

PLANNING GUIDELINES FOR SUBDIVISIONS in bushfire-prone areas





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Introduction

Bushfires are part of the natural and built environment in Victoria, threatening lives and property every year. These losses can in part be avoided and the risk minimised by a number of preventative fire protection measures, including better land use planning.

These guidelines replace *Planning Conditions and Guidelines for Subdivisions CFA 1991* and should be used by developers, Responsible Authorities and consultants assessing subdivision applications in bushfire-prone areas. They will also be used by CFA to evaluate planning permit applications.

When utilised in the early stages of the subdivision design, adherence to these guidelines can avoid the need for impractical and expensive retro-fit fire mitigation measures.

The requirements for subdivision design outlined in these guidelines are only one planning tool available to reduce the risk and impact of bushfires. Other examples include Precinct Structure Plans, appropriate zoning of land, local planning policy and the formal recognition of bushfire risk in Municipal Strategic Statements within planning schemes.

Where do these guidelines apply?

While these guidelines apply to all subdivisions across Victoria outside the metropolitan fire district, it is important to recognise that bushfire risk is not limited to rural areas. Bushfires can occur in residential and peri-urban areas at the edge of townships as well as commercial, retail and industrial areas, and can also threaten metropolitan and provincial cities. For this reason these guidelines have been developed for use when assessing all subdivisions, whether they are in designated bushfire-prone areas or not. However, CFA will only utilise these guidelines for applications where they are relevant to the associated fire risk.

The major fire risk in most residential subdivisions is structure fires. CFA's *Requirements for Water Supplies and Access for Subdivisions in Residential Township 1 and 2 and Township Zones 2006* and

Preferred Requirements: Water Supplies and Access for Subdivisions in Rural Zones 2006 set out a number of requirements to help minimise this risk. The two publications should be used in conjunction with these guidelines and will be referred to as References 1 and 2.

Additional consideration is necessary in areas of high bushfire risk. These areas are generally identified in the planning scheme under the Wildfire Management Overlay (WMO) and are subject to fire risk assessments where planning controls specify compliance requirements. CFA has included *Additional Requirements for WMO areas* in these guidelines to ensure risk is appropriately addressed in these high-risk areas.



Figure 1. Bushfires can occur in residential areas.



Figure 2. Commercial and industrial areas can also be at risk of bushfire.

How to use this document

Each planning application is assessed on a case-by-case basis. A performance-based approach has been used in establishing these guidelines that allows for contextual considerations and flexibility in achieving the five sets of objectives as set out in this document.

The five objectives are

- consideration at the landscape scale
- road access requirements
- water requirements
- requirements for the location of lots and building envelopes
- vegetation requirements

Each objective has

- performance criteria that define the general standard that applications must achieve when measured against these objectives
- requirements that give examples of ways the objectives and performance criteria can be met.

Each objective also has *Additional Requirements for WMO areas, Information Requirements and Explanatory Notes* where necessary.

If a proposed subdivision is designed to meet these requirements, CFA is unlikely to object to the application.

While most applications will meet the requirements, CFA may approve an alternative solution if an applicant can demonstrate that the subdivision will achieve the objectives in other ways.

The onus is on the applicant to supply any extra information that will demonstrate that the application satisfies those requirements. If this is not provided with the initial application, there may be delays.



Figure 3. Providing a buffer between existing vegetation and a subdivision to reduce bushfire risk.

Statutory requirements

Planning scheme

The legislation and regulations controlling the process of subdivision within Victoria are contained within the *Subdivision Act 1988* and the *Planning and Environment Act 1987*.

The planning scheme of each council sets out when subdivision permit applications must be referred. Under clause 66 of the planning scheme, CFA is a Referral Authority for Wildfire Management Overlay applications (clause 44.06) and applications outside the metropolitan fire district that create a road that do not meet the requirements of the Fire Hydrants Objective under clause 56.09–3.

Planning and Environment Act 1987

As a referral authority under section 55 of the *Planning and Environment Act 1987*, CFA may

- object to the granting of a permit on specific grounds
- agree to the granting of a permit
- agree to the granting of a permit providing certain conditions are met
- request further information.

CFA may also provide comment on subdivision applications when they are referred under section 52 of the *Planning and Environment Act 1987*. The key difference between a sections 52 and 55 referral is that under section 52 the responsible authority is not mandated to follow CFA advice or include suggested conditions.

Subdivision Act 1988

A council's planning scheme or a planning permit requires a proposed subdivision to be sent to CFA as a Referral Authority prior to certification. Section 9 of the *Subdivision Act 1988* identifies the role and responsibilities of the referral authority. These include informing the Council within the prescribed statutory timeframe that it:

- consents to the plan, or
- requires specific alterations, or
- refuses consent.

If no response is received by council within the prescribed statutory timeframe, council, as the responsible authority, may assume consent.

General information requirements

For all subdivision applications CFA requires

- a planning permit application form
- the site address
- a location plan, including information about the site and surrounds
- all planning controls (zone, overlay) and any restrictive covenant information
- a development plan
- if located in a WMO, a detailed statement demonstrating assessment of fire risk and how fire protection measures are addressed
- a vegetation plan for any proposed revegetation works as part of the subdivision.

Consideration at the landscape scale

Objectives

All subdivisions are to be considered at the landscape scale. The location, design and layout of the subdivision must reduce the risk of bushfire through utilisation of protective features.

The design components of the subdivision, such as roads, public open space, lots, services and special facilities should be utilised to minimise the adverse impact of bushfire and reduce fire intensity. Subdivision design should take into account features affecting fire behaviour, such as slope and existing vegetation.

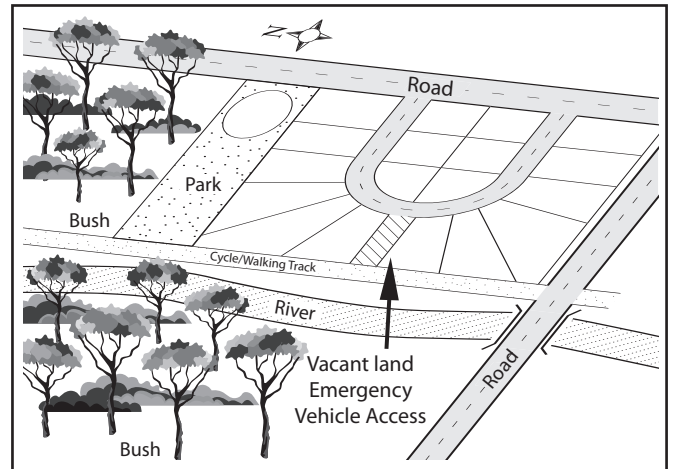


Figure 4. Consideration of protective features in the landscape.

Performance criteria	Requirements
Features of the topography are used to limit the spread of bushfire into the subdivision and within it.	Maximum use is made of areas with the potential to increase separation from bushfire risk and limit its spread, for example roads, water bodies and areas of reduced fuel such as parkland.
Components of the subdivision are used to limit the potential for carriage of a bushfire and to promote the ease of containment.	Design aspects of the subdivision incorporate barriers to the carriage of bushfire such as roads and public open space. These aspects should be utilised along the perimeter of the subdivision to maximise separation distance from bushfire risk, as well as within the subdivision to minimise spread. Facilities to aid suppression will be designed and located to protect lives and property.

Use of landscape features as protection

Certain natural and man-made features provide a measure of protection from bushfire and should be utilised when designing a subdivision.

Generally, any large area where there is little or no flammable fuel available during summer months will slow the progress of a bushfire. Such areas may include natural features such as rivers, creeks, lakes, wetlands, swamp and sand, as well as man-made features such as racecourses, highways, airstrips, golf courses and sports ovals. These could be within and outside a subdivision.

Additional requirements in WMO areas

Information on the characteristics of the site and its surrounds for a distance of 2 kilometres is required as part of the application, and must include information on the topography and vegetation, the availability of water, pre-subdivision access opportunities and the availability of firefighting services.

Vulnerable facilities also require identification, with a description of the potential use and development of land that could be affected by bushfire. The bushfire characteristics of the area must be analysed and the application must demonstrate how the location and design of the subdivision will achieve the objectives and outcomes specified in the WMO.

Information requirements

- Information on the characteristics of the site and its surrounds, including relevant local fire weather, the fuel characteristics of the environment and how these are likely to affect the safety of residents, visitors, firefighters and buildings are required
- The layout of the proposed facilities (such as public open space, vegetation reserves and access patterns) must be assessed in relation to the natural and man-made features of the locality. Justification of the layout must be included in the application.

Road access requirements

Objectives

The road network must provide connectivity so that firetrucks and equipment can effectively and efficiently gain access to all lots.

The road network must be safe for residents and visitors at all times. Roads must be designed to cater for the safe access and egress of firefighters, and for the operation of firefighting vehicles.

Note: The performance criteria and requirements cited below are proposed for larger scale subdivisions. A small scale subdivision, such as a two or three-lot subdivision, may be considered on its merits.

Performance criteria	Requirements
The road network enables multiple linkages to different roads within and external to the subdivision.	All subdivisions must have at least two different access options. Roads within the subdivision link to roads in adjacent subdivisions. Perimeter roads are encouraged. Dead-end roads and cul de sacs are discouraged.
The road network is capable of handling the volume of traffic in bushfire emergencies.	The capacity of the road network is likely to enable residents, visitors and emergency traffic to use the road network in bushfire emergencies with minimal conflicts and delay. Residents and visitors are unlikely to be trapped on impassable and congested roads during bushfires.
Roads are designed to allow access of a firetruck. Roads allow emergency vehicles and other vehicles to pass each other.	Roads meet design standards specified in References 1 and 2 .

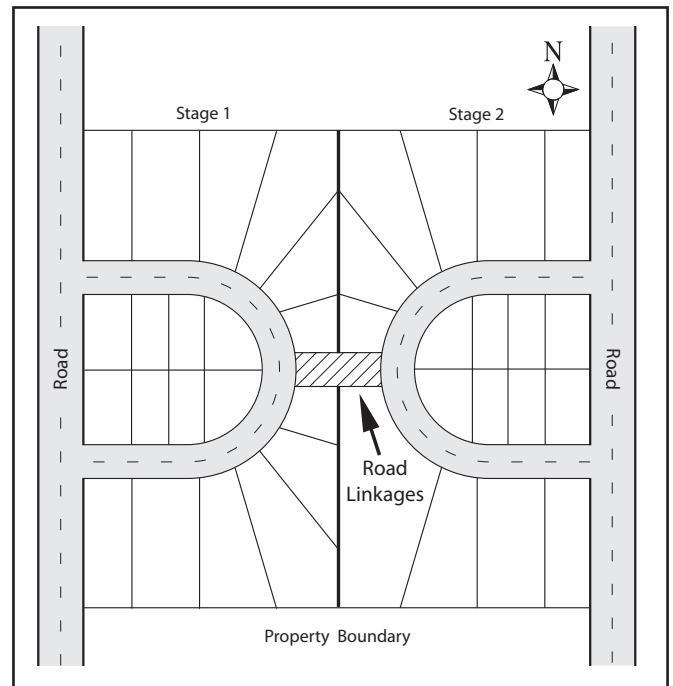


Figure 5. Road linkages provided between subdivisions to allow emergency vehicle access.

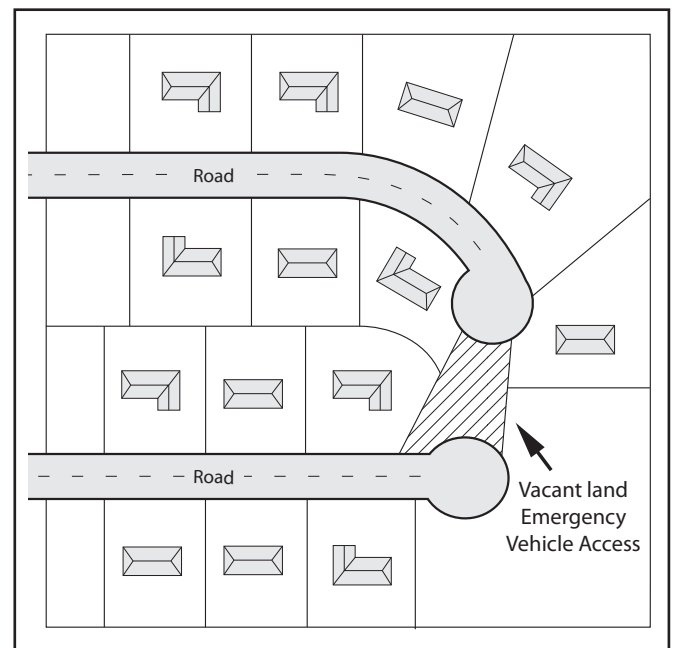


Figure 6. Utilising vacant land to provide emergency vehicle access within the subdivision.

Road requirements for firetruck access

The road network must cater for the size and manoeuvrability of firetrucks in order to provide firetrucks with safe and efficient access to every lot. Roads should be simple and straightforward with minimum twists and turns.

Horizontal and vertical encroachments into the trafficable area must not impede the passage of a firetruck. Where road widths are limited and passing is not possible, passing bays are necessary. Dead-end roads must allow for firetrucks to turn with a maximum of a three-point turn. Roads linking to other subdivisions must provide for alternative access and egress options and facilitate linkages for safer firefighting.

Additional requirements in WMO areas

Avoid dead-end roads where possible. Where they are unavoidable

- in Rural and Green Wedge Zones they must be no longer than 200 metres
- in Residential and Township Zones they should be no longer than 60 metres.

Alternative egress is required from the area identified as the most likely source of bushfire risk. This may be emergency access only and, if so, an agreement with other landowners may be necessary. A Section 173 agreement covenanted on a title may be suitable to demonstrate compliance, but other right-of-way arrangements may be possible and preferable.

Turning circles with a radius of 10 metres are required in dead-end roads to enable firetrucks to turn without having to do a three-point turn.

Battle-axe lots must enable firetruck access from the road to the building envelope, unless access from the road to the rear of the building envelope is less than 60 metres. In the former case it must be demonstrated that there is capability for a firetruck to safely turn around on every battle-axe lot (see **Reference 2**).

Information requirements

- Plans to illustrate sufficient connectivity to the surrounding road network.
- Road widths and turning area specification.
- Passing bay specification.
- Road construction standards.
- Parking restrictions (if appropriate).

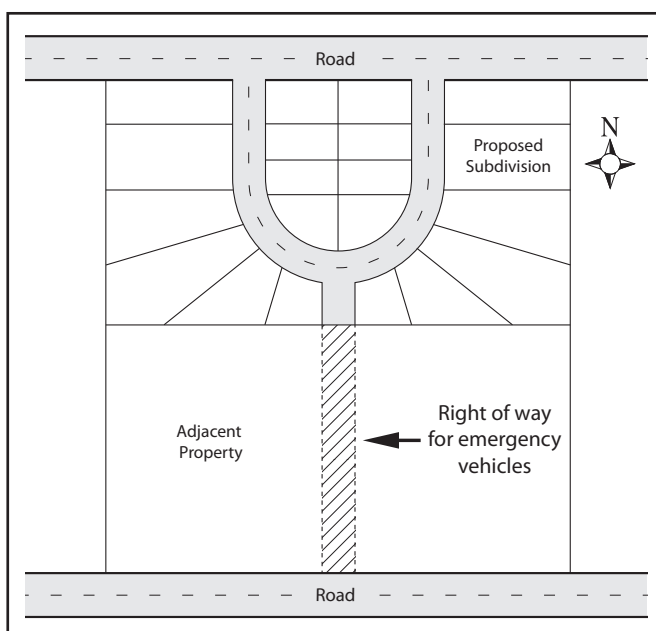


Figure 7. Alternative access for emergency vehicles.

Water requirements

Objectives

Sufficient water must be available and accessible for firefighting purposes.

Performance criteria	Requirements
Reticulated or static water is available in sufficient quantities near buildings to assist in bushfire suppression and defence of property.	In reticulated areas, water must be available as specified in Reference 1 . In non-reticulated areas, the Victoria Planning Provisions specify that water and access for firefighting must be provided. CFA requires that 10,000 litres of water must be provided for firefighting purposes within 60 metres of a dwelling, and be visible and accessible to a firetruck as specified in Reference 2 .

Water as a firefighting tool

Water is a primary firefighting tool needed to defend properties and suppress bushfires. Firefighters also need water to protect them from radiant heat. The water must be readily accessible to firetrucks and be located close to assets.

Additional requirements in WMO areas

Nil.

Information requirements

- Water reticulation information, including plans, pressure, delivery volumes and location of proposed hydrants
- Water features such as rivers, creeks, lakes, reservoirs and the seasonal availability of water during the fire season
- Access arrangements (including standard of provision) to these water supplies.



Figure 8. References 1 and 2.

Requirements for the location of lots and building envelopes

Objectives

Lots and building envelopes must be located and designed to reduce the risk of bushfire, and minimise the potential for ignition from radiant heat and direct flame contact to proposed buildings.

Setbacks from fuel outside the subdivision are sufficient to protect ignition of structures by radiant heat or direct flame contact.

Building envelopes and lot sizes enable future owners to manage fuels in order to prevent ignition of structures from radiant heat or direct flame contact.

Note: It is presumed that ignition by ember attack can be adequately addressed when planning and building permits are considered for structures.

Separating buildings from fire risk

Ignition of buildings by radiant heat and direct flame contact occurs over shorter distances than by ember attack. Separating buildings from fuel can reduce the potential threat; in some cases the threat can be further reduced by physical barriers. Appropriate separation distances from forest or scrub should provide sufficient area to manage fuels and reduce risk of bushfire. The required separation is dependent upon vegetation type, density and topography.

Embers can travel significant distances so all buildings in bushfire-prone areas should be constructed to withstand ember attack.

Roads and public reserves (including road reserves) can be used to separate buildings from fire risk. At the periphery of towns and cities, Precinct Structure Plans are used to strategically consider higher risk areas and ensure that the design and location of new developments take into account potential risks from adjacent land. Roads on the periphery of subdivisions, for example, can provide a buffer between the new development and the potential risk, as opposed to roads at the rear of the lot.

Performance criteria	Requirements
Lots and building envelopes are located to minimise potential for building ignition.	Building envelopes must be located so that building ignition from radiant heat or direct flame contact is unlikely to occur. Building envelopes should be located so that a firetruck can gain access to within 60 metres of the building and an accessible water supply for fighting is located within 60 metres of the building envelope.



Figure 9. Public open space located between existing vegetation and a subdivision to reduce bushfire risk.

Requirements for the location of lots and building envelopes (continued)

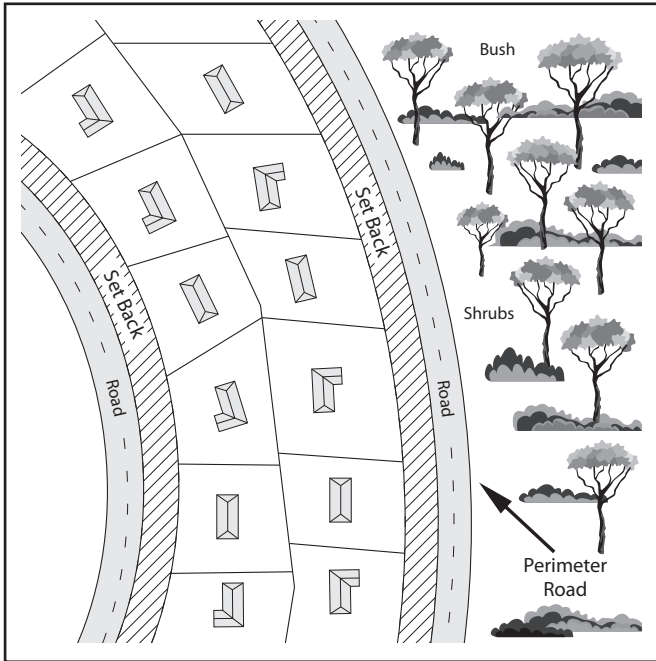


Figure 10. Perimeter roads provide a buffer to buildings from bushfire risk.

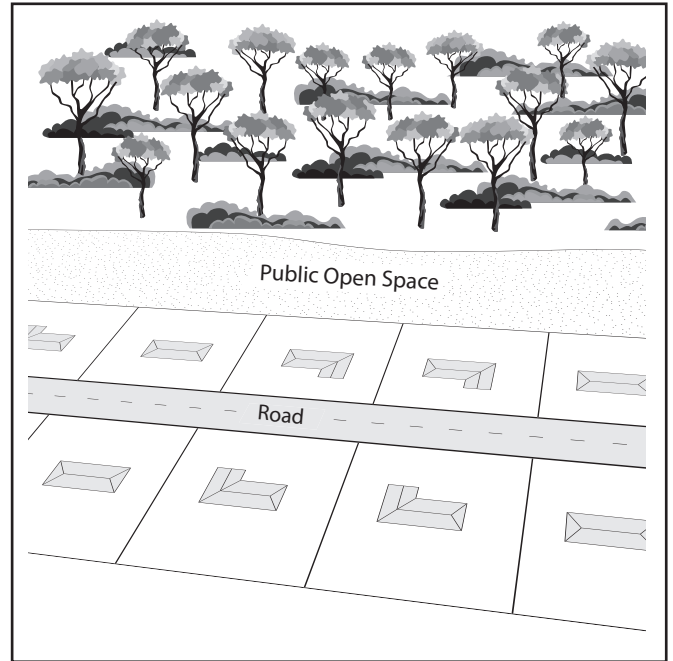


Figure 11. Public open space provides separation for the subdivision from bushfire risk.

Additional requirements in WMO areas

In WMO areas, a crown fire may be possible so greater setback distances are appropriate. Setback distances of the building envelopes from the adjoining property are likely to be greater; these need to be calculated using the *Building in a Wildfire Management Overlay Applicants Workbook 2010*.

In Rural and Green Wedge Zones, sufficient area and building envelopes must be located and made available within every lot. This is to ensure that vegetation management activity satisfies the objectives and outcomes of the WMO, taking into account the environmental requirements of the planning scheme and legislation.

Information requirements

- Lot layout.
- Fuel characteristics within subdivision and on land within 100 metres of the subdivision.
- Road layout and dimensions.
- Each building envelope will require separate evaluation to demonstrate that sufficient defensible space can be achieved. If the removal of vegetation is required to achieve the necessary vegetation management, planning approval may be a necessary precursor for approval of the subdivision.

Vegetation requirements

Objective

To minimise bushfire risk from existing and proposed vegetation in and around the subdivision.

Principles of vegetation management

The amount and type of vegetation in and around a subdivision affects the intensity of a bushfire. Vegetation within close proximity to a subdivision can pose a significant bushfire risk.

To minimise that risk the following principles should inform vegetation management for the subdivision

- Siting and design of the subdivision so there is an adequate buffer distance between vegetation and the proposed lots.
- Clump vegetation to break up fuel continuity and impede the progress of a fire.
- Minimise fine fuels to lower the intensity of the fire front.

Performance criteria

The design of the subdivision should take into account existing vegetation.

Vegetation should be planted in locations and appropriately managed so as to minimise danger to buildings.

Landscape design should minimise fire risk for the subdivision.

Additional requirements in WMO areas

Revegetation must not increase the bushfire risk in or around the subdivision.

Applicants must demonstrate that any proposed landscaping will not increase the risk of fire to lives and property.

This may mean that revegetation needs to occur off site.

It is also recommended that principles of vegetation management outlined in the *Building in a Wildfire Management Overlay Applicant's Workbook* be referred to in the design of the subdivision.



Figure 12. Buffer area between existing vegetation and a subdivision.

Glossary

AS3959:2009

An Australian Standard for construction of buildings in bushfire-prone areas. AS3959:2009 provides detailed assessment criteria for determining the Bushfire Attack Level (BAL) which then specifies the minimum construction level required.

Bushfire-prone area

An area that is recognised as prone to bushfire attack and has been formally designated under Regulation 804 of the Building Regulations 2006. The entire State of Victoria has been declared a bushfire-prone area since 11 March 2009.

CFA

Country Fire Authority.

Firetruck

A vehicle that carries the necessary equipment used by firefighters to assist in the suppression of fire. A typical firetruck (a 'tanker') is approximately 3.02 metres wide, 7.7 metres long and is generally used in residential areas within rural municipalities. In metropolitan settings, a 'pumper' is more commonly used. Other larger firetrucks (such as aerial trucks) are occasionally used. If design solutions are required for specific situations, detailed specifications of a standard CFA tanker are available from the CFA.

Protective features

Elements, such as siting, water supply, vegetation management and building construction, utilised to provide maximum protection for a building or subdivision from the effects of fire.

Referral Authority

A person or body specified at Clause 66 of the planning scheme as a Referral Authority to which an application for a permit or plan must be referred.

Responsible Authority

The Responsible Authority as defined by the Planning and Environment Act 1987 is

- the municipal council
- the Minister for Planning
- any person the planning scheme specifies as a responsible authority for that purpose.

The Responsible Authority is in charge of the administration or enforcement of the planning scheme under the Act.

Reticulated water supply

Permanent infrastructure provided to deliver water to lots from a water supply external to the general vicinity of the subdivision.

Road

Includes a highway, street, lane, footway, square, court, alley or right of way, whether a thoroughfare or not, and whether accessible to the general public or not, as defined in the *Planning and Environment Act 1987*. A constructed road, for the purpose of defining widths, includes the part of the road reserve set aside for traffic and includes rollover kerbs, but does not include the remaining part of the road reserve.

Static water supply

A body of water confined within an enclosure (such as a tank located above or below ground) for use in the event of fire. Swimming pools or dams are excluded unless specifically referenced in the document.

Subdivision

The division of land into two or more parts that can be disposed of separately, as defined by the *Planning and Environment Act 1987*.

Trafficable width

Refers to that width of the constructed road that is available for unimpeded movement of firetrucks and free of encroachments, such as street furniture or landscaping.

Wildfire Management Overlay (WMO)

A tool in planning schemes used to identify areas of land where the fire intensity level is significant and likely to pose a threat to life and property. The overlay sets out requirements for development of the land, including access, water supply, vegetation management and buildings and works.

References

CFA, Reference 1 2006, *Requirements for Water Supplies and Access for Subdivisions in Residential Township 1 and 2 and Township Zones 2006*.

CFA, Reference 2 2006, *Preferred Requirements: Water Supplies and Access for Subdivisions in Rural Zones 2006*.



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