements

Information required to be submitted under the WMO (Clause 44.06 in the planning scheme).

Static water supply

A water supply stored on your property.

Tall forest

Usually (Eucalypt) trees 30 metres or more tall, typically with ferns underneath with canopy cover of 30 per cent or more.

Topographic map

A map with contour levels displaying height of land above sea level.

Unmodified vegetation

All vegetation before modification or works undertaken.

Water supply

A supply of water sufficient for landholders and emergency services to protect a building from wildfire.

Wildfire

A generic term used to describe any unplanned fire occurring in grass, forest or scrub.

Wildfire risk

The probability that the house will be damaged or destroyed by a wildfire.

Wildfire Development Plan

A detailed plan of your property which shows how you will satisfy the WMO requirements for water supply, access, buildings and works.

Wildfire Management Overlay

A tool in planning schemes used to identify areas where the fire intensity level is significant and likely to pose a threat to life and property. It sets out requirements for the development of land.

Wildfire Management Statement

A statement that provides the detail of the site specific designed response that will meet the objectives and outcomes of Clause 44.06 of the planning scheme.

Woodland

Vegetation where the canopy cover of the trees is less than 30 per cent with trees at any height. Distinct spaces between crowns of trees.

Zone

A tool in a planning scheme to control land use and development. Each zone includes a description of its purpose and the requirements that apply regarding land use, subdivision and the construction and carrying out of buildings and works.

WMO Declaration Form

<p>Option One</p> <p>Standard conditions planning permit application</p>	<p>The predominant vegetation within 100 metres of the proposed development is Category One vegetation - lower risk <input type="checkbox"/></p> <p>The vegetation type is:</p> <p><input type="checkbox"/> Cultivated garden</p> <p><input type="checkbox"/> Grassland</p> <p><input type="checkbox"/> Woodland</p> <p><input type="checkbox"/> Low Forest</p> <p>I understand and agree to the standard permit conditions for Option One on page 10 -11 of the CFA Building in a Wildfire Management Overlay Applicant's Kit 2007 <input type="checkbox"/></p> <p>I have included a site plan and locality map in my application <input type="checkbox"/></p>
<p>Option Two</p> <p>Standard conditions planning permit application</p>	<p>The predominant vegetation within 100 metres of the proposed house is Category Two vegetation - higher risk <input type="checkbox"/></p> <p>The vegetation type is:</p> <p><input type="checkbox"/> Shrub and heath</p> <p><input type="checkbox"/> Medium Forest</p> <p><input type="checkbox"/> Tall Forest</p> <p>I understand and agree to the standard permit conditions for Option Two on pages 12-13 of the CFA Building in a Wildfire Management Overlay Applicants Kit 2007, AND <input type="checkbox"/></p> <p>I have provided a Wildfire Development Plan in accordance with the requirements of CFA Building in a Wildfire Management Overlay Applicant's Kit 2007, on page 17. <input type="checkbox"/></p>
<p>Option Three</p> <p>Alternative solution planning permit application</p>	<p>The predominant vegetation type within 100 metres of the proposed house site is:</p> <p><input type="checkbox"/> Cultivated garden</p> <p><input type="checkbox"/> Grassland</p> <p><input type="checkbox"/> Woodland</p> <p><input type="checkbox"/> Low Forest</p> <p><input type="checkbox"/> Shrub and heath</p> <p><input type="checkbox"/> Medium Forest</p> <p><input type="checkbox"/> Tall Forest</p> <p>I have provided a Wildfire Management Statement in accordance with the requirements for Option Three of the CFA Building in a Wildfire Management Overlay Applicant's Kit 2007 on pages 18 -19. <input type="checkbox"/></p>

DECLARATION

I/we declare that:

- the above information is true

Name(s) _____

Signature (s) _____

Date _____

Contact details: _____

Helpful Hints and Contacts

Bushfire Survival Plan

Even a well planned and carefully constructed home may be vulnerable to wildfire. The survival of houses during wildfire is also reliant on the preparedness and the capacity of residents to actively defend their home. CFA recommends that residents develop a written plan that identifies actions they will take on high fire risk days. A bushfire survival plan lift out guide is available in CFA Living in the Bush workbook. Contact CFA to obtain a copy or phone the Victorian Bushfire Information Line on 1800 240 667.

Helpful Documents:

- *Living in the Bush: Bushfire Survival Plan Workbook*, CFA, 2004.
- *Building in Bushfire Prone Areas 1993*, CSIRO and Standards Australia.
- *Bushfire: Recognise the Risk*, CFA.
- *Overall Fuel Hazard Guide*, 1999 Third Edition. Research Report No. 47, Department of Natural Resources and Environment.
- *Design and Siting Guidelines, Bushfire Protection for Rural Houses*, CFA and Ministry for Planning and Environment, 1990.
- *The Australian Bushfire Safety Guide*, Schauble J., 2004
- *Landscape and Building Design for Bushfire Areas*, Ramsay C., and Rudolph L., 2003
- *The Complete Bushfire Safety Book*, Webster J., 2000

Professional Help

For additional help in preparing an application for a planning permit in a Wildfire Management Overlay area, consider obtaining the services of a fire risk management consultant.

Consultants who can prepare a WMO site assessment and WMO planning permit application include such professions as town planners, fire engineers, architects, design consultants, ecological consultants or land surveyors.

CFA does not undertake site assessments on behalf of the applicant.

CFA Areas Contacts:

North West Area

45 Chapel Street
Bendigo VIC 3550
Phone: (03) 5430 2200
Fax: (03) 5442 2246

South West Area

Cnr Coleraine & Mt
Bainbridge Roads
Hamilton VIC 3300
Phone: (03) 5551 1500
Fax: (03) 5551 1582

Barwon Corangamite Area

61 Separation Street
North Geelong VIC 3215
Phone: (03) 5240 2700
Fax: (03) 5277 1515

Westernport Area

120-122 Princes Highway
Dandenong VIC 3175
Phone: (03) 9767 1800
Fax: (03) 9767 1880

Gippsland Area

Port of Sale Business Centre
Foster Street
Sale VIC 3850
Phone: (03) 5149 1000
Fax: (03) 5149 1083

North East Area

1 Ely Street
Wangaratta VIC 3677
Phone: (03) 5721 4122
Fax: (03) 5721 3497

Yarra Area

18-22 Lakeview Drive
Lilydale VIC 3140
Phone: (03) 8739 1300
Fax: (03) 8739 1382

Outer Metro Northwest

251 High Street
Melton VIC 3337
Phone: (03) 8746 1400
Fax: (03) 8746 1480

Midlands Wimmera Area

1120 Sturt Street
Ballarat VIC 3350
Phone: (03) 5329 5500
Fax: (03) 5329 5509

If you are not sure which CFA Area you are in, there is a handy map and list of contact details on the CFA website www.cfa.vic.gov.au



Building in a Wildfire Management Overlay

Applicant's Kit 2007