# BUSHFIRE MANAGEMENT PLAN

## Lot 2 on RP853658

## 57 Hayward Street, Stafford

**Client Reference: 001.05.26**

**Bushfire Risk Reducers**
ABN 28 355 366 321

PO Box 4645 Toowoomba East 4350
T] 07 46366367 F] 07 46366383 M] 0438 994465

BPAD
Bushfire
Planning & Design
Accredited Practitioner
Level 3

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# REPORT AUTHOR

**Alistair Hill**
Director - Bushfire Risk Reducers
Grad Dip Bushfire Planning and Design
FPAA BPAD-Level 3 Certified Practitioner
Certification Number: BPD-PA-19034

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**DOCUMENT CONTROL** **Bushfire Management Plan**

**Client:** **Total Fitness Australia**

**Client Reference:** **001.05.26**

**Project:** **MCU**

**Site Location:** **57 Hayward Street, Stafford**

| Version | Date | Status | Changes | Author | Approver |
|---|---|---|---|---|---|
| Rev 0 | 1.05.2026 | First Draft | | AH | AH |
| Rev 1 | 6.05.2026 | Final Report | | AH | AH |
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# Contents

# 1.0 Introduction

This report has been commissioned by Total Fitness Australia in order to support a Development Application for the material change of use of Lot 2 on RP853658 (the "Subject Lot") as a fitness Gymnasium; and also in compliance with the Building Code of Australia (BCA), in respect of construction of the gymnasium building.

Council's bushfire hazard overlay mapping classifies the Subject Lot as "bushfire prone area" (BPA). The hazard mapping is created from data that is collected remotely to combine vegetation data with slope and aspect data, and arrive at a hazard rating based on a model specified in State Planning Policy (SPP) 01/03 (*Mitigating the adverse impacts of flood, bushfire and landslide*). SPP 01/03 was replaced by *State Planning Policy – Natural hazards, risk and resilience – Bushfire* (December 2019) accompanied by the *Bushfire Resilient Communities Technical Reference Guide* (BRC)(October 2019) with bushfire hazard mapping which designates much of the Subject Lot as BPA. Council must give regard to the more recent bushfire hazard overlay.

The designation by Council of land being BPA has three main implications:

1. It requires the production of a Bushfire Management Plan which complies with the Planning Scheme (in this case Part 8.2.5 (Bushfire Overlay Code) of the Brisbane City Plan 2021).
2. State Planning Policy – Natural hazards, risk and resilience – Bushfire (December 2019), contains development assessment benchmarks to ensure that State interests are appropriately considered in relation to natural hazards, including bushfire hazard areas.
3. It invokes the Building Code of Australia (BCA), requiring compliance with its bushfire related function performance objectives and with AS3959-2018 *Construction of buildings in bushfire prone areas*.

This Bushfire Management Plan demonstrates compliance with SPP01/03. It objectively determines the nature and severity of potential worst case wildfire in the area, and develops risk mitigation measures to be used in combination with established construction needs in accordance with AS3959-2018. It is the implementation of all these protection measures in combination, that demonstrates the viability and conformance of the proposed development in the development application process.

# 2.0 Site and Development Description

## 2.1 Property Description

| | |
|---|---|
| Site ID: | Lot 2 on RP853658.<br>Parish of Kedron, County of Stanley. |
| Current address of property: | 57 Hayward Street, Stafford, QLD 4053. |
| Local Government Area: | Brisbane City Council. |
| Total Area: | 17 460m² (Part of) |
| Zoning: | General Industry |

## 2.2 Proposed Development

The proposed development is planned to use approximately one quarter of the existing concrete tilit-up-panel warehouse building for a Gymnasium.

## 2.3 Site Location and Layout


**Figure 1. Broader area showing the location of the proposed development.**

Located on the western end of Hayward Street the Subject Lot abuts Bilston Street Park, containing a fragment of open forest (of less than 0.5ha) along with areas of tall unmanaged grass (including Giant Guinea Grass, *Thyrsus maximus*).

Whilst this area of adjacent hazard is small, it is within 100m of a larger area of open forest vegetation in Grange Forest Park, and so under Section 4.2.6 of BRC 2019 (*Modify potential intensity of small patches and corridors)* the adjacent area can't be downgraded as "Low hazard". The hazard fragment is constrained by permanently wet riparian vegetation within Kedron Brook. The prospect of ignition of this fragment is possible, but would have to be either from a single point of origin on the eastern side of Kedron Brook, or (unlikely but possible) from a spotover from the western side of the waterway. Consequently it is reasonable to apply Short Fire Run assessment to this scenario.

The Gymnasium will be a separate building constructed inside the existing concrete warehouse structure, accessed through separate doorways to the existing roller doors. As a Class 9 building it will require construction in accordance with AS3959 – 2018. In addition the National Construction Code Specification 43 will need to be addressed by a registered Fire Engineer.

It is argued that whilst the Building is Class 9, the gymnasium use is not a "vulnerable use". Fit gym attendees with the ready means to either close up the building and shelter from temporary threat of smoke, or to leave in a safe direction via Hayward Street, should not be regarded as "vulnerable use".

Figure 2 shows the proposed development more closely.


**Figure 2. Proposed Gymnasium Location.**

The site is within approximately 4km by road of the nearest Queensland Fire Department Station (Windsor Fire Station).

# 3.0 Bushfire Hazard Assessment

## 3.1 Bushfire hazard classification

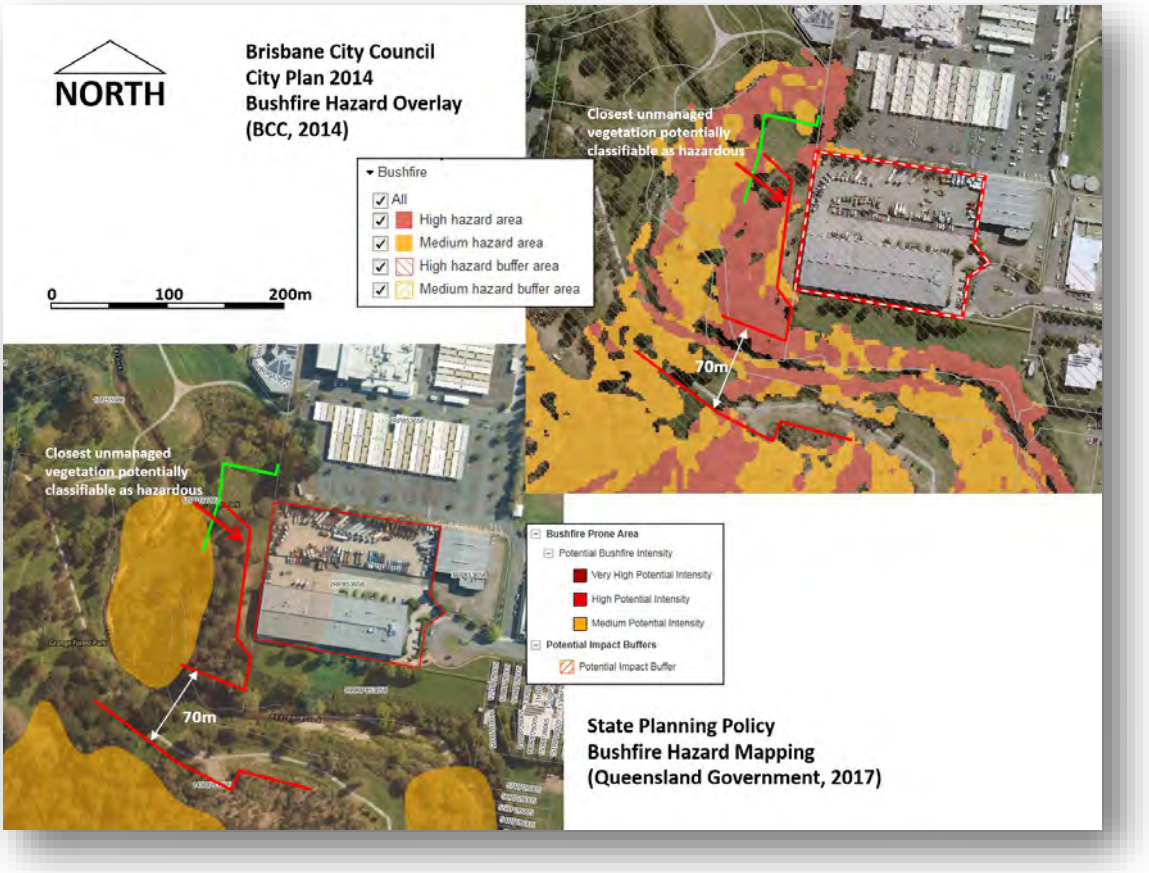


**Figure 3. Council and latest State bushfire hazard mapping**

Figure 3 shows the location of the site in relation to designated "bushfire prone area" mapped on the basis of SPP 01/03 bushfire hazard mapping methodology applied by Council, which should have classified the forested area to the south as validated in Table 1.

| **Bushfire hazard assessment SPP 01/03 NHMA Methodology** | | |
|---|---|---|
| Date: 21st April 2026 | | |
| **Characteristic** | **Description** | **Hazard score** |
| Vegetation | H39e | 8 |
| Slope | Rolling Hills 10 - 20% | 3 |
| Aspect | West to south | 2 |
| **Total hazard score** | **Medium** | **9** |

**Table 1. NHMA Methodology as used in SPP01/03 and Council Bushfire Hazard Overlay Mapping**

The hazard classification for the site should be "medium", not "high" as mapped.

"Bushfire Prone Land" is defined under Building Regulation 2021, the BCA and SPP01/03 as an area **identified as such by Local Government** (using the methodology specified in Appendix 3 of SPP01/03 and applied by Council in SC6.4 *Bushfire Planning Scheme Policy*); and using "medium and high hazard" as indicators of bushfire prone land. The BCA calls up AS3959-2018 as providing "Deemed to Satisfy" construction levels for Class 1, 2, 3 and 9 buildings and associated Class 10a structures constructed in bushfire prone areas.

AS3959-2018 specifies building implications within 100m of designated bushfire prone land, or more strictly speaking, within 100m of intact, classified vegetation (50m in the case of grassland). This BMP establishes Bushfire Attack Levels (BALs) for affected Lots, using a combination of Methods 1 and 2 approach under AS3959-2009.

SPP 01/03 was replaced by *State Planning Policy – Natural hazards, risk and resilience – Bushfire* (December 2019) accompanied by the *Bushfire Resilient Communities Technical Reference Guide* (BRC)(October 2019) with bushfire hazard mapping shown in Figure 3 which designates the site a “bushfire prone area” (BPA).

## 3.2 Vegetation Assessment, Slope and Separation Distances from Proposed Development


**Figure 4. Fuel Zones Assessed** Contours shown are 10m.

Figure 4 shows the main fuel area assessed, outlined in red, classified as “Forest” under AS3959-2018.

Effective slope beneath vegetation being classified is taken as 8˚ downslope.

Section 6 objectively calculates and determines the potential nature and severity of bushfire attack more thoroughly. This serves as a basis for determining the construction and other bushfire protection measures outlined in this BAL Assessment.

Fuel assessments were determined using the Overall Fuel Hazard Assessment Guide - DSE Victoria (Oct 2010) and the fuel values applied in Section 6.3 are those attributed by the Queensland Government (QFES) dataset as required under BRC and AS3959-2018.

## 3.3 Fuel Accumulation Assessment – Forest fragment west

**Figure 5. Fuel Accumulation Assessment – Forest fragment west**

| **Fuel hazard estimate** | **Assessment according to Hines et al 2010** | | |
|---|---|---|---|
| Date: 21st April 2026 | | | |
| **Layer** | **Rating** | **Description / Comments** | **Equivalent fuel load t/ha** |
| Surface and near surface | Very High | Moderate litter bed 20mm with Very high NS fuels as *Panicum sp, Imperatur sp*. | 15 - 16 |
| Elevated | Low | Canopy recruiters, *Acacia spp*. Easy to walk in any direction without needing to choose a path between shrubs. | 1 |
| Bark | Moderate | Some *E.tereticornis* at base of slope, otherwise barks smooth or tightly held (*E.crebra, C.citriodora, E. propinqua).* | 1 |
| **Overall rating** | **High** | | **17 - 18 t/ha** |

**Table 2. Fuel Assessment Forest fragment west.**

The vegetation community present is most consistent with Regional Ecosystem (RE) 12.11.25 mapped in the area, for which State government (QFES dataset) attributes a total of 18t/ha of total available fuel to Vegetation Hazard Class 10.2. A total available fuel value of 18t/ha (17t/ha of which is surface and near surface fuel) is applied to site specific fire modelling in Section 6 as required under Councils *Technical Assessment Guide – Bushfire Reporting*.

# 4.0 Site constraints and environmental values which may limit mitigation options

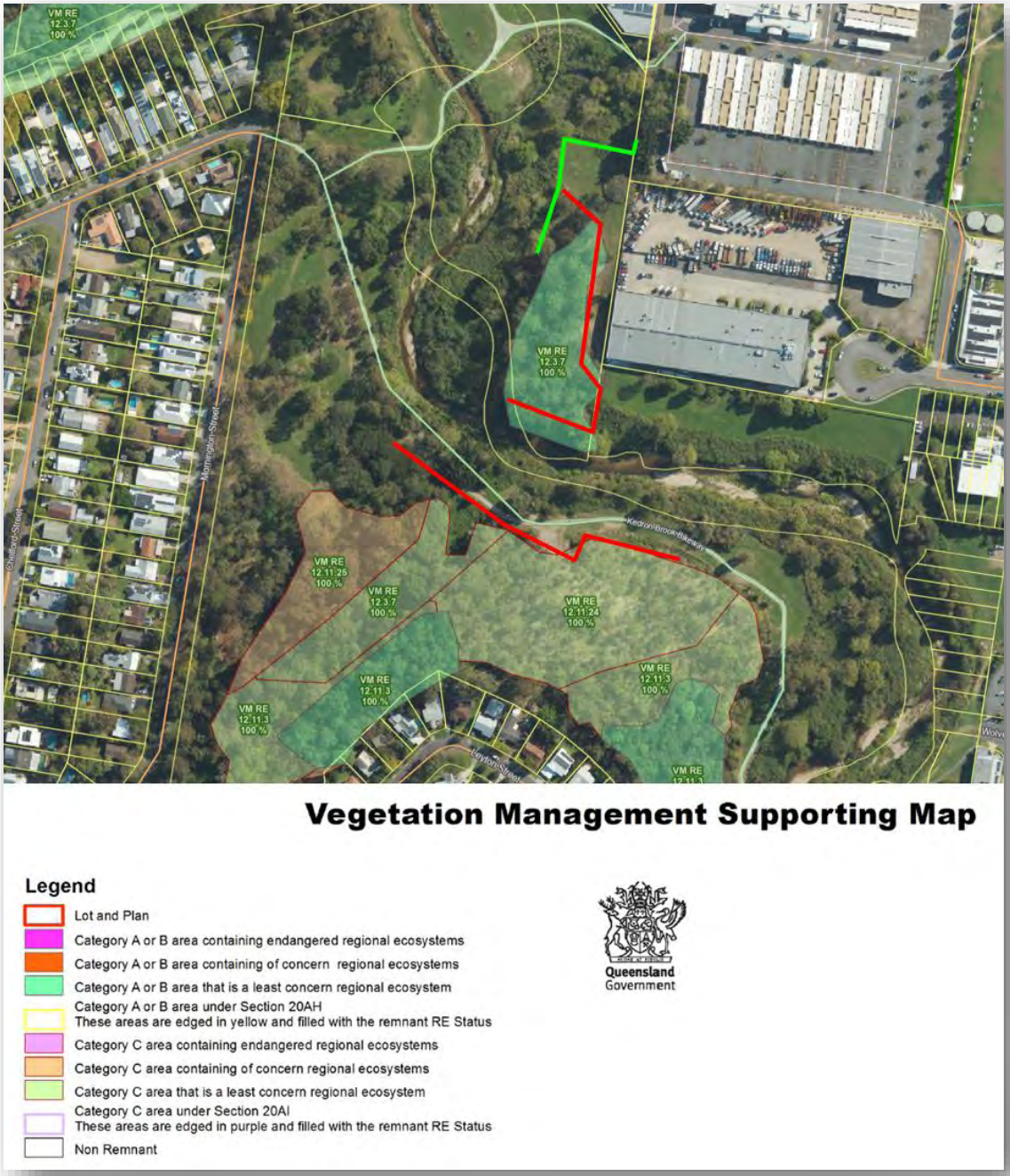


**Figure 6. Regional Ecosystem (RE) Mapping**

Figure 6 shows the location of the proposed development location in relation to vegetation mapped by the Queensland Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development (DNRMMRRD) as "Of Least Concern" RE12.3.7 west of the site. Site assessment evidenced in Figure 5 supports RE12.11.25 as the predominant vegetation community.

DNRMMRRD provides the following Description and recommended fire guidelines for the vegetation communities mapped.

| Regional Ecosystem | Description | Fire Guidelines |
|---|---|---|
| **RE 12.11.25 Of Least Concern** | *Corymbia henryi* and/or *Eucalyptus fibrosa* subsp. *fibrosa* woodland. Other frequently occurring canopy species may include *Eucalyptus crebra, E. carnea, E. tindaliae, E. siderophloia, C. citriodora* subsp. *variegata, Angophora leiocarpa, E. acmenoides, E. helidonica, E. propinqua, C. intermedia* and *E. seeana.* Rarely includes patches of *E. dura*. Usually occurs on low hills, hills and footslopes of mountains in near coastal areas on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 10b)<br><br>Vegetation Hazard Class (VHC) 10.2 Potential Available Fuel Load 18t/ha | SEASON: Summer to winter.<br><br>INTENSITY: Low to moderate.<br><br>INTERVAL: 4-25 years.<br><br>STRATEGY: Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved.<br><br>ISSUES: The fire regime should maintain a mosaic of grassy and shrubby understoreys. Control of weeds is a major focus of planned burning in most areas. Careful thought should be given to maintaining ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas. Variability in season and fire intensity is important, as well as spot ignition in cooler or moister periods to encourage mosaics. |

**Table 3. Regional Ecosystems Descriptions and Fire Guidelines**

Council management of the vegetated reserve is likely to involve hazard reduction burning. Planning has to be based on fuel levels reaching a long term maximum stable state, coinciding with ignition under worst case foreseeable fire weather conditions.

## 4.1 Fire History and Frequency

This study found no indicators of previous fire in the area. Occurrence of fire at some time has to be regarded as possible, potentially coinciding with maximum fuel accumulation and worst case fire weather conditions.

# 5.0 Specific risk factors associated with the development proposal

## 5.1 Nature of activities anticipated on site

Normal gym activities are anticipated to occur on the site, which does not create sources of ignition.

## 5.2 Numbers of people likely to be present

Up to 200 people could potentially be using the gymnasium at busiest periods. The proposed development adds to the number of people currently in the area or potentially exposed to the small possibility of unplanned fire, but this Plan applies a combination of protection measures which reduce risk to an acceptable level.

# 6.0 Nature and Severity of Potential Bushfire Attack

## 6.1 Bushfire season and Fire Weather

The "typical fire season" in this area peaks between September and November. The predominant winds in the area are south easterly, however during the fire season, hot gusty westerlies of over 30 kph can be expected, with Relative Humidity falling to 10% and less. Temperatures on these days can climb over 35°C , and for two or three days a year, fire weather conditions equivalent to FDI levels of around 50 - 60 can be anticipated. (Note that this is in contrast to the value of 40 which Queensland is currently using in AS3959 - 2018).

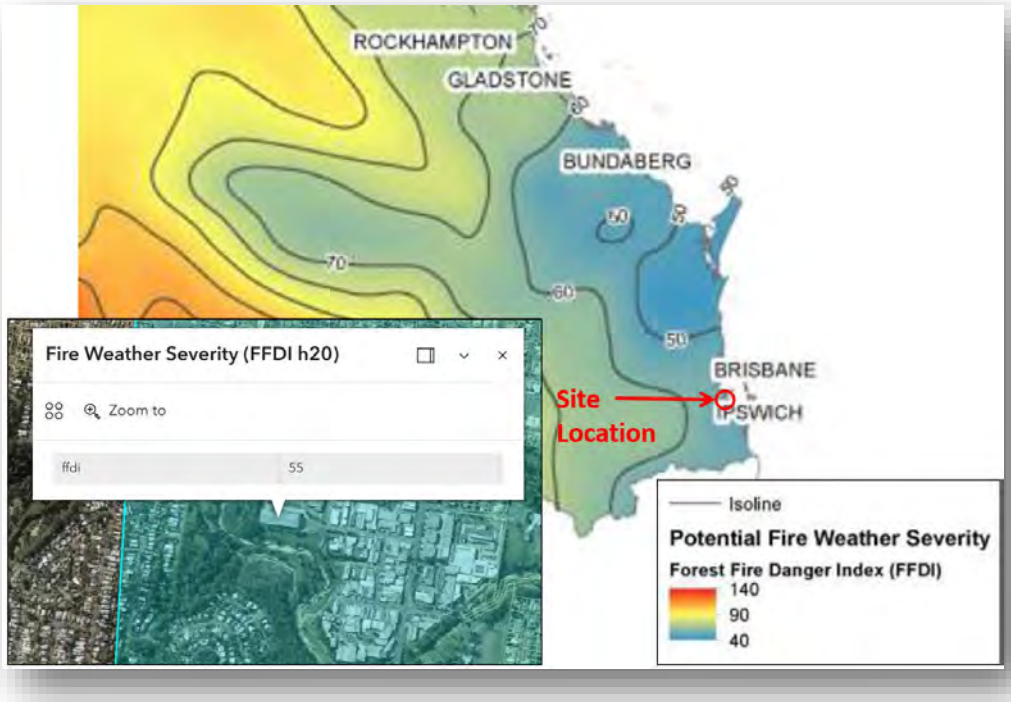


**Figure 8. State Government revised FDI values of 55 for the area involved. (BRC Mapper, 2026).**

## 6.2 Anticipated direction of bushfire attack

Unplanned “wildfire” attack is possible from the west / southwest, as indicated in Figure 4, generally aligned with the direction of worst case fire weather for the region, this being westerly through north westerly to northerly.

Bushfire attack comes in a number of forms:  direct flame, radiant heat, embers, smoke and wind. Research shows that over 80% of houses lost to bushfire in Australia can be attributed to ember attack, within 100m of bushland.

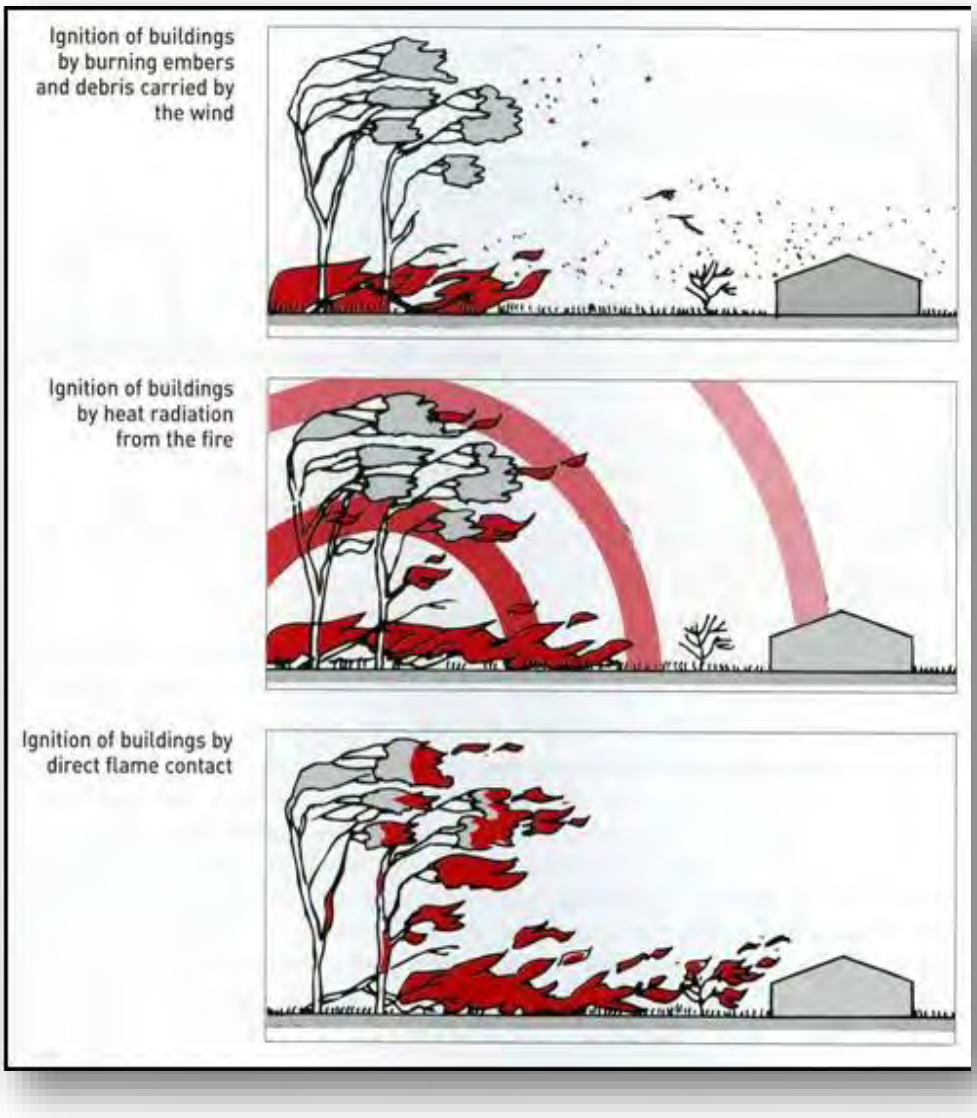


**Figure  9.  Main Bushfire Attack mechanisms (Image courtesy of Ramsay & Rudolf, 2003)**

## 6.3 Anticipated severity of bushfire attack

Values for vegetation type, fuel load and slope are carried forward to Table 4, to predict the key fire parameters for the potential fire occurring to the west.

| **Fire Scenario – Forest fragment west**<br>**Method 2 AS3959-2018 and BRC 2019**<br>**FDI 55**<br>**Forest @ 1/18t/ha.**<br>**Effective Slope under vegetation 8° Down**<br>**Fire run length 40m** | **Fire Scenario – Forest fragment south**<br>**Method 1 AS3959 – 2018**<br>**FDI 40**<br>**Forest**<br>**Effective Slope under vegetation > 5 - 10° Down** |
|---|---|
| Fire Intensity (Byram, 1959)<br>18 122kW/m ("MEDIUM") | |
| Rate of Spread (Noble et al, 1980)<br>1.95kph | |
| Flame Height (modified Mc Arthur V equation, NSW RFS 2001)<br>14.84m | |
| Flame Width 15m | |
| Elevation of Receiver 2.4m | |
| BAL FZ within <11m of intact unmanaged vegetation<br>BAL 40 from 11 - <14m<br>BAL 29 from 14 - <17m<br>BAL 19 from 17 - <20m<br>BAL 12.5 from 20 – <100m | BAL FZ within <15m of intact unmanaged vegetation<br>BAL 40 from 15 - <20m<br>BAL 29 from 20 - <29m<br>BAL 19 from 29 - <41m<br>BAL 12.5 from 41 – <100m |

**Table 4. Calculated values for potential bushfire characteristics, and methods used.**

The radiant heat flux values are compared as Bushfire Attack Levels (BALs) in Table 4 and Figure 10. The predicted fireline intensity for the forested area is in the "Medium" range, as indicated in State bushfire hazard mapping.

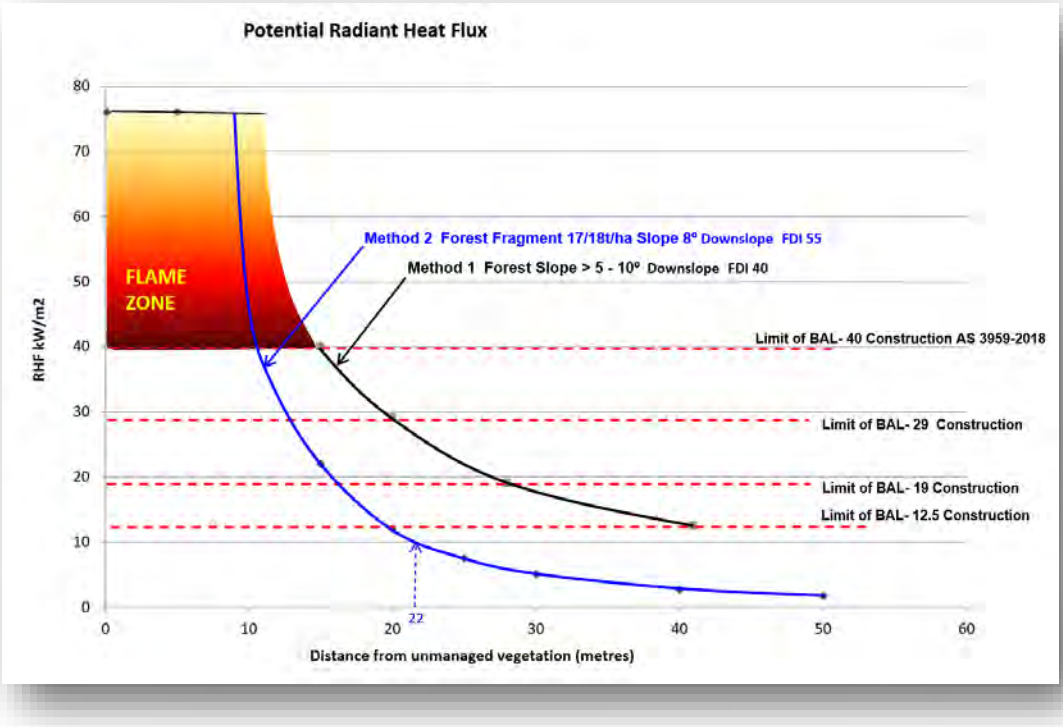


**Figure 10. Radiant Heat Flux Predicted by BRC 2019 and Methods 1 and 2 of AS3959**.

Site specific fire modelling in accordance with Method 2 of AS3959-2018 predicts lower radiant heat flux (RHF) values than Method 1.

With 23m separating the existing building from the closest edge of hazard, BAL 12.5 construction under AS3959 - 2018 is shown to be viable.

The significance of the radiant heat flux levels discussed is shown below in Table 5.

| Radiant Heat Flux (kW/m²) | Likely Effects |
|---|---|
| > 40 - 110 | Flame Zone. Even the strongest toughened glass fails. |
| 29 - 40 | Latest technology in toughened glass may survive. Most will not. Timber ignites without pilot flame. Limit of BAL-40 Construction AS3959 - 2018. |
| 29 | Ignition of timbers without piloted ignition (3 minutes exposure) during the passage of a bushfire. Most types of toughened glass could fail. Limit of BAL-29 Construction AS3959 - 2018. |
| 19 | Screened float glass could fail during the passage of a bushfire.Limit of BAL-19 Construction AS3959 - 2018. |
| 12.5 | Standard float glass could fail during the passage of a bushfire. Limit of BAL-12.5 Construction AS3959 - 2018. Some timbers can ignite with prolonged exposure and with pilot ignition sources (eg embers) |
| 10 | Critical conditions. Firefighters not expected to operate in these conditions. Considered life threatening in under a minute in protective equipment. Fabrics inside a building could ignite spontaneously with long exposures. |
| 7 | Likely fatal to unprotected persons after exposure of several minutes. |
| 4.7 | Extreme conditions. Firefighter in protective clothing will feel pain after 60 seconds exposure. |
| 3 | Hazardous conditions. Firefighters expected to operate for a short period (10 minutes). |
| 2.1 | Unprotected person will feel pain after 1 minute exposure - non fatal. |

**Table 5. Significance of various RHF levels** (Source: NSW RFS, 2006)

# 7.0 Bushfire Protection Measures in Combination

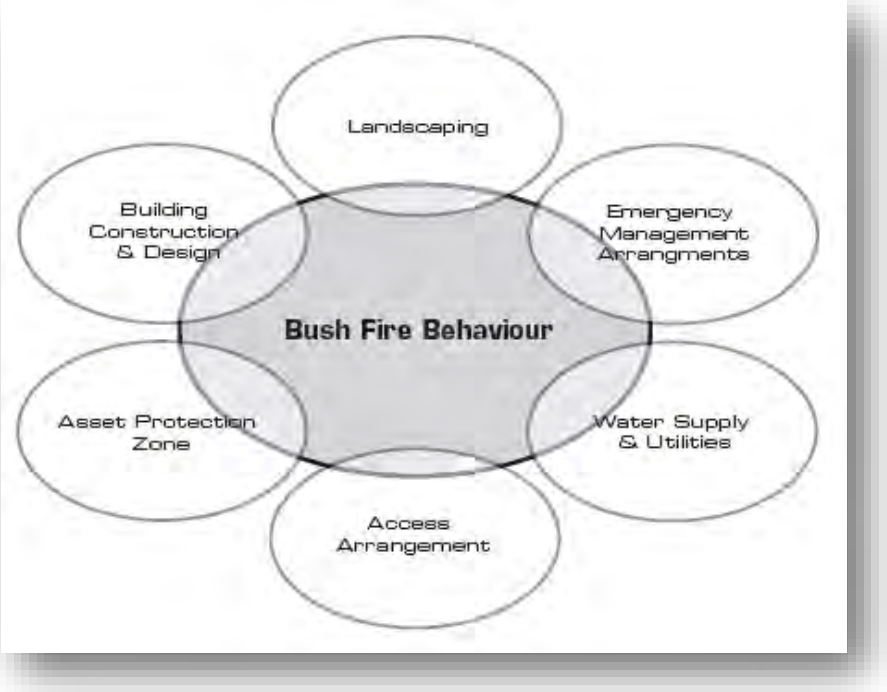


**Figure 11. Bushfire Planning Measures in Combination (Source: NSW RFS, 2006)**

Figure 11, taken from *Planning for Bushfire Protection* (NSW Rural Fire Service, 2006) illustrates that there are other factors and measures which need to be integrated to mutually support one another to provide protection against bushfire.

Simply removing the hazard (bushland) is one possible way of removing risk to life and property, but this approach is not desirable. The safety of life and property can be achieved whilst retaining the natural amenity and value of bushland areas, provided these integrated bushfire protection measures are applied.

## 7.1 Building Construction and Design

The construction level under AS3959-2018 for the gymnasium will be to a minimum of BAL 12.5 under AS3959-2018.


**Figure 12. The gymnasium will be a building within a building, complying with BAL 12.5 of AS3959**

## 7.2 Asset Protection Zones and Landscaping

Asset protection zones are the most strategically valuable defense against radiant heat and flame, and to a lesser extent embers.

The landscaping plan shall maintain an "Inner Protection Area" (IPA) for the entire unbuilt area of new Lots, effectively free of available fuel.

- Plants retained in or introduced into the IPA should be selected based on low combustibility, by virtue of high moisture content, low volatile oil content, high leaf mineral levels, large fleshy leaves, absence of shedding bark.

- Plant arrangement is just as important as low combustibility. Plants should be placed so as to minimize either vertical or horizontal connectedness of plant material.
- Combustible vegetation shall not be allowed to come into contact with combustible parts of buildings.
- Trees should not be allowed to directly overhang roof lines.
- Regular yard maintenance should be undertaken to remove available fine fuels and debris, particularly throughout the fire season.

An Outer Protection Area involves removal of the understorey so as to deprive an advancing fire front of its fuel continuity, and thereby collapsing the fire front. In this case the APZ recommended for the site will be constructed and maintained as IPA.

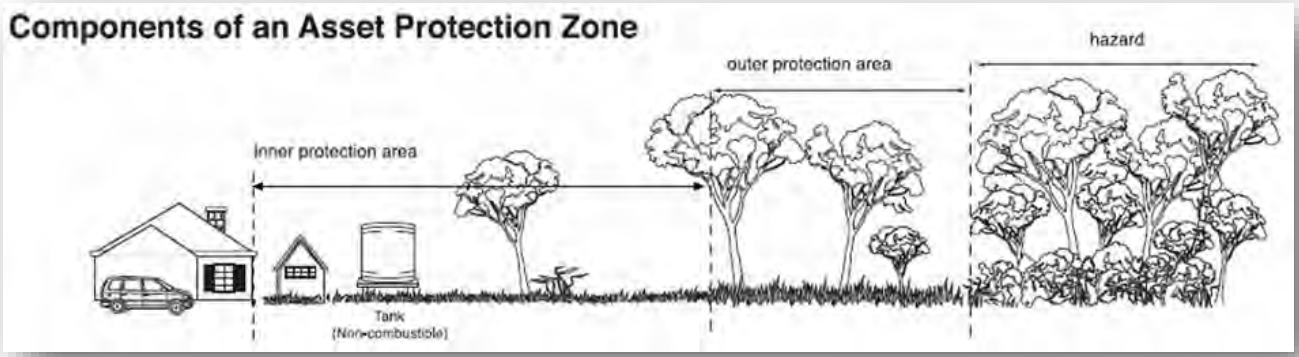


**Figure 13. Components of an Asset Protection Zone (APZ)**

## 7.3 Access and Egress Management

The site is within approximately 4km by road of the nearest Queensland Fire Department Station (Windsor Fire Station).

Access and egress for fire fighters is provided in accordance with the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).*

Obstructions to the access to the rear of the building should be avoided for firefighters on foot.

## 7.4 Water Supplies and Utilities

Water supply for the development is be connected to Council mains reticulated supply, with hydrants installed in accordance with AS2419.1-2005 and with volumes and pressure under the control of Council water utilities provider.

Compliance will be achieved against the acceptable outcomes specified under the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).*

Any reticulated or bottled gas shall be installed and maintained in accordance with AS1596 – 2002. Metal piping is to be used. Any fixed LPG tanks shall be kept clear of flammable materials, and located on the non hazard side of the building. Any gas cylinders which need to be kept close to a building shall have release valves directed away from the building. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

## 7.5 Fire Fighting and Emergency Management Arrangements

The development is serviced by the existing hardstand carparks and driveway for Emergency Services use. The maintenance of a mown or slashed grass surface around the site safe defendable space around key assets in the unlikely event of bush fire.

Obstructions to access onto individual Lots and the rear of buildings should be avoided.

Site operators shall be made aware of the existence of this Plan, and their need to comply with the relevant provisions, in particular building construction, APZ maintenance, optimizing access around buildings and emergency response preparations.

Site operators shall decide on their Stay and Defend / or Go Early strategy before each fire season so as to ensure this decision is not made too late, when smoke and emergency vehicles prevent an orderly evacuation. Staying to defend is a viable option for the proposed development.

Site operators staying to defend should ensure that they have adequate protective clothing , including full length cotton or denim garments, sturdy boots, gloves, smoke mask (minimum P2 with valves) and smoke goggles.

Appendix 2 provides guidance for Residents' Emergency Management Planning in relation to bushfire.

# 8.0 Assessment of proposal against Brisbane City Plan 2014 (Part 8.2.5 Bushfire Overlay Code, Sections A and B)

| Performance Outcomes | Assessment and Acceptable Outcomes |
|---|---|
| **8.1 (PO1)**<br>Development:<br>a. minimises the bushfire hazard;<br>b. maximises the protection of life and property from bushfire;<br>c. addresses the bushfire hazard determined by a bushfire hazard assessment;<br>d. where not in compliance with an approved bushfire management plan or development footprint:<br>i. achieves a bushfire attack level that is less than or equal to BAL-29; or<br>ii. achieves a bushfire attack level that is less than or equal to BAL-12.5 if for vulnerable uses, difficult to evacuate uses, assembly uses, essential community infrastructure or involving the handling or storage of hazardous chemicals exceeding amount specified in Table 8.2.5.3.D; or<br>iii. if on a site of an existing premises and not a vulnerable use, difficult to evacuate use, assembly use, essential community infrastructure or involving the handling or storage of hazardous chemicals exceeding amounts specified in Table 8.2.5.3.D: | **Acceptable Outcome AO1.1 is applied in that**<br>Development is designed and sited in compliance with:<br>~~a. this bushfire management plan relevant to the full nature of the uses, which identifies the level of bushfire hazard and the location of hazardous vegetation affecting the development; or~~<br>~~b. an approved development footprint identifying the development footprint plan and bushfire management footprint plan; or~~<br>c. a bushfire hazard assessment and bushfire management plan prepared in accordance with the Bushfire planning scheme policy which:<br>i. is undertaken by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation;<br>ii. determines the relevant bushfire attack level for that part of the site in which development is proposed; |

| | |
|---|---|
| A. does not extend beyond the bounds of the existing development footprint;<br>B. does not increase the GFA by 10% or 100m , whichever is the greater;<br>C. does not involve a new use on the site;<br>D. is supported by a bushfire risk assessment prepared by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation,which demonstrates that the bushfire risk is acceptable. | iii. identifies the location of hazardous vegetation that poses a bushfire risk to the development.<br><br>**Acceptable Outcome AO1.2 is applied in that**<br>Development where not in compliance with an approved bushfire management plan or development footprint identifying the development footprint plan and bushfire management footprint plan:<br>a. achieves a bushfire attack level that is less than or equal to:<br>i. BAL-29; noting that<br>ii. BAL-12.5 for vulnerable uses, difficult to evacuate uses, assembly uses, and occupants of the building are readily relocated and an acceptable degree of protection to the building provided. |
| **8.2 (PO2)**<br>Development other than an extension to an existing building is sited, designed and maintained taking account of all relevant factors affecting the bushfire hazard on the site, including site topography, aspect, location and type and structure of vegetation to:<br>a. minimise the number of buildings and people working, living or visiting a site exposed to bushfire risk;<br>b. protect life during bushfire;<br>c. increase the survival of buildings and structures during a bushfire;<br>d. minimise bushfire | **Acceptable Outcome AO2.1 is applied in that**<br>Development is:<br>~~a. sited in compliance with an approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan relevant to the full nature of the use; or~~<br>~~b. if there is no approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan, where on a lot greater than 10 hectares, located in the area of lowest risk from bushfire on the site; and~~<br>c. if there is no approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan, where on a lot greater than 2,500m :<br>i. located away from ridgelines in compliance with Figure a;<br>ii. located on land with a gradient less than 15%;<br>iii. preferably located on east- to south-facing slopes and avoiding north- to west-facing slopes unless the slope is clear of vegetation and is not located in the High hazard buffer area sub-category or the Medium hazard buffer area sub-category.<br><br>**Acceptable Outcome AO2.2 is applied in that**<br>Development is:<br>Development is sited within a building protection zone more than 20m from the outermost projection of the main building or any habitable structure. This is an existing building. ~~or to the maximum extent possible on sites less than 2500m where a building protection zone would extend into neighbouring properties~~; and |

| | |
|---|---|
| | a. clusters buildings and structures in the building protection zone;<br>~~b. designs the inner 10m of the building protection zone to maintain a very low fuel state in the first 10m, and a fuel reduced state to the extent of the building protection zone, in compliance with Figure b and Figure c.~~ |
| **8.3 (PO3)**<br>Development utilises fencing that:<br>a. does not contribute to the spread of bushfire;<br>b. in an urban area or in proximity to accommodation uses,<br>contributes to reducing bushfire hazard to a building;<br>c. facilitates the safe movement of fauna. | **Acceptable Outcome AO3.1 is applied in that**<br>Development for a fence within 20m of any building ~~used for accommodation~~ comprises non-combustible or fire retardant materials..<br><br>**Acceptable Outcome AO3.2 is applied in that**<br>Development for a fence:<br>a. incorporates gaps and spacing to allow the safe movement of fauna; or<br>b. is designed to enable fauna to climb the fence. |
| **8.4 (PO4)**<br>Development ensures that the location, siting, and design of development and associated driveways and access routes:<br>a. avoid potential for entrapment during a bushfire;<br>b. facilitate safe and efficient emergency services to access and egress the site during a bushfire;<br>c. enables safe evacuation of the site during a bushfire for site occupants. | **Acceptable Outcome AO4 is applied in that**<br>Development ensures that:<br>~~a. the length of driveways or access routes does not exceed 70m between the most distant part of any occupied building and the nearest part of the public road~~; or<br>b. where the length of the driveway or access route exceeds 70m:<br>i. the driveway or private access route design meets the requirements of emergency vehicles in compliance with Table 8.2.5.3.C;<br>ii. the driveway or access route provides all weather access for two-wheel-drive vehicles;<br>iii. where relying on a private access route or driveway longer than 200m to reach a public road, a safe alternative access and egress route is provided. |
| **8.5 (PO5)**<br>Development has adequate road access to the site for emergency vehicles and safe evacuation in a bushfire. | **Acceptable Outcome AO5 is applied in that**<br>Development has frontage to a constructed, all-weather public road capable of carrying emergency service vehicles. |
| **8.6 (PO6)**<br>Development makes adequate provision for fire-fighting requirements, including water supply. | **Acceptable Outcome AO6 is applied in that**<br>Development ensures that:<br>a. a reliable reticulated water supply and water pressure is available for fire-fighting requirements with water supply and pressure, which is in compliance with the standards specified by the relevant utilities provider. |
| **8.7 (PO7)**<br>Development ensures that the water supply provided for fire-fighting is safely located and freely accessible for fire-fighting purposes at all times. | Development ensures that:<br>a. a reliable reticulated water supply and water pressure is available for fire-fighting requirements with water supply and pressure, which is in compliance with the standards specified |

| | |
|---|---|
| | by the relevant utilities provider and complies with Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).* |
| **8.8 (PO8)**<br>Development through the siting, design, and construction of buildings, access routes and fire maintenance trails, and ongoing site management:<br>a. provides effective separation from sources of bushfire risk;<br>b. responds to the bushfire risk in that location;<br>c. maintains the safety and protection of people and property over time;<br>d. maximises the protection of vegetation in areas of high biodiversity value. | **Acceptable Outcome AO8 is applied in that**<br>Development locates building protection zones as shown on Figure b and Figure c, driveways and access routes and any fire maintenance trails:<br>a. outside of the Biodiversity areas overlay; or<br>b. within the existing disturbed, degraded or cleared areas, using natural fire breaks to avoid vegetation clearing and to avoid or otherwise minimise fragmentation or incursions into a habitat area, fauna movement corridor or remnant vegetation. |
| **8.9 (PO9)**<br>Development:<br>a. provides for safe and efficient evacuation and emergency services access to the site during a bushfire;<br>b. does not concentrate large numbers of people or locate significant worker or resident populations in an area of bushfire hazard;<br>c. avoids locating the following uses in an area of bushfire hazard:<br>i. vulnerable uses;<br>ii. difficult to evacuate uses;<br>iii. assembly uses. | **Acceptable Outcome AO9.1 is applied in that**<br>Development:<br>~~a. does not increase the number of people living, working on or visiting the site by more than 10%; or~~<br>b. increasing the number of people living, working on or visiting the site, or vulnerable uses, difficult to evacuate uses or assembly uses by more than 10%, implements the recommendations of an approved bushfire management plan, which identifies measures that address the identified bushfire risk relevant to the development.<br><br>**Acceptable Outcome AO9.2 is applied in that**<br>Development provides alternative access routes that meet the road design requirements of items 1—7 in Table 8.2.5.3.C, for the following:<br>a. an extension to existing premises which increases the number of people living, working on or visiting the site by more than 10%;<br>b. the introduction of vulnerable, difficult to evacuate or assembly uses. |
| **8.9 (PO10)**<br>Development does not cause:<br>a. unacceptable risk to people, property and the environment due to the impact of bushfire on the storage or handling on site of hazardous chemicals;<br>b. excessive danger or difficulty to emergency services for emergency response or evacuation. | **Acceptable Outcome AO10 is applied in that**<br>Development does not involve the manufacture or storage of dangerous chemicals in bulk. |
| **8.9 (PO11 – PO14)**<br>Development involving essential community infrastructure, or where a park landscaping plan is required. | Development does not involve essential community infrastructure, or a park landscaping plan. |

# 9.0 Assessment of proposal against State Planning Policy – Natural hazards, risk and resilience 2019

State Planning Policy – Natural hazards, risk and resilience (SPP, December 2013, latest version December 2019) replaces State Planning Policy 1/03 *Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.* The SPP Guideline – Natural hazards, risk and resilience – bushfire provides development assessment benchmarks to ensure that State interests are appropriately considered in relation to natural hazards, including bushfire hazard areas. These provisions serve as general guidelines to either avoid or otherwise adequately mitigate bushfire risk.

| **Interim Development Assessment Benchmarks** | **Solutions Provided** |
|---|---|
| (3) Development avoids natural hazard areas or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level, and | This Plan establishes the nature and potential severity of the adjacent hazard and provides a combination of bushfire protection measures to mitigate risk including construction, asset protection zones, access, water supplies and utilities, and emergency management arrangements. |
| (4) Development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities, and | The combined effect of the bushfire protection measures specified by this Plan serves to reduce risk to a low level and ensure resilience and preparedness for unplanned fire so that the response or recovery capacity and capability of emergency services is not unduly burdened or impeded. This Plan serves to protect life and property from bushfire without depending on emergency services for protection. |
| (5) Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties, and | The development does not increase the nature of the existing hazard, and site layout and landscaping on the site is designed to moderate the exposure of buildings. The potential for damage to other properties is not increased as a consequence of the proposed development. |
| (6) Risks to public safety and the environment from the location of hazardous materials and the release of these materials is avoided, and | Hazardous materials are not stored in quantities or locations on the site which would pose a risk to the public or the environment. |
| (7) The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced. | The development maintains the natural processes and protective function of vegetation that previously existed for the site. |
| | |

# 10.0 Recommendations

1. The proposed gymnasium will be constructed to a minimum of BAL 12.5 under AS3959-2018. This report remains valid and independent of any work provided by a registered Fire Engineer involved in assessing the proposal against National Construction Code Specification 43.

2. The APZ for the building will be maintained in the form of IPA.

*3.* Reticulated water supplies will be fully installed in accordance with Council water utilities provider with sufficient flow and pressure characteristics for fire fighting purposes at all times (minimum 10litres a second at 200kPa). Compliance will be achieved against the acceptable outcomes specified under the Queensland Fire and Emergency Services Guideline (*Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots, 2015).*

4. Site operators will be made aware of the existence of this Plan and their responsibilities outlined within it, in particular construction, asset protection zone and emergency management.

# 11.0 Summary

The area of "hazard" faced by the proposed development is marginal, but is partially aligned with the direction of the worst case fire weather conditions for the region. The likelihood of wildfire at some time is considered possible, and requires some protection measures being taken. This Plan demonstrates compliance with legislative requirements of State and Local Government, and the BCA.

Along with adequate water supply and emergency management arrangements, compliant construction under AS3959-2018 and APZs to reduce the exposure of life and property to bushfire, these combined measures assist prepare residents for the possibility of fire in the area.

# 12.0 References


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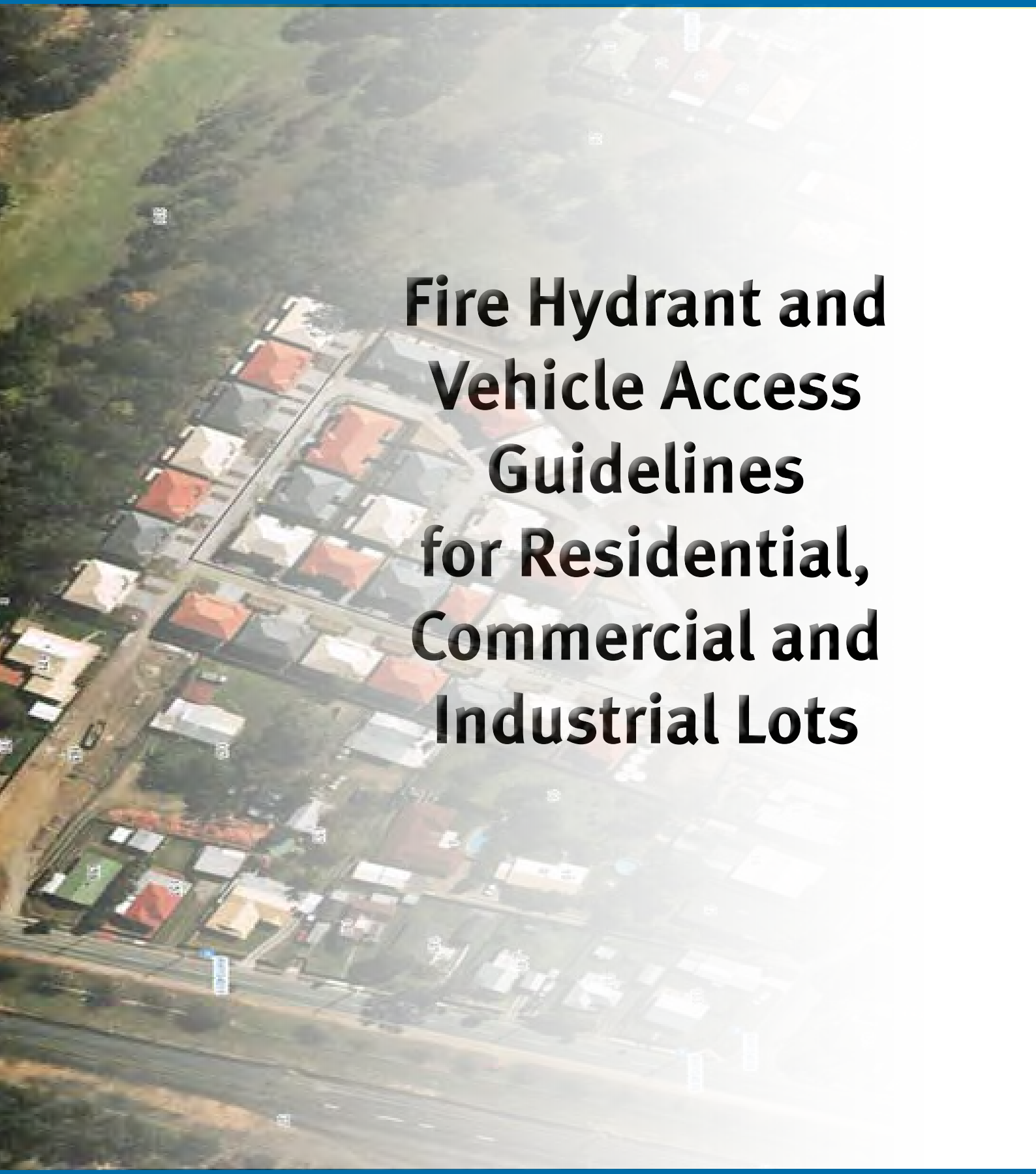
# Appendix 1

# Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots

**Source: Queensland Fire and Emergency Services (2015)**



# Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots

Queensland Government

# 1. Table of Contents



## Glossary of Terms

In this document, the terms are limited to the meanings described below.

| | |
|---|---|
| Building: | A building is a fixed structure that is wholly or partly enclosed by walls or is roofed. |
| Structure: | For this document refer to definition of a Building. |
| Fire Appliance: | A vehicle used to combat a fire. A typical fire appliance (a pumper) is approximately 2.5m wide, 7.7m long and it is typically used in urban residential areas. Further specifications of fire appliances and larger appliances are available from the QFES if design solutions are required for specific situations. |
| Hydrant: | An assembly installed on a branch from a water pipeline, which provides a valved outlet to permit a supply of water to be taken from the pipeline for fire fighting. These include above and below ground hydrants. |
| QFES: | Queensland Fire and Emergency Services. |
| Material Change of Use: | As per the *Sustainable Planning Act 2009* |
| Reconfiguration of a Lot: | As per the *Sustainable Planning Act 2009* |
| Reticulated Water Supply: | Is a permanent infrastructure provided to deliver treated water to lots from an Urban Utility Authority through a system of pipes, mains, control valves etc. for household or industrial use. It will supply uninterrupted water at a positive pressure for fire fighting purposes. |
| Road or Carriageway: | Construction which is specifically designed for all vehicle travel (may or may not include a sealed top surface layer). |
| A Constructed Road: | For the purpose of defining widths, includes the part of the road reserve set aside for traffic and also includes roll-over kerbs but does not include the remaining part of the road reserve. |
| Trafficable Width: | Refers to that width of the constructed road that is unimpeded by encroachments such as street furniture or landscaping, and is available for free movement of fire appliances. |

# 1. Scope

For applications seeking development approval for material change of use or reconfiguring a lot for the purpose of building, where streets and common access ways are proposed regardless of building classification.

Where reticulated hydrant systems and vehicle access are not currently required under the *Sustainable Planning Act 2009* (SPA), the *Building Act 1975* or Building Code of Australia (BCA) the measures in this document should be adopted.

Australian Standard (AS) 2419.1 2005 Appendix B is a minimum standard of design and performance for the State of Queensland. In a Local Government Authority where a local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

For fire appliance access, a minimum width and height clearance for roadways is required. Constructed roads must comply with Government legislation such as the "Road Planning and Design Manual".

# 2. Introduction

The Queensland Fire and Emergency Services (QFES) is the primary provider of fire and rescue services throughout Queensland. The QFES is responsible for community safety, the protection of people, property and the environment from fire and chemical incidents and, in conjunction with other agencies, the rescue of people trapped in vehicles, buildings and other emergency situations.

The loss of life and property damage by fire in residential, commercial and industrial premises is a major concern to the QFES, and for this reason, these lot reconfigurations need to be designed to provide ready access for fire appliances, whilst providing a fire fighting water supply from a Hydrant System.

Water supply and access requirements for material change of use or reconfiguring a lot within this document are a planning tool and advice for building and developer applicants, it is not the intent of this document for land development applications to be referred to the QFES. They outline fire safety requirements to enable the QFES to efficiently manage fire incidents.

This document reflects Queensland Government policy of promoting sustainable development that achieves economic, social and environmental objectives, including safety. The provisions are flexible allowing planners and designers to economically achieve safety objectives without compromising aesthetics or amenity.

# 3. Where Do These Guidelines Apply?

These guidelines apply to all material change of use or reconfiguration of a lot that will include streets and common access ways within a common private title in areas serviced by reticulated water within Queensland, for residential buildings, both attached and detached commercial or industrial buildings that are not covered in other legislation or planning provisions.

For example, this would apply to planned townships or reconfigurations regardless of current fire service intervention.

# 4. Water Supply Specification

Installed reticulated hydrant systems are to be located on roadways or access ways for all material change of use and reconfigured lots for fire fighting purposes as per AS 2419.1 2005 Appendix B that provides a minimum standard for hydrant intervals. In a Local Government Authority where a Local Water Authority specifies a design and performance criteria above the requirements of AS 2419.1 2005 Appendix B, the Local Water Authority requirements will be adopted.

For the installed reticulated hydrant systems the minimum water flow rate and pressure is to be 10 L/S @ 200 Kpa as per AS 2419.1 2005 Table 2.2. In a Local Government Authority where a local Water Authority specifies a flow rate and pressure above the requirements of AS 2419.1 2005 Table 2.2, the Local Water Authority requirements will be adopted.

## 4.1 Hydrant Provision:

| Hydrant Provision | |
|---|---|
| **Expectation** | **Acceptable Outcomes** |
| Where reticulated water is available, operable hydrants are to be provided. | Hydrants above or below ground should be provided and maintained to the minimum required performance standard as per AS 2419.1 2005. |

*Rationale:*

Firefighters use water as a prime extinguishing medium for structure fires. Reticulated water mains have hydrants placed at regular intervals to enable firefighters to connect into the reticulated system. The water is pressurised by pumps in the fire appliance and delivered via hoses to the fire.

Figure 1 illustrates hydrant locations on reticulated water mains.

*Figure 1 – Reticulated Hydrant System*


*Figure 2 – Use of Hydrant System*

## 4.2 Hydrant Markers

| Hydrant Markers | |
|---|---|
| **Expectation** | **Acceptable Outcomes** |
| Hydrants are suitably identified so that firefighters can locate them at all hours. | Blue cats eyes are preferred for sealed roads. Marker posts at the fence line should be used to identify hydrants where there is an unsealed road as road (HR) or path (HP) hydrants. The Figures 3-6 are examples of marker locations. |

*Rationale:*

Firefighters need to quickly locate water supplies in emergencies. Hydrant indicators need to be visually identifiable from both directions by the approaching fire appliance crews and must identify the location of the hydrant.


*Figure 3 – Hydrant Markers*

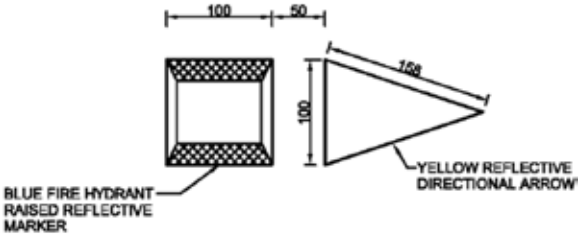
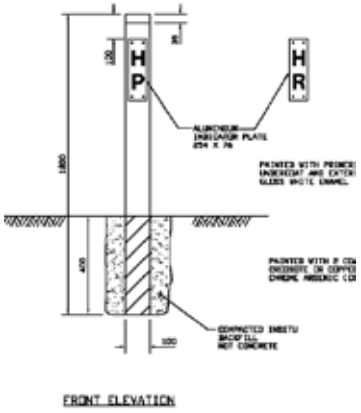



*Figure 5 – Marker/directional arrow spacing detail*




*INDICATOR PLATES*

- *254 x 76 aluminium indicator plate.*
- *Fix top and bottom with galvanised clouts.*
- *HP indicates hydrant located in footpath.*
- *HR indicate hyrdant located in road carriageway.*

*Figure 4 – Hydrant marker posts*

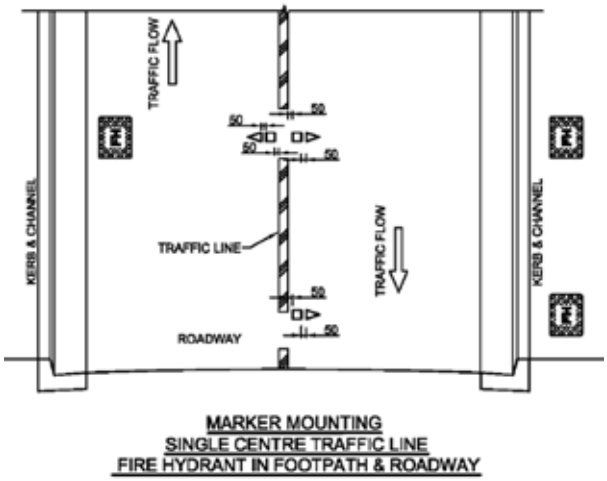



*Figure 6 – Location of cats eyes on a sealed roadway*

## 4.3 Hydrant Location

| Hydrant Location | |
|---|---|
| **Expectation** | **Acceptable Outcomes** |
| Hydrants are located in positions that will enable firefighters to access water safely, effectively and efficiently. | **Residential Streets and Accessways**<br>Above or below ground fire hydrants should be provided at not more than 120m intervals along residential streets and at each street intersection. Above ground fire hydrants may be single outlet.<br><br>**Commercial and Industrial Streets and Accessways**<br>Within streets serving commercial properties such as factories, warehouses and offices, above or below ground fire hydrants should be provided at not more than 90 m intervals and at each street intersection. Above ground fire hydrants should have dual valved outlets. |

*Rationale:*

Upon arriving at a structure fire, firefighters site the fire appliance with considerations to safety, access to the fire, other responding appliances and accessible water supply for fire fighting purposes. Firefighters have an expectation that fire hydrants will be located on reticulated water systems no more than 120 metres apart as per AS 2419.1 2005, Appendix B. QFES equipment, procedures and the training of personnel is based on this preferred standard of fire hydrant placement and associated access requirements.

Note: Hydrants should be located at each intersection. With this in mind hydrant interval distances should not exceed 120 metres.

*Figure 6 – Hydrant System design to minimum standards*

# 5. Vehicle Access Requirements

Fire service vehicular access is to enable the service to intervene to fight the fire, assist with evacuation and stop the spread of fire to another building.

A minimum roadway clearance of 3.5m wide by 4.8m high is required for a fire appliance. Constructed roads must comply with Government legislation as specified in the "Road Planning and Design Manual".

## 5.1 Road Width and Height

| Road Width and Height | |
|---|---|
| **Performance Outcomes** | **QFES Acceptable Outcomes** |
| Roads are wide enough for fire appliances to gain access to a safe working area close to dwellings and water supplies whether or not on-street parking spaces are occupied. | Constructed roads must be as specified in the "Road Planning and Design Manual". |

*Rationale:*

Fire appliances often used in residential areas are typically 2.5 m wide and 7.7m long. The road width must allow room for safe passage of a fire appliance with additional margins for human error and safe clearances.

## 5.2 Road Construction

| Road Construction | |
|---|---|
| **Performance Outcomes** | **QFES Acceptable Outcomes** |
| Roads must be constructed to facilitate the safe passage of a laden fire appliance in all weather conditions. | Roads must be constructed to a standard so that they are accessible in all weather conditions and capable of accommodating a vehicle of 15 tonnes for the trafficable road width as specified in the "Road Planning and Design Manual". |

*Rationale:*

Roads must be trafficable in all weather conditions. Most appliances in residential areas currently weigh less than 13 tonnes.

## 5.3 Road Grades

| Road Grades | |
|---|---|
| **Performance Outcomes** | **QFES Acceptable Outcomes** |
| Grades of roads must facilitate the safe passage of fire appliances. | The average grades, dips, and exit angles must be addressed as specified in the “Road Planning and Design Manual”. |

*Rationale:*

Steep slopes affect the free movement of appliances and hinder safe fire fighting. Severe short dips may limit access due to the overhang of the body from the wheels.

## 5.4 Turning Bays

| Turning Bays | |
|---|---|
| **Performance Outcomes** | **QFES Acceptable Outcomes** |
| Provision is made for fire appliances to turn at the end of dead end roads. | Constructed roads more than 60m in length from the nearest intersection must have a turning circle with a minimum radius of 8m (including roll-over kerbs if they are provided). Other solutions using T or Y heads of specified dimensions are also appropriate. See figure 2 in the “Road Planning and Design Manual” . |

*Rationale:*

It is dangerous for emergency vehicles to be required to reverse along roads for excessive distances in urban areas. Turning is normally carried out after the incident is under control when emergency movement is not required. Even then, large appliances reversing in residential areas create safety concerns. Fire appliances occasionally need to seek an alternative route necessitating a 180 degree turn in emergency conditions. Using a three point turn, fire appliances require a turning circle radius of 8m to turn safely. Alternative designs using specified T or Y heads are also appropriate. This area needs to be clear of obstructions.

*Turning Examples*

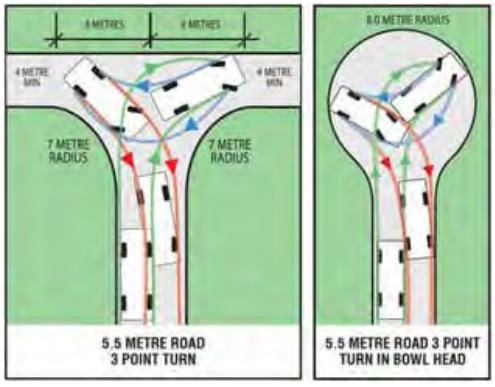



*Figure 7 – Vehicle Turning Provisions*

## Disclaimer

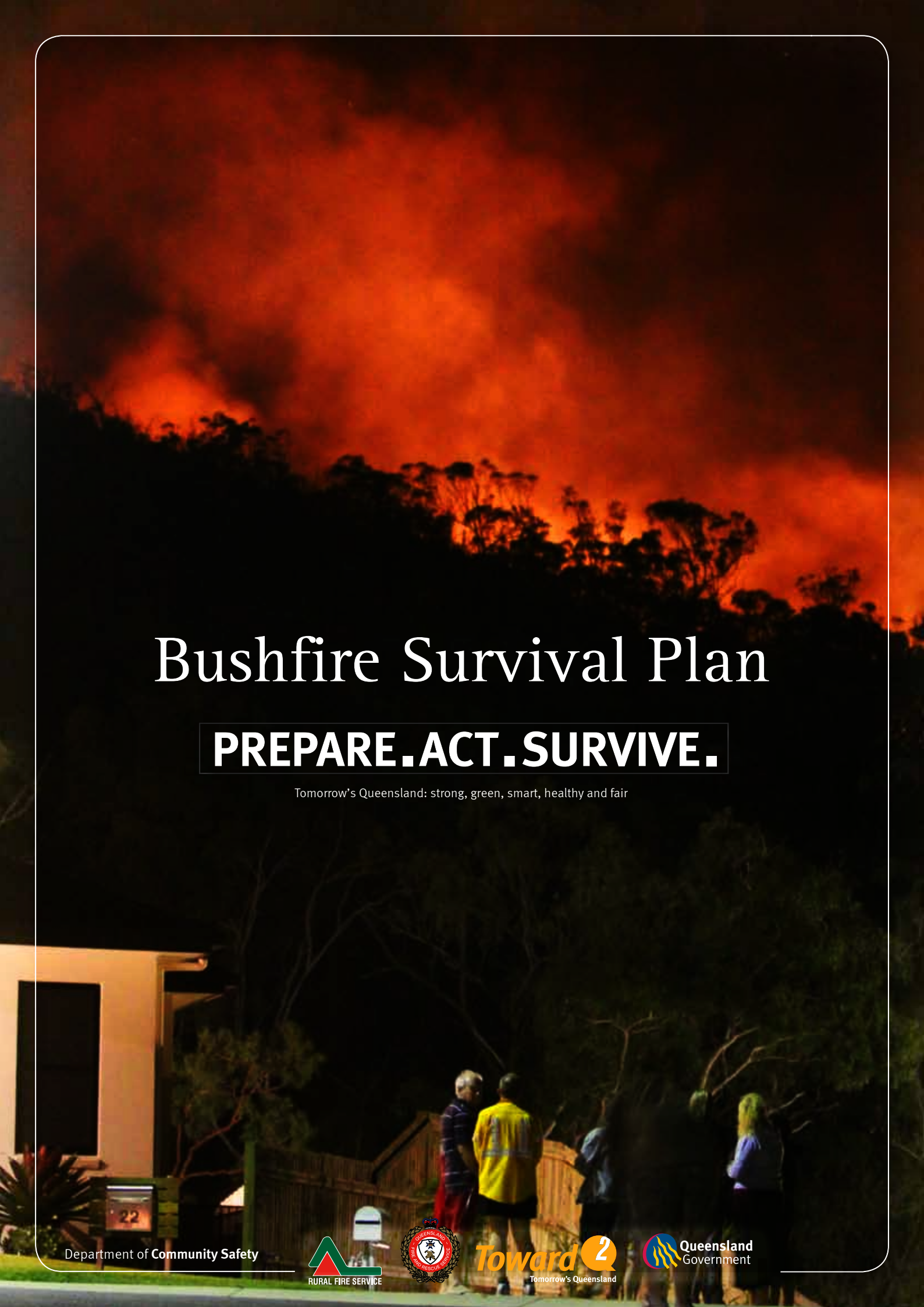
*Any representation, statement, opinion or advice expressed or implied in this publication is made in good faith but on the basis that the State of Queensland, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement, opinion or advice referred to above.*

*Version 11/2015*

# Appendix 2

# Bushfire Survival Plan Guidelines

**Queensland Fire and Emergency Services**



# Bushfire Survival Plan

## PREPARE.ACT.SURVIVE.

Tomorrow's Queensland: strong, green, smart, healthy and fair

Department of **Community Safety**

RURAL FIRE SERVICE

Toward 2 Tomorrow's Queensland

Queensland Government

## You must PREPARE. ACT. SURVIVE.

Your main priority is to ensure that you and your family are safe. During a bushfire you and your family's survival and safety depend on your preparations, and the decisions you make.

The lives of you and your family are more important than any building.

Whether your plan is to leave early or stay, you must prepare your home and property to increase their level of resilience and your chances of survival.

## Bushfires in Queensland

The fire season in Queensland normally commences in the far north of the state in July and progresses through to southern areas as spring approaches. The fire season can extend through to February in southern and far south-western Queensland. These time frames can vary significantly from year to year, depending on the fuel loads, long-term climate and short-term weather conditions in each area.

There are four key considerations for dealing with bushfire:

- The safety of you and your family.
- The resilience of your property.
- The protection of irreplaceable valuables and important documents.
- The maintenance of adequate levels of insurance.

This document will provide you with information about the things you need to consider to prepare yourself and your home for the bushfire season, and how to make your own personal Bushfire Survival Plan.

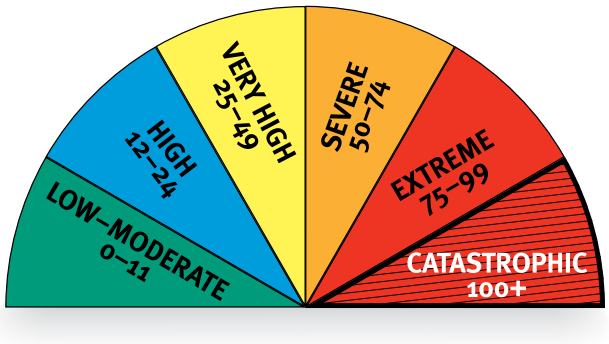
It is your responsibility to prepare yourself, your family and your home for the threat of bushfire.

## Understand your risk

The first step in planning to survive a bushfire is to understand your own level of risk. By understanding your own level of risk you will be able to make informed decisions that are right for you and your family. Included with this Bushfire Survival Plan is a self-assessment tool that will enable you to assess the risk level associated with your property. If you are still unsure of your level of risk or require assistance contact your local fire station for more information. To book a Bushfire Safety presentation call 1300 369 003.

## Fire danger ratings

The increased frequency of extreme bushfires in Australia in the last 10 years and the recent experience of the Black Saturday fires in Victoria have encouraged fire services throughout Australia to introduce new levels of Fire Danger Rating (FDR). A lift-out chart of the FDR system is contained within this document. Display it in a prominent place in your home or keep it with your Bushfire Survival Plan.



### Catastrophic fire danger rating

The highest level is catastrophic. On a day of catastrophic FDR leaving early is the only option to ensure your survival. You must relocate early to a safer location, hours or the day before a fire occurs. Under no circumstances will it be safe to stay with your property.

### Extreme fire danger rating

The second highest level is extreme. Should a fire occur in your area on a day of extreme FDR leaving early will always be the only option. Staying can only be considered for homes that:

- Have been designed and constructed specifically to address the threat of bushfire.
- Have been maintained to those levels and are currently well prepared.
- Can be actively defended by people with the skills, knowledge and confidence to implement a well-rehearsed Bushfire Survival Plan.

### On days of catastrophic or extreme FDR:

- Fires are likely to be uncontrollable, unpredictable and very fast moving with highly aggressive flames extending high above tree tops and buildings.
- Thousands of embers may be violently blown into and around homes causing other fires to start rapidly and spread quickly up to 20 kilometres ahead of the main fire.
- Fire can threaten suddenly, without warning, and the heat and wind will make it difficult to see, hear and breathe as the fire approaches.
- People in the path of such fires will almost certainly be injured or die and a significant number of homes and businesses will be destroyed or damaged.
- Even well-prepared and constructed homes will not be safe.
- Expect power, water and phone networks to fail as severe winds bring down trees, power lines and blow roofs off buildings well ahead of the fire.

It is vital that you understand on these days that your survival will depend solely on how well you have prepared and how decisively you act.

Leaving late can be
a deadly option.
If you are in any doubt,
make the decision to
LEAVE EARLY.

## What will you do?

At all times you need to **PREPARE.ACT.SURVIVE.**

When the fire danger rating is **'catastrophic'** leaving early is the safest option.

When the fire danger rating is lower than **'catastrophic'**, one of the most important decisions you need to make is whether you will leave early or stay with a well prepared property. This decision is the basis of your Bushfire Survival Plan.

The following questions may help you make the right decision for whether you will leave early or stay:

- Do you need to consider family members who are young, elderly or infirm?
- Are you physically and emotionally prepared to stay with your property?
- Do you have the knowledge, skills, and confidence to stay with your property?
- Is your home adequately constructed, maintained and prepared to withstand the impact of a fire? In other words, is your home prepared to withstand the impact of a bushfire?
- Do you have well-maintained resources and equipment to fight fire, and do you know how to use them?
- Do you have appropriate protective clothing to fight a fire?
- What will you do if a rapid onset fire leaves you with no time to leave? Where will you shelter?

## Leave early

If you plan to leave early then you must leave your home well before a bushfire threatens and travelling by road becomes hazardous. Your leave early preparations include:

**Step 1: Preparation** – your property should be well prepared for bushfire even if you intend to leave early.

**Step 2: What you will do** – make your Bushfire Survival Plan in accordance with your decision to leave early.

**Step 3: Make a contingency plan** – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

## Planning to stay

Planning is critical to successfully staying with your home may involve the risk of psychological trauma, injury or death.

**Step 1: Preparation** – your property must be able to withstand the impact of bushfire and well prepared to shelter you and your family.

**Step 2: What you will do** – make your Bushfire Survival Plan in accordance with your decision to stay.

**Step 3: Make a contingency plan** – the FDR, the preparedness of your home, a change in household circumstances, a change in your physical preparedness or unexpected visitors are some things that may require you to reconsider your Bushfire Survival Plan.

In making your decision to stay, here are a few things you need to consider.

- Is your property able to withstand the impact of a bushfire?
- Are you physically and emotionally prepared to stay with your property?
- Do you have well-maintained resources and equipment and do you know how to use them?
- Do you have appropriate protective clothing?
- Will your bushfire survival plan need to be different for weekdays, weekends or if someone is sick at home?
- Do you have a contingency plan?

## Preparing your Bushfire Survival Plan

Preparation is the key to survival. Being involved in a fire will be one of the most traumatic experiences of your life.

- Prepare yourself – you need to be both mentally and physically prepared to carry out your Bushfire Survival Plan.
- Prepare your Bushfire Survival Plan.
- Prepare your Bushfire Survival Kit.
- Prepare your Bushfire Relocation Kit.
- Prepare your property.

When writing your plan you need to consider:

- Have you made the right choice: to leave early or stay?
- Have you discussed your choice with your family, friends and neighbours?
- Who will take charge and lead other family members by carefully communicating the various tasks set out in the plan?
- If you have chosen to stay what will you do to protect your property when the fire arrives?
- What will you put in your Bushfire Survival Kit and where will you store it?
- Do your friends, family and neighbours know the details of your plan?

- What will you do if your Bushfire Survival Plan fails?
- Do you have an alternative option or contingency plan if your plan fails?
- Do you have a Neighbourhood Safer Place (NSP) you can go to as a last resort? For more information on NSPs see www.ruralfire.qld.gov.au.
- Is it safe to travel there?

If your decision is to leave early, you must include the following information or action items in your Bushfire Survival Plan:

- Monitor media outlets – radio, TV, mobile phone and internet for bushfire alerts.
- When will you leave?
- What will be your trigger for action?
- Will your plan be different for weekdays, weekends, or if someone is at home sick or injured?
- What will you take with you (Relocation Kit)?
- Where will you and your family go when you leave early?
- What route will you take to get there?
- What will you do with your pets?
- What will you do if there are consecutive or multiple **'catastrophic'** or extreme fire danger days?
- Will you go into work on days when the FDR is in the upper levels?
- Will you send your children to school when the FDR is in the upper levels?
- Will all members of your household leave early?
- What will you do to prepare your property?
- What is your contingency plan in the event that it is unsafe to leave?

If your decision is to stay you must include the following information or actions items in your Bushfire Survival Plan:

- Monitor media outlets – Radio, TV, mobile phone and internet.
- Locate your Bushfire Survival Kit.
- Put on protective clothing.
- Remain hydrated by drinking lots of water.
- Move any stock to fully grazed paddocks.
- Move cars to a safe location.
- Remove garden furniture, doormats and other items.
- Close windows and doors and shut blinds.
- Take down curtains and move furniture away from windows.
- Seal gaps under doors and window screens with wet towels.
- Place pets inside, restrain them, and provide water.
- Block downpipes and fill gutters with water.
- Wet down the sides of buildings facing the approaching fire front.
- Wet down decks and verandas.
- Wet down fine fuels close to buildings.
- Turn on sprinklers in garden before bushfire arrives.
- Fill containers with water; bath, sinks, buckets, wheelie bins, etc.
- Have ladders ready for roof space access (inside) and against roof (outside).
- Have generator or petrol pump ready.
- Start checking and patrolling for embers outside.

When the fire front arrives:

- Take all fire fighting equipment inside such as hoses and pumps as they may melt during the fire.
- Go inside and shelter away from the fire front.
- Patrol the inside of your home, including the ceiling space, for embers or small fires that may start.
- Drinks lots of water.
- Check family and pets.

After the fire front has passed:

- Wear protective equipment.
- Go outside once it is safe.
- Check for small spot fires and burning embers:
  - inside roof space
  - under floor boards
  - under house space
  - on veranda and decks

- on window ledges and door sills
- in roof lines and gutters
- garden beds and mulch
- wood heaps
- outdoor furniture
- sheds and carports

- Continue to drink lots of water.
- Stay at your property until the surrounding area is clear of fire.
- Monitor media outlets – radio, TV, mobile phone and internet.

You need to be both mentally and physically prepared to carry out your Bushfire Survival Plan

There may be other actions to include, depending on your individual property and the level of bushfire risk you are exposed to.

Include the whole family in creating your Bushfire Survival Plan. You and your family should be aware of the actions you will take at the various FDR levels and it is important to ensure this is incorporated into your Bushfire Survival Plan. The FDR for your area can be found on roadside signs and by visiting www.ruralfire.qld.gov.au and following the FDR link.

It is important that your Bushfire Survival Plan does not rely solely on receiving an alert.

Once you have completed your Bushfire Survival Plan, practise it regularly to ensure everyone involved knows exactly what to do in the event of a fire.

## Preparing your Bushfire Survival Kit

It is essential that you have a Bushfire Survival Kit if your choice is to stay with your property. This kit will ensure you and your family have the important equipment you need to stay. For a comprehensive list of equipment needed in a Bushfire Survival Kit see page 14.

## Preparing your Bushfire Relocation Kit

It is equally important to have a relocation kit if your choice is to leave early. This kit will ensure you and your family have important items and equipment required to relocate for the time needed. For a comprehensive list of items and equipment needed in a Bushfire Relocation Kit see page 15.

## Making a contingency plan

No matter whether your decision is to leave early, well before a bush fire threatens or to stay you should still have a contingency plan as part of your Bushfire Survival Plan. There are many scenarios to consider, such as what you will do if a rapid onset fire starts in your local area making roads impassable or travel particularly dangerous. You should have other options if road travel is not safe.

- Is your house well prepared?
- Can it provide you with protection from radiant heat?
- Have you identified a safer location such as an NSP?

Sheltering in a well-prepared property is far safer than being out in the open or in a vehicle

## Preparing your property

An unprepared property is not only at risk itself, but may also present an increased danger for your neighbours and their homes.

Planning is absolutely critical to safely staying with your home. Staying home involves the risk of psychological trauma, injury and death.

There are a number of measures you can take to prepare your home and property for bushfire. These include several preparations you must take annually prior to the bushfire season.

Your pre-season property preparations should include:

- Displaying a prominent house number.
- Ensuring there is adequate access for fire trucks to your property – 4 metres wide by 4 metres high with a turn-around area. Reduce vegetation loads along the access path.
- Mowing your grass regularly.
- Removing excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Clearing of leaves, twigs, bark and other debris from the roof and gutters.
- Purchasing and testing the effectiveness of gutter plugs.
- Trimming low-lying branches 2 metres from the ground surrounding your home.
- Enclosing open areas under your decks and floors.
- Installing fine steel wire mesh screens on all windows, doors, vents and weep holes.
- Pointing LPG cylinder relief valves away from the house.
- Conducting maintenance checks on pumps, generators and water systems.
- Checking that you have sufficient personal protective clothing and equipment.
- Relocating flammable items away from your home including woodpiles, paper, boxes, crates, hanging baskets and garden furniture.
- Sealing all gaps in external roof and wall cladding.
- Checking that the first aid kit is fully stocked.

# Bushfire Alerts

If you receive an emergency warning about a bushfire or other emergency, take notice as it could save your life.

There are three types of alert messages to help you make the right safety choices:

**Bushfire Advice Message** – a fire has started – general information to keep you up to date.

**Bushfire Watch and Act Message** – represents a heightened level of threat. Conditions are changing, a fire is approaching; lives may come under threat. Take appropriate action.

**Bushfire Emergency Warning** – is the highest level message advising of impending danger. It may be preceded with the Standard Emergency Warning Signal (SEWS).

An Emergency Warning means there is a threat to lives and protective action is required immediately.

# When a bushfire strikes

You have made your decision to **PREPARE.ACT.SURVIVE.** You have prepared your property before the fire season. You have made your Bushfire Survival Plan. You have practised your Bushfire Survival Plan.

A bushfire is threatening? What do you do?

- Know the FDR for any given day.
- Regularly check the FDR on the Rural Fire Services website at www.ruralfire.qld.gov.au.
- Monitor your media outlets for warnings on bushfire activity.
- Seek out information if you have to, and do not assume that you will receive a warning.
- Leave early or stay according to your Bushfire Survival Plan.
- Act decisively in accordance with your Bushfire Survival Plan.
- Do not adopt the ‘wait and see’ option.

# Travelling in your vehicle near a bushfire

Sheltering inside a vehicle is a high-risk strategy that can result in death. Whilst sheltering inside a vehicle offers you a slightly higher chance of survival than being caught in the open, having a leave early or stay strategy is a much safer option.

You should never take a journey into areas where the fire danger is catastrophic or extreme. You should consider postponing or finding alternative routes if necessary. If you can smell or see smoke in the distance it is best to u-turn and drive away from the danger.

If you are caught in smoke or flames while on the road:

- Turn on the vehicle's headlights and hazard warning lights.
- If you need to shelter in your vehicle drive your car into a bare, clear area well away from surrounding trees, leaving lights on. Position vehicle to prevent side impact from advancing fire front.
- Close all windows and vents.
- Leave the engine running and turn off the air conditioning system.
- Cover your entire body with woollen or cotton blankets to protect from radiant heat.
- Take shelter below the window level.
- Drink water frequently and stay in the vehicle until the fire front has passed.
- Once the fire front has passed exit the vehicle to inspect the damage and ensure other passengers are safe.

# Neighbourhood Safer Places

A Neighbourhood Safer Place (NSP) is a place of last resort for people during a bushfire. An NSP may form part of a back-up plan when:

- Your Bushfire Survival Plan has failed.
- Your plan was to stay but the extent of the fire means that your home cannot withstand the impact of the fire and therefore your home is not a safe place to shelter.
- The fire has escalated to an extreme or catastrophic level and relocation is the safest option.

An NSP is an identified building or open space within the community that can provide a level of protection from the immediate life-threatening effects of a bushfire. NSPs still entail some risk, both in moving to them and while sheltering in them and cannot be considered completely safe.

They are a place of *last resort* in bushfire emergencies only. The following limitations of NSPs need to be considered within your Bushfire Survival Plan:

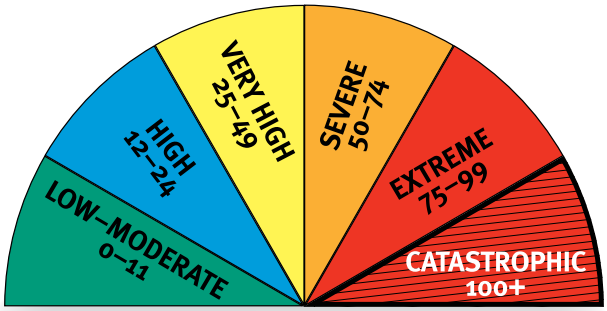
- NSPs do not cater for pets.
- Firefighters may not be present as they will be fighting the main fire front elsewhere.
- NSPs do not provide meals or amenities.
- They may not provide shelter from the elements, particularly flying embers.

If you are a person with special needs you should give consideration to what assistance you may require at an NSP.

Although QFRS cannot guarantee an immediate presence during a bushfire, every effort will be made to provide support as soon as resources are available.

If an NSP is part of your contingency plan it should not require extended travel through fire-affected areas to get there.

# FIRE DANGER RATING




The Fire Danger Rating (FDR) is an early indicator of potential danger and should act as your first trigger for action. The higher the rating the greater the need for you to act.

The FDR is an assessment of the potential fire behaviour, the difficulty of suppressing a fire, and the potential impact on the community should a bushfire occur on a given day.

A Fire Danger Index (FDI) of 'low–moderate' means that fire will burn slowly and that it will be easily controlled, whereas a FDI in excess of 'catastrophic 100+' means that fire will burn so fast and so hot that it will be uncontrollable.

## CATASTROPHIC 100+

A fire with a rating of **'catastrophic'** may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. Many people will be injured and many homes and businesses will be destroyed.

During a **'catastrophic'** fire, well-prepared and constructed homes will not be safe. Leaving is the only option for your survival.

## EXTREME 75–99

A fire with an **'extreme'** rating may be uncontrollable, unpredictable and fast moving. The flames will be higher than roof tops. During an **'extreme'** fire, people will be injured and homes and businesses will be destroyed.

During an **'extreme'** fire, well-prepared and well-constructed homes may not be safe. Leaving is the only option for your survival.

## SEVERE 50–74

A fire with a **'severe'** rating may be uncontrollable and move quickly, with flames that may be higher than roof tops. A **'severe'** fire may cause injuries and some homes or businesses will be destroyed.

During a fire with a **'severe'** rating, leaving is the safest option for your survival. Use your home as a place of safety only if it is well-prepared and well-constructed.

## VERY HIGH 25–49

A fire with a **'very high'** danger rating is a fire that can be difficult to control with flames that may burn into the tree tops. During a fire of this type some homes and businesses may be damaged or destroyed.

During a fire with a **'very high'** danger rating, you should use your home as a place of safety only if it is well prepared and well-constructed.

## HIGH 12–24

A fire with a **'high'** danger rating is a fire that can be controlled where loss of life is unlikely and damage to property will be limited.

During a fire with a **'high'** danger rating, you should know where to get more information and monitor the situation for any changes.

## LOW–MODERATE 0–11

A fire with a **'low to moderate'** rating can be easily controlled and pose little/or no risk to life or property.

During a fire with a **'low to moderate'** rating, you should know where to get more information and monitor the situation for any changes.

# BUSHFIRE SURVIVAL PLAN

Complete your personalised Bushfire Survival Plan lift-out.

## Personal details:

Important phone numbers: **000** (Fire, Police and Ambulance)

Family: Family: Family:

Work: Friends: Friends:

School:

## Important contact details – name and phone number:

Insurer: Policy Number: Phone:

Electricity: Phone:

Water: Phone:

Gas: Phone:

Phone Company: Phone:

Council: Phone:

## Leave early:

List all names and contact phone numbers of household members who have decided to leave early then complete Section 1.

Names:

Phone:

## Stay:

List all names and contact phone numbers of household members who have decided to stay, then complete Section 2.

Names:

Phone:

# Leave early – Section 1

Pull this Bushfire Survival Plan lift-out from this document and keep in a safe place.

Leaving early will always be the safest option for you and your family. It is extremely important for you to prepare a detailed leave early plan to ensure everyone understands what to do and when. Use the boxes below to list tasks to do.

**When to go** – Think of different triggers that will cause you and your family to leave early. Think about what you will do if you have sent the children to school that day. Think about whether or not you will have to travel from work into the fire zone.

**Where to go** – Identify one or more safer locations. Consider putting on personal protective clothing before you leave home.

**How to get there** – What roads will you take to your destination? Have an alternative route if your first choice is impassable.

**What to take** – Make a list of your most valuable items (e.g. insurance papers, electronic records, photo albums, passports, birth certificates and other important documents).

# Stay – Section 2

Anyone who is not going to leave early must be involved in completing this stay and defend plan to ensure they know what to do. Every stay plan will be different depending on your circumstances. Use the boxes below to list tasks to do.

**Before the fire approaches** – Start getting yourself and your property ready for a bushfire.

**As the fire approaches** – Prepare for ember attack on or near your home.
Remember to put on personal protective clothing.

**As the fire front arrives** – Stay safe by monitoring the fire from inside your home.

**After the fire has passed** – Patrol your property and extinguish any spot fires or burning embers.
You may need to keep this up for several hours.

# Everyone must have a contingency plan

**Have a contingency plan** – what will you do if you can't activate your Bushfire Survival Plan? Remember that leaving late can lead to loss of lives.

**Know where your nearest NSP is and how to get there.**

# ACTIVATING YOUR BUSHFIRE SURVIVAL PLAN

Once you have prepared your Bushfire Survival Plan and completed your preparations, it is absolutely essential that you regularly practise and review your plan. This will make sure you and your family are well organised in the event of a bushfire. If a bushfire threatens the health and safety of you, your family, home or property, you should follow these steps:

**Step 1 – Activate your Bushfire Survival Plan**

Someone must take charge and lead other family members through this emotional experience by carefully communicating the various tasks set out in the plan. Know who is going to leave early and who is going to stay.

**Step 2 – Put on your personal protective clothing**

Every member of the family must change into their personal protective clothing, including long pants, long-sleeve-shirt and closed-in shoes.

**Step 3A – Pack your vehicle and leave early**

If your plan is to leave early, pack all valuables in your vehicle (see Relocation Kit) and relocate to your designated safer location. Give yourself enough time to get you and your family to safety. Don't return home until it is safe to do so.

**OR**

**Step3B – Implement your strategy to stay and defend**

If your plan is to stay ensure you have all the items in the Bushfire Survival Kit ready to go. This can be a dangerous option and you should be physically and mentally prepared.

**Step 4 – Keep informed of bushfire activity**

Listen to the radio, television, internet, firefighters and/or police for information on the fire in your local area. Bushfire is dynamic and unpredictable so you need to be prepared for the unexpected. Warnings are not guaranteed so do whatever is necessary to ensure you remain safe.

# BUSHFIRE SURVIVAL KIT

You need to have a Bushfire Survival Kit stored in an area of the house that is safe and easy to access. It should contain:

- protective clothing
- mop
- gloves
- torch
- hoses
- shovel
- towels
- buckets
- safety goggles
- ladder
- medications
- bottled drinking water
- fire extinguishers
- battery operated radio
- spare batteries
- smoke mask
- woollen blankets
- first aid kit
- knapsack sprayer
- protective clothing for the whole family.



















# RELOCATION KIT

Write a list of all items your family will need before, during and after your relocation.
The list below shows items that you might like to put in your relocation kit.

- protective clothing for the whole family
- battery operated radio and spare batteries
- safety goggles
- mobile phone and battery charger
- medications
- wallet or purse and money
- clothing (two sets of clothes for each family member)
- identity information (passports, birth certificates)
- bottled water (enough for each relocated family member)
- family and friends' phone numbers
- items of high importance (e.g. family photos, valuables, important documents)
- blankets (natural fibres)
- children's toys

# BUSHFIRE RISK SELF-ASSESSMENT CHECKLIST

This basic self-assessment checklist is designed to give you a greater understanding of the bushfire risk level relevant to your property. Information provided in this assessment will assist you when completing your Bushfire Survival Plan.

Address:

Postcode:

Property Owner/Property Name:

| **ACCESS/EGRESS** Road/Street/Driveway | PLEASE √ APPROPRIATE BOX | |
|---|---|---|
| Clear of overhanging vegetation | Yes ☐ | No ☐ |
| Unrestricted gate access | Yes ☐ | No ☐ |
| Clear of overhead power lines | Yes ☐ | No ☐ |
| Able to reverse in | Yes ☐ | No ☐ |
| Turning/passing areas | Yes ☐ | No ☐ |
| Heavy vehicle access on cattle grid/bridge | Yes ☐ | No ☐ |
| Alternative way out | Yes ☐ | No ☐ |
| Two wheel drive access | Yes ☐ | No ☐ |
| **STRUCTURE/S** | | |
| Exterior walls – non-combustible | Yes ☐ | No ☐ |
| Roof ridge capping sealed | Yes ☐ | No ☐ |
| Eaves enclosed | Yes ☐ | No ☐ |
| Roofing gutters and valleys clear of leaf litter and fine fuels | Yes ☐ | No ☐ |
| Underfloor enclosed | Yes ☐ | No ☐ |
| Vents screened | Yes ☐ | No ☐ |
| Windows – non-combustible finishing | Yes ☐ | No ☐ |
| Deck/veranda non-combustible | Yes ☐ | No ☐ |
| **WATER SUPPLY** | | |
| Reticulated water supply | Yes ☐ | No ☐ |
| Tank supply with QFRS access – 50mm male camlock fitting so fire figthers can use water if needed | Yes ☐ | No ☐ |
| QFRS accessible external open water supply (dam/pool) | Yes ☐ | No ☐ |
| Firefighting pump and hose connected to water supply | Yes ☐ | No ☐ |

# Other considerations

There are a range of other things to be considered regardless of your decision to leave early or stay:

- Firefighting equipment such as pumps, hoses and sprinkler systems should be tested regularly and maintained in maximum operational working condition.
- Firefighters may need access to your property during a bushfire so it is in your best interests to allow enough space for fire trucks (4 metres wide by 4 metres high).
- Your pets, livestock and other animals require proper care and attention during fires. Consider food, medication, transportation and sleeping arrangements for your animals.

# Myths versus Reality

| Myths | Reality |
|---|---|
| There will always be a fire truck available to fight a bushfire threatening my home. | Firefighters may be required to fight many fronts of a large fire. Fire trucks and firefighters are finite resources so it is important they are deployed in an appropriate manner to best manage the fire. |
| I know the back streets in town like the back of my hand so it is OK for me to leave at the last minute. | If your decision in your Bushfire Survival Plan is to leave early, then you should leave well before the fire front reaches your property. Irrespective of your local area knowledge you must stick to your plan and leave early. Leaving late can be fatal. |
| Someone from an emergency service will knock on my door when it is time to leave. | Emergency services personnel may not be available to alert the community by door-knocking and encouraging you to leave. You need to monitor the bushfire alerts by listening to the radio, watching TV or checking the rural fire website. You need to be ready to leave early if your life or the people in your care are at risk. |
| My house will not burn down because there is more than 50 metres between my home and nearby bushland. | Most houses which burn down during bushfires have been attacked by flying embers. Under certain conditions embers can cause ignitions up to 20kms in front of the main fire. A combination of your level of preparation and your home's construction will determine the survivability of your home. |
| I only have to clean my gutters and mow my lawns to prepare my property for bushfire. | Fire requires fuel, heat and oxygen to occur. This means that flames or embers do not necessarily rely solely on your gutters and lawns for fuel. They might utilise overhanging trees, woodpiles, old building materials under the deck or chemicals in the garden shed to sustain them. Take the time to properly prepare your whole property, which includes yourself, your house and your land. |

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