



Building and renovating in a bushfire prone area

Planning to buy, build, renovate, subdivide or change land use in South Australia?

Your property may be required to comply with bushfire safety standards. Use this introductory guide to help you work out what you need to do to make sure you meet planning requirements and improve you and your community's bushfire safety.

New Planning and Design Code

When you are thinking about a build, it is important to check planning requirements early. This may influence the siting, design and cost of your activity. In some areas, it may even be too dangerous to develop safely.

There is a new Planning and Design Code in effect as of 19 March 2021. This replaces previous Council development plans and introduces an online application process.

Find out more at plan.sa.gov.au.

CFS Development Assessment Service

When a development application is referred to the CFS under the Planning, Development and Infrastructure Regulations, the CFS Development Assessment Service assesses the development and provides statutory advice. Considerations include siting, construction, structural standards, access for emergency service vehicles, vegetation clearance, firefighting equipment and water supply.

You may request advice before you submit a development application. For information, contact the CFS Development Assessment Service on 8115 3372 or das@cfs.sa.gov.au



Building and renovating

Key terms

Planning and Design Code (the Code)	A new planning system is in effect for the State of South Australia effective from 19 March 2021. This includes the new Planning and Design Code and the associated ePlanning platform for SA and replaces hard copy council Development Plans and manual processing of development applications. The Code implements the requirements of the Planning, Development and Infrastructure Act 2016 (PDI Act). It sets out the policies, rules and classifications which, when combined with mapping, apply in the various parts of the state for the purposes of development assessment. The Code applies overlays, zones and subzones to specify which policies and rules govern the use and development of particular areas.
Hazard overlay	Every part of South Australia is zoned to guide the types of development that are and aren't appropriate. The zoning that applies to your property depends on where it is located. There are 6 Bushfire Hazard Overlays in the Code: Bushfire - High Risk, Bushfire - Medium Risk, Bushfire - General Risk, Bushfire - Outback, Bushfire - Regional, and Bushfire - Urban Interface. These overlays determine whether you need approval and which policies apply to your address.
Desired Outcomes (for a Hazard Overlay)	Desired outcome are policies designed to aid the interpretation of performance outcomes by setting a general policy agenda for a zone, subzone, overlay or general development policies module. Where a relevant authority (Council or assessment panel) is uncertain as to whether or how a performance outcome applies to a development, the desired outcome(s) may inform its consideration of the relevance and application of a performance outcome, or assist in assessing the merits of the development against the applicable performance outcomes collectively.
Performance Outcomes (for a Hazard Overlay)	Performance outcomes are policies designed to facilitate assessment according to specified factors, including land use, site dimensions and land division, built form, character and hazard risk minimisation.
Bushfire Attack Level (BAL)	A Bushfire Attack Level (BAL) is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact. It is measured in increments of radiant heat (expressed in kilowatts per metre squared as defined by the Australian Standard 3959:2018).
Asset Protection Zone	An Asset Protection Zone (APZ) is an area surrounding a building or structure where vegetation (fuel) is modified and managed to reduce the effects of flame contact and radiant heat associated with a bushfire. It provides passive fire protection and provides a relatively safe area for firefighters and home owners to defend the property.
Access	Access from the public road to the building needs to be provided and designed to enable occupants of the building safe access and exiting in the event of an emergency. Clear access to the water supply may also be crucial in the event of a fire.
Water supply	The provision of a dedicated water supply, with appropriate volume, access and markings will ensure that, in the event of a bushfire, a property is well equipped to defend against a bushfire if required.
Construction standard	Building construction and design can be used to minimise the impact of ember attack and radiant heat on a building. Construction requirements for buildings are expressed as a Bushfire Attack Level (BAL) as prescribed in AS3959.



Development Application Process

Does it apply to me?

If you are looking to build or renovate your home, subdivide your land or add a shed or carport to your property, you may need to lodge an application for approval in line with the Planning and Design Code before you get started. The Code applies overlays, zones and subzones to specify which policies and rules govern the use and development of particular areas. This includes six Bushfire Hazard Overlays.

Use the PlanSA online 'approval wizard' to check if your project requires approval plan.sa.gov.au > [Development applications](#) > [Before you lodge](#) > [Find out if you need approval](#).

The wizard will determine whether a Bushfire Hazard Overlay applies, which policies and rules apply to your address and if your application needs to be referred to the CFS for an assessment.

If the Bushfire Hazard Overlay – High Risk applies to your address, your development application will be referred to the CFS for comment and an assessment of the Bushfire Attack Level (BAL). If the Bushfire Hazard Overlay – Urban Interface applies to your address and the High Risk overlay is within 100m of your address, your application may also require a BAL assessment of your address. You can do this directly with the CFS, as Council will not refer your development application to us in such a case.

How is the Bushfire Attack Level determined?

The method for assessing the Bushfire Attack Level is set out in Australian Standard 3959:2018 (AS 3959) using the vegetation type, the distance between the site and the vegetation and the slope of the terrain underneath the vegetation.

AS3959 also sets out the construction materials required to meet the Bushfire Attack Level to better protect the building from bushfire impact. There are six BALs within the Standard: BAL – LOW; BAL – 12.5; BAL – 19; BAL – 29; BAL – 40 and BAL – FZ (Flame Zone). The numbers indicate the maximum radiant heat in kilowatts per square metre e.g., BAL – 19 indicates a maximum of 19 kw/m².

BAL - LOW is the lowest risk category and there are no additional construction requirements. BAL 40 and BAL FZ (Flame Zone) are considered to be very high to extreme bushfire risk and require significant and specialist construction to meet AS3959 standards. Refer to the diagram below for descriptions.



Bushfire Attack Level descriptions

Development Application Process

What do I need to include in my development application for a CFS Referral?

When development applications are lodged under the Planning, Development and Infrastructure Act, 2016 (PDI Act) documentation must be provided to support the application. The baseline documentation required depends on the type of development that is proposed and is outlined in Schedule 8 of the Planning, Development and Infrastructure Regulations 2017.

When the Hazards (Bushfire - High Risk) Overlay applies to a development application, the application may be referred to the SA Country Fire Service.

In this case, you need to include specific information on your plans (drawings) for the CFS to be able to make an informed comment on your application. This may be additional to the baseline information lodged with your original application, depending on the nature and location of your development. Different information may be required according to the nature of your application, refer to Table 1.

Your site plan needs to be drawn to scale, including appropriate bar and ratio scales. True North must be indicated, and the size of the allotment must be stated. The site plan needs to show your entire allotment and demonstrate the location and size of the following items:

- Accurate dimensions and siting of proposed and existing buildings. If any structure, or part of an existing structure is proposed to be demolished, this must be clearly indicated also. When proposing an addition or extension to an existing home, the percentage increase in total floor area must be stated.
- Distances between buildings and your boundary.
- Significant landmarks, trees or areas under an agreement with a third party (ie for access, heritage, land management)

- Driveway details including the proposed:
 - » path of travel from the public road
 - » width
 - » length
 - » gradient
 - » location of overtaking lanes (when driveway is longer than 200m or visibility is restricted)
 - » cross fall of the driveway (when driveway is proposed to cut across a steep slope)
 - » gradient of the transition area between the public road and the existing or proposed driveway
 - » water course crossings
 - » surface materials
 - » location of hardstand
 - » location and dimensions of proposed turning options for large vehicles.
- Firefighting water supply location (existing or proposed) and associated outlet (where required)
- Fire hose reels and pump (where required)
- Existing or Proposed Asset Protection Zone including:
 - » Any existing trees and any proposed for planting or removal
 - » Distance from habitable building achievable for a fuel reduced area (preferably minimum of 20m unless boundaries prevent this)
 - » Any proposed landscaping plans.



Development Application Process

Table 1: Application requirements for CFS referrals				
Key:		✓ Required ○ May be requested	Types of Development	
Document Type	Showing	New habitable buildings	Alterations Additions (1)	Vulnerable Developments (2)
Application details				
Site plan drawn to scale, including appropriate bar and ratio scales, showing:	the dimensions of an existing or proposed asset protection zone (minimum 20 metres)	✓	✓	✓
	the surface materials of any existing or proposed driveway	✓	✓	✓
	the gradient of the transition area between the public road and any existing or proposed driveway	✓	✓	✓
	the gradients of the driveway	✓	✓	✓
	the crossfall of the driveway	○	○	○
	the length and width of the driveway	✓	✓	✓
	location and dimension of turning area	✓	○	○
	size of allotment in m ²	✓	✓	✓
	the percentage increase in total floor area		✓	○
	location of water supply dedicated for firefighting	✓	○	○
	location of gravity fed remote outlet (where applicable)	○	○	○
	location of hardstand	✓	✓	✓
	location of any ancillary structures	✓	✓	✓
1. Alterations to Class 1, 2 and 3 buildings where the total floor area of the building would, after completion of the proposed building work, have increased by at least 50% when compared to the total floor area of the building as it existed 3 years before the date of the application (or, in case of a building constructed since that time, as it existed at the date of completion of original construction). MBS 008 - July 2020 Designated bushfire prone areas - additional requirements 4.0 Application				
2. Tourist accommodation, aged care, child care, schools, etc				



Development Standards for Bushfire Safety

Site access

Your development needs to provide satisfactory access to a standard “to facilitate access for emergency service vehicles to aid the protection of lives and assets from bushfire danger”.

Regulations identify standards for driveways. CFS trucks (appliances) need a minimum surface width of 3 metres with 4 metres clearance of vegetation. There also needs to be 4 metres height clearance of vegetation and structures (no overhanging branches, carports, electricity wires, or other obstructions).



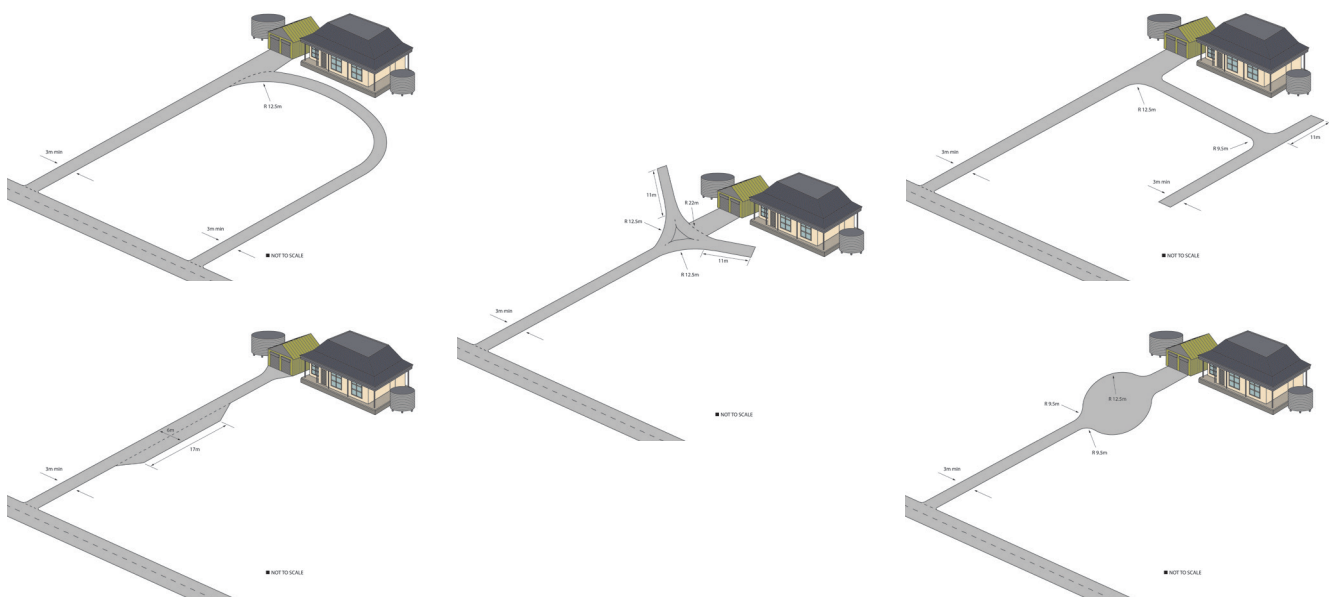
Non-satisfactory access driveway



Satisfactory access driveway

Driveway bends

Driveway bends should have a minimum internal radius of at least 9.5 metres or external radius of 12.5 metres. There needs to be room for a truck to turn around on your property so the firefighters can drive forwards into your property, turn the vehicle around with minimum possible number of manoeuvres and be facing forwards, ready to leave, before any active fire-fighting.



Examples of compliant driveway design



Development Standards for Bushfire Safety

Firefighting water supply (Fire Water)

An appropriate water tank or other static supply of firefighting water may be required for firefighting purposes. The loss of power and water pressure is common during an emergency. To ensure your home can be defended without mains electricity and/or mains water supply, the Code may require the maintenance of an effective water supply.

Requirements for firefighting equipment and water supply are described in the Ministerial Building Standard MBS008 – Designated bushfire prone areas – additional requirements.

The amount of static water supply is determined by:

- Which Bushfire Hazard Overlay your allotment is captured in, and
- the size of your allotment, and
- the assessed BAL level for your development and
- whether your property is connected to mains water supply.

Fire water access

Access to fire water needs to be safe and appropriate for use in an emergency. This may include an all-weather hardstand area in a location that allows firefighting vehicles to safely access the dedicated water supply and exit the site in a forward direction. The hardstand area must be no further than 6 metres from the supply outlet connected to the dedicated water.

Fire fighting equipment and connections

Your dedicated firefighting water may need to be connected to bushfire hose reels and a pump that can operate independent of mains electricity. This can be achieved with a petrol or diesel pump or a backup generator in an easily accessible location near your home and protected from the elements. This equipment should also be somewhere that gives you some degree of protection while operating them.

Your fire water is also back up supply for fire trucks. The quickest and easiest way for them to re-fill their supply is with a fire fighting connection. The current standard is a 65mm Storz outlet. If you already have a 64mm London round with male thread, this is acceptable too. The connection needs to be on your tank, or connected via a gravity fed remote outlet from your tank, where direct access is not possible.

Fire water signage

The easiest way to support safe navigation to your water supply outlet is with signage at the entrance to your property, with supplementary signage on larger properties. A blue sign with white lettering located at or near your road frontage and pointing toward your water supply is recommended.

During a bushfire event, it is usually very dark and very smoky which reduces visibility and increases difficulty in navigation. Appropriate reflective signage will assist firefighters to enter your property confident that they can replenish their water supply and operate effectively and safely.

If your property is exceptionally large or complex, it may be useful to provide a manifest box at the entrance to your property. This box (which looks a bit like a small meter box), should be red with white writing 'Fire Protection system' or similar, and clearly visible to fire crews as they access the property. Depending on the circumstances of your property it may contain a site plan highlighting vehicle access, turning ability, building location(s), your fire protection equipment such as pumps and hoses, the location of your dedicated water supply and/or fire authority connection and any on-site hazards or storage of dangerous materials i.e. LPG, fuels or chemicals. A list of emergency contact phone numbers may also be beneficial.



Development Standards for Bushfire Safety

Creating and maintaining an Asset Protection Zone

Your development approval may be subject to the creation and maintenance of an Asset Protection Zone (APZ). This will improve your passive fire protection and provide a relatively safe area for firefighters and home owners to defend the property in the event of a fire.

This is achieved by including landscaping with Bushfire Protection features to:

- prevent or inhibit the spread of bushfire
- minimise the risk to life of occupants and emergency services personnel
- minimise the risk of damage to buildings and property, and
- maintain a fuel reduced zone for safe movement of occupants and fire fighters.

Vegetation management in an Asset Protection Zone

You need to design and manage your garden and property to meet the requirements for landscaping and vegetation management in an Asset Protection Zone. This is described in Table 2.

Reduction of vegetation must only occur in accordance with SA Native Vegetation Act 1991 and SA Native Vegetation Regulations 2017. Check the information at environment.sa.gov.au. More detailed information can be found in the document Managing Native Vegetation How to Reduce the impact of bushfire and the steps you need to take August 2020.

Table 2: Requirements for landscaping and vegetation management in an Asset Protection Zone

Asset Protection Zone	
Vegetation	cannot be planted within 1 metre of a habitable building. maintained to be free of accumulated dead vegetation
Trees and shrubs	are limited to an overall maximum coverage of 30%. shall not be planted closer to buildings than the distance equivalent to their mature height. must not overhang the roofline of the building, touch walls, windows or other elements of the building. Shrubs must not be planted under trees. They must be separated from any tree by a distance of at least 1.5 times their mature height.
Grasses	need to be kept under the maximum height of 10cm during the Fire Danger Season.
Flammable objects such as plants, mulches and fences	must not be located adjacent to vulnerable parts of the building such as windows, decks and eaves.



Development Standards for Bushfire Safety

Size of Asset Protection Zone

Ideally, an APZ is a minimum of 20 metres around your home - or to your property boundary, whichever comes first.

However, if your home is sited on or near sloping ground, you may need a larger area of managed vegetation to reduce the risk to your building.

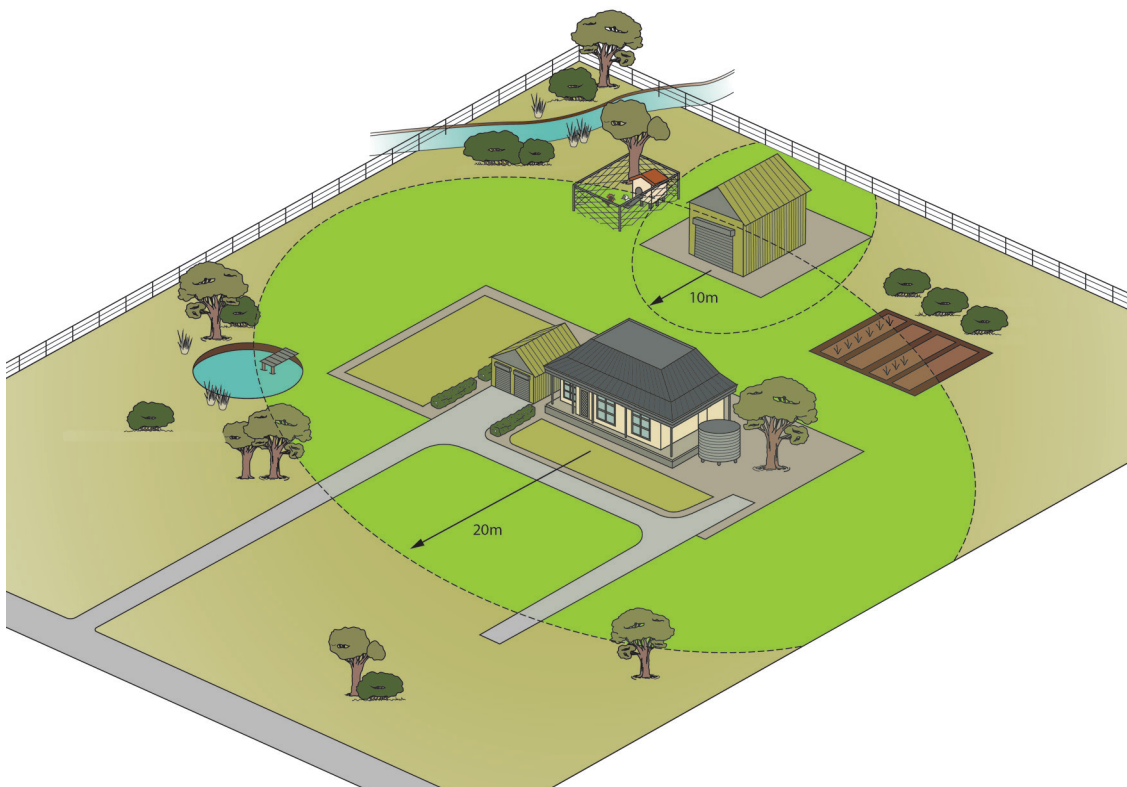
Careful consideration of the location of your home within your property boundaries must be taken to ensure you are not siting your home in an area of unacceptable bushfire risk. This may include being too close to thick vegetation, at the top of a vegetated slope or on an inaccessible section of your property that would prevent emergency services vehicles accessing your home. You will also need to consider whether your site is too close to neighbouring allotments that may have unmanaged vegetation.

Privacy screens and Hill Face Zone considerations

If your Development Approval contains conditions to create and maintain a vegetated privacy screen from your neighbours or to meet Hills Face Zone requirements, a single row of trees or shrubs are permitted closer to the building than their mature height provided:

- they are not connected to other hazardous vegetation
- are not within close proximity of timber building elements, windows and doors and
- do not touch or overhang any part of the building.

Screening plants should have low flammability characteristics, be kept in optimum health, pruned regularly and any dead vegetation removed. This must be identified on your plans for CFS to assess and condition on your development approval.



Asset Protection Zone



Further reading

Planning and Design Code

Plan SA Guide 4.2 Submit a Development Application

Plan SA Fact Sheets, Guides and FAQs – multiple documents on Plan SA website in resources section

Ministerial Building Standard MBS008 – Designated bushfire prone areas – additional requirements.

Australian Standard 3959:2018, Construction of buildings in bushfire-prone areas.

National performance standards for bushfire shelters

A guide to retrofit your home for better protection from a bushfire (note Victorian resource)

Reducing fire risk in gardens – Sustainable landscapes

Managing Native Vegetation – How to reduce the impact of bushfire and the steps you need to take (Native Vegetation Council SA and SA CFS)

Contact us

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