Brisbane City Plan 2014

Amendment S - Planning scheme policy amendment

1 Guide to this document

(a) In this document, proposed amendments to Brisbane City Plan 2014 are detailed as follows:
- (i) in the Schedule of text amendments:
  - (A) text identified in strikethrough and red highlight (e.g. ~~example~~) represents text to be omitted
  - (B) text identified in underlining and green highlight (e.g. example) represents text to be inserted
- (ii) in the Schedule of Brisbane Standard Drawings and Reference Specifications, revisions, insertion or omissions are as detailed in the tables.

(b) Text that is preceded by the heading 'Reason for change' does not form part of the proposed amendment and is included as explanatory information about the reason for the proposed amendment only.

Schedule 6 Planning scheme policies \ SC6.4 Bushfire planning scheme policy

Contents

Reason for change: Delete the existing content of the Bushfire planning scheme policy and replace with updated content to support and provide further information and guidance on the Bushfire overlay code. To integrate best practice approaches and methodology for undertaking bushfire hazard assessments and risk mitigation.

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1 ~~Introduction~~

1.1 ~~Relationship to planning scheme~~

1. This planning scheme policy provides:
   a. ~~information the Council may request for a development application;~~
   b. ~~guidance or advice about satisfying an assessment benchmark which identifies this planning scheme policy as providing that guidance or advice;~~
   c. ~~a standard for the assessment benchmark identified in the following table.~~

~~Column 1 – Section or table in the code~~	~~Column 2 – Assessment benchmark reference~~	~~Column 3 – Standard in the planning scheme policy~~
~~Bushfire overlay code~~		
~~Table 8.2.5.3.A~~	~~PO1 note~~	~~Section 6~~
~~Table 8.2.5.3.A~~	~~AO1~~	~~Section 3~~
~~Table 8.2.5.3.A~~	~~PO2 note~~	~~Section 4, Section 5 and Section 8~~
~~Table 8.2.5.3.A~~	~~PO4 note~~	~~Section 4, Section 5, Section 9 and Section 11~~

~~Table 8.2.5.3.A~~	~~PO8 note~~	~~Section 4, Section 5, Section 8, Section 9, Section 10 and Section 11~~
~~Table 8.2.5.3.A~~	~~PO9 note~~	~~Section 4, Section 5, Section 9 and Section 11~~
~~Table 8.2.5.3.A~~	~~AO10~~	~~Section 4, Section 5, Section 9 and Section 11~~
~~Table 8.2.5.3.A~~	~~AO10 note~~	~~Section 3, Section 4 and Section 5~~
~~Table 8.2.5.3.A~~	~~AO11~~	~~Section 4, Section 5 and Section 7~~
~~Table 8.2.5.3.A~~	~~AO12~~	~~Section 4, Section 5 and Section 7~~
~~Table 8.2.5.3.A~~	~~PO14 note~~	~~Section 6~~
~~Table 8.2.5.3.A~~	~~AO14~~	~~Section 4 and Section 5~~
~~Table 8.2.5.3.A~~	~~PO15~~	~~Section 6~~
~~Table 8.2.5.3.A~~	~~AO16~~	~~Section 4, Section 5, Section 8, Section 9, Section 10 and Section 11~~
~~Table 8.2.5.3.A~~	~~PO17 note~~	~~Section 4, Section 5, Section 9 and Section 11~~
~~Table 8.2.5.3.A~~	~~PO18 note~~	~~Section 4, Section 5, Section 9 and Section 11~~
~~Table 8.2.5.3.A~~	~~PO21 and AO21 note~~	~~Section 6~~

1.2

~~Purpose~~

~~This planning scheme policy provides information required for a development application and guidance and advice for satisfying an assessment benchmark for the preparation of a site-specific or precinct-wide bushfire hazard assessment and bushfire management plans.~~

~~A bushfire hazard assessment is to be undertaken using the methodology provided in this planning scheme policy. Alternatively, a hazard assessment prepared in accordance with current State Planning Policy is acceptable where it is undertaken by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation, including protection of biodiversity values.~~

~~Note—The Bushfire overlay area consists of the mapped high and medium bushfire hazard areas, the buffers to the high and medium bushfire hazard areas and the potential impact area and the very high, high and medium potential bushfire intensity areas and potential impact buffer area. This~~

area is a 'natural hazard area' for the purpose of the State Planning Policy and is a designated bushfire prone area for the purpose of section 32(a) of the Building Act 1975.

1.3 Terminology

In this planning scheme policy unless the context or subject matter otherwise indicates or requires, a term has the following meaning:

Hazardous vegetation: vegetation identified as a potential source of bushfire hazard due to vegetation classification and corresponding potential fuel load or as a result of a bushfire hazard assessment prepared in accordance with this planning scheme policy or the State Planning Policy, but excluding:

a. vegetation of any type that is more than 100m from the site;
b. single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation potentially classified as hazardous;
c. multiple areas of vegetation less that 0.25ha in area and not within 20m of the site, each other or other areas of vegetation potentially classified as hazardous;
d. strips of vegetation less than 20m in width and not within 20m of the site, each other or other areas of vegetation potentially classified as hazardous;
e. non-vegetated areas where revegetation, rehabilitation or regrowth vegetation is not anticipated (e.g. roads, footpaths and buildings);
f. low threat vegetation where minimal fuel conditions exist and low fuel loads are maintained through a reliable and consistent maintenance regime anticipated to continue in perpetuity (e.g. maintained lawns and cultivated gardens, golf courses, public parkland, commercial nurseries, orchards and vineyards).

Note—Minimal fuel conditions mean that there is insufficient fuel available to significantly increase the severity of the bushfire attack, such as short-cropped grass maintained at a nominal height of 100mm.

2 Bushfire hazard mapping

The Bushfire overlay map identifies the High bushfire hazard area sub-category, Medium bushfire hazard area sub-category, High bushfire hazard area buffer sub-category, Medium bushfire hazard area buffer sub-category, Potential impact sub-category, Very high potential bushfire intensity sub-category, High potential bushfire intensity sub-category, Medium potential bushfire intensity sub-category and Potential impact buffer sub-category.

Land located within 100m of the Very high potential bushfire, High potential bushfire or Medium potential bushfire intensity sub-categories has not been included in the mapping but is a designated bushfire prone area and assessed against the Bushfire overlay code.

Note—For contemporary guidance on undertaking a bushfire hazard assessment refer to Bushfire Resilient Communities and AS 3959 Construction of buildings in bushfire-prone areas.

3 Undertaking a bushfire hazard assessment

Step 1: Assessment of vegetation communities

The type of vegetation community can determine the rate at which dry fuel accumulates and its susceptibility to bushfire. Some vegetation communities protect fuel from drying out in all but extreme bushfire seasons and can then be susceptible to very destructive bushfires. Alternatively, vegetation communities may expose fuels to drying and therefore be frequently available for burning. Frequent bushfires can result in the development of bushfire-tolerant grassy woodlands or grasslands and less destructive bushfire behaviour.

Table 1 lists hazard scores for a range of vegetation community types for the purpose of assessing bushfire hazard.

Table 1—Hazard scores and associated fire behaviours for vegetation communities

Veg code	**Description**	**Botanical descriptions**	**Hazard score**
G22	Flooded gum/tallowwood/brush box tall open forest	*Eucalyptus grandis,* frequently with *E. microcorys, Lophostemon confertus*	10
H12	Blackbutt/brown bloodwood/tallowwood open forest on the Helidon Hills	*E. pilularis,* with *Corymbia trachyphloia, E. microcorys*	10
C2	Paperbark swamp, usually in pure stands	*Melaleuca quinquenervia*	8
C3	Paperbark swamp, with swamp mahogany	*Melaleuca quinquenervia* and *E. robusta*	8
C4	Paperbark swamp, with blue gum and swamp box	*Melaleuca quinquenervia, E. tereticornis* and *Lophostemon suaveolens*	8
C6a	Swamp banksia/pricklyleaf paperbark heathlands, sometimes with patches of sedgeland	a. *Banksia robur*	8
C6b	Swamp banksia/pricklyleaf paperbark heathlands, sometimes with patches of sedgeland	b. *Melaleuca nodosa*	8
D2	White mahogany/pink bloodwood open forest on coastal lowlands	*E. acmenoides* and *Corymbia intermedia*	8
D8	Scribbly gum/pink bloodwood/smooth-barked apple woodland on coastal lowlands	*E. racemosa, C. intermedia, Angophora leiocarpa*	8
D8a	Scribbly gum/pink bloodwood/smooth-barked apple woodland on coastal lowlands	a. *E. racemosa, C. intermedia, Angophora leiocarpa* with grassy ground layer	8

D8b	Scribbly gum/pink bloodwood/smooth-barked apple woodland on coastal lowlands	*b. E. racemosa, C. intermedia, Angophora leiocarpa with* heathy ground layer	8
D9	Broad-leaved white mahogany/bloodwood/smooth-barked apple woodland on coastal lowlands	*E. umbra, C. trachyphloia* and/or *C. intermedia, Angophora leiocarpa*	8
H14	Queensland white stringybark/pink bloodwood/grey ironbark open forest	*E. tindaliae, C. intermedia, E. siderophloia*	8
H20	Spotted gum/white mahogany/brown bloodwood woodland on the Helidon Hills	*C. citriodora, E. acmenoides, C. trachyphloia*	8
H21	Grey gum/broad-leaved white mahogany/grey ironbark woodland	*E. major, E. carnea, E. siderophloia*	8
H24	White mahogany/brown bloodwood/smooth-barked apple woodland on coastal foothills	*E. acmenoides* and *C. trachyphloia, with Angophora leiocarpa*	8
H25	White mahogany/brown bloodwood/smudgee woodland on the Helidon Hills	*E. acmenoides, C. trachyphloia* with *Angophora woodsiana*	8
H34	Scribbly gum/pink bloodwood woodland on sandstone hillslopes	*E. racemosa* and *C. intermedia*	8
H39a	Nerang—Beenleigh alliance	a. *E. carnea, E. tindaliae*	8
H39b	Nerang—Beenleigh alliance	b. *E. acmenoides*	8
H39c	Nerang—Beenleigh alliance	c. *E. microcorys, E. propinqua, Lophostemon confertus*	8
H39e	Nerang—Beenleigh alliance	e. *C. citriodora, E. carnea, E. tindaliae, E. propinqua, C. henryi, E. crebra*	8
H39h	Nerang—Beenleigh alliance	h. *E. planchoniana, often* with *E. baileyana*	8

H39j	Nerang—Beenleigh alliance	j. *E. seeana, sometimes* with *E. racemosa*	8
I10	White mahogany/brown bloodwood/narrow-leaved ironbark woodland at Bania State Forest	*E. acmenoides, C. trachyphloia* with *E. crebra*	8
J6	Scribbly gum/red bloodwood/Queensland white stringybark woodland on rhyolite ranges	*E. racemosa, C. gummifera* and *E. tindaliae*	8
J12	White mahogany/brown bloodwood/smooth-barked apple woodland at moderate altitude away from the coast	*E. acmenoides, C. trachyphloia* with *Angophora leiocarpa*	8
J13	White mahogany/spotted gum/brown bloodwood woodland on granite ranges	*E. acmenoides, C. citriodora, C. trachyphloia*	8
J22	Broad-leaved white mahogany/brush box low open woodland	*E. carnea* and *Lophostemon confertus*	8
G26	Blue gum/yellow box/grey gum open forest	*E. tereticornis* and *E. melliodora* with *E. biturbinata* or *E. longirostrata*	6
G32	Narrow-leaved ironbark/silver-leaved ironbark/yellow box woodland, without white box	*E. crebra, E. melanophloia* with *E. melliodora*	6
G39	Blue gum/pink bloodwood woodland on red kraznozem soil	*E. tereticornis, C. intermedia*	6
H16	Smooth-barked apple/spotted gum woodland	*Angophora leiocarpa* with *C. citriodora*	6
H19	Spotted gum/narrow-leaved ironbark woodland	*C. citriodora* and *E. crebra*	6
H22	Pink bloodwood/swamp box woodland	*C. intermedia* often with *Lophostemon suaveolens*	6
H27	Narrow-leaved ironbark/smooth-barked apple woodland on sandy hills	*E. crebra* and *Angophora leiocarpa*	6

H29	Broad-leaved ironbark woodland	*E. fibrosa subsp. fibrosa*	6
H36	Narrow-leaved red gum/pink bloodwood woodland	*E. seeana* and *C. intermedia*	6
H39d	Nerang - Beenleigh alliance	d. *C. gummifera*	6
H39i	Nerang - Beenleigh alliance	i. *E. moluccana*, sometimes with *C. citriodora, E. crebra, E. tereticornis, C. intermedia, C. tessellaris*	6
H39k	Nerang - Beenleigh alliance	k. *E. fibrosa, C. citriodora, C. henryi* with *Angophora leiocarpa*	6
I13	Narrow-leaved ironbark/silver-leaved ironbark woodland	*E. crebra* with *E. melanophloia*	6
I12	Small-fruited grey gum/grey ironbark open forest	*E. propinqua* and *E. siderophloia*	6
I13	Narrow-leaved ironbark/blue gum woodland on lower hillslopes	*E. crebra* and *E. tereticornis*	6
G22/17	G22 (see G22) / Notophyll vine forest or notophyll feather palm vine forest ('gully rainforest') of mango bark, yellow carabeen, soft corkwood, rose marara, crabapple, booyong, domatia tree, with emergents of figs, brush box, eucalypts, hoop and bunya pine, often with an understorey of piccabeen palms	G22 (see G22) / NVF or NFPVF of *Canarium australasicum, Sloanea woollsii, Caldcluvia paniculosa, Pseudoweinmannia lachnocarpa, Schizomeria ovata, Argyrodendron spp., Endiandra discolor* with *Ficus spp., Lophostemon confertus, Eucalyptus spp., Araucaria cunninghamii* and *A. bidwillii,* and *Archontophoenix cunninghamiana*	4
E1/E11	E1 (see E1) / E11 (see E11)	E1 (see E1) / E11 (see E11)	4
E7	Gum-topped box communities	*E. moluccana*	4
E7a	Gum-topped box communities		4

~~E9~~	~~Blue gum flats, often with grey ironbark, in near-coastal areas~~	~~*E. tereticornis* and *E. siderophloia*~~	~~4~~
~~E10~~	~~Blue gum flats, without grey ironbark, away from the coast~~	~~*E. tereticornis*~~	~~4~~
~~E10c~~	~~Blue gum flats, without grey ironbark, away from the coast~~		~~4~~
~~E11~~	~~River oak/blue gum on creeks and rivers~~	~~*Casuarina cunninghamiana* and/or *E. tereticornis*~~	~~4~~
~~C8~~	~~Twigrush/spikerush sedgelands~~		~~2~~
~~C8d~~	~~Twigrush/spikerush sedgelands~~		~~2~~
~~C10~~	~~Natural freshwater bodies~~		~~2~~
~~A2~~	~~Swamp she-oak woodland adjoining mangroves/saltmarshes~~	~~*Casuarina glauca*~~	~~1~~
~~C10~~	~~Swamp she-oak open-forest in swamps~~	~~*Casuarina glauca*, often with *Melaleuca quinquenervia, E. tereticornis*~~	~~1~~
~~E1~~	~~Complex notophyll and araucarian notophyll vine forests of white booyong, giant water gum, silky oak, with black bean/weeping lilly pilly locally dominant. Emergent figs and hoop pine.~~	~~A/CNVF of *Argyrodendron trifoliolatum, Syzygium francisii, Grevillea robusta with Castanospermum australe, Waterhousea floribunda ± Ficus spp., Araucaria cunninghamii*~~	~~1~~
~~G1/G10~~	~~Complex notophyll vine forest ('warm subtropical rainforest') of booyong, rose marara / G10 (see G10)~~	~~*CNVF of Argyrodendron trifoliolatum, Pseudoweinmannia lachnocarpa* / G10 (see G10)~~	~~1~~
~~G10~~	~~Araucarian notophyll and notophyll/microphyll vine forests of booyong, rose marara and/or giant ironwood and/or hauer. Emergents of hoop and bunya pine~~	~~ANVF and AN/MVF of *Argyrodendron trifoliolatum, Pseudoweinmannia lachnocarpa* and/or *Choricarpia subargentea* and/or *Dissiliaria baloghioides* with *Araucaria cunninghamii* and *A. bidwillii*~~	~~1~~

A1	Mangrove communities	*Avicennia marina, Aegiceras corniculatum, Bruguiera gymnorhiza, Rhizophora stylosa, Excoecaria agallocha* or *Ceriops tagal*	0
A3	Saltmarsh and fringing communities		0

Step 2: Assessment of slope

Studies have shown that fires burn more quickly and with greater intensity up slopes, generally doubling every 10 degrees of slope. Also, the steeper the slope, the more difficult it is to construct ring roads, firebreaks and provide access for emergency crews. Trees situated downhill from structures will have their crowns close to the structures. This presents bushfire hazards particularly for exposed structures such as timber decks. Table 2 presents the hazard scores for different categories of slope.

Table 2—Hazard scores for slope

Slope	**Hazard score**
Gorges and mountains (>30%)	5
Steep hills (>20% to 30%)	4
Rolling hills (>10% to 20%)	3
Undulating (>5% to 10%)	2
Plain (0% to 5%)	1

Note—For site-specific assessment of bushfire hazard, if the site is downhill from the hazard, the slope effect may be taken as zero as the fire intensity will be less. However, burning heavy fuels may roll downhill and trees may fall down, so recommended setbacks from the hazard still need to be observed.

Step 3: **Assessment** of aspect

Aspect affects bushfire hazard due to the effects that exposure to direct sunlight has on different vegetation communities, including the drying rates of fuels. Aspect also correlates closely with exposure to low humidity winds that increase bushfire intensity. In extremely broken country where there is a range of aspects, the predominant aspect should be used.
As aspect has only a minor influence on flatter land, aspect is not considered to be significant on land with a slope less than 5%. Table 3 lists the hazard score for different aspects and Figure a illustrates the compass degree ranges for each aspect category.

Table 3—Hazard score for aspect

Aspect	**Hazard score**
North to north-west	3.5

North-west to west	3
West to south	2
North to east	1
East to south and all land under 5% slope	0

Step 4: Combining scores to identify the severity of bushfire hazard

The scores for the individual factors determined for vegetation communities, slope and aspect are added to give a total for each sub-unit as follows:
Total hazard score = vegetation community hazard score + slope hazard score + aspect hazard score.
The total hazard score determines the severity of bushfire hazard for each sub-unit as set out in Table 4.

Table 4—Hazard score ranges to identify the severity of bushfire hazard

Total hazard score	**Severity of bushfire hazard**
13 or greater	High
6 to 12.5	Medium
1 to 5.5	Low

Note—Buildings in high severity bushfire hazard areas should be constructed in accordance with the Level 1 requirements of AS 3959—1999 Construction of buildings in bushfire-prone areas.

Step 5: Field verification

Preliminary bushfire hazard maps should be prepared based on the results of Step 4 above by aggregating all sub-units with similar levels of bushfire hazard severity into 'high' and 'medium' severity classifications. Field verification or 'ground truthing' of these preliminary results should then be undertaken. A number of sample areas should be evaluated to test the accuracy of the preliminary bushfire hazard findings.

Step 6: Safety buffers

The final step in identifying bushfire hazard areas is to add a safety buffer, as land adjacent to a bushfire hazard area is vulnerable to bushfire attack from these areas.
Any land within 100m of an area identified as having a high bushfire severity classification should be included in the High bushfire hazard area and any land within 50m of an area identified as having a medium bushfire severity classification should be included in the Medium bushfire hazard area. The safety buffers should be integrated into the preparation of maps that identify bushfire hazard areas. Table 5 shows the width of the safety buffers that apply to the various bushfire hazard severity classifications.

Table 5—Total hazard score and severity of bushfire hazard with safety buffers

Total hazard score	**Severity of bushfire hazard**	**Extent of safety buffer**
13 or greater	High	100m

6 to 12.5	Medium	50m
1 to 5.5	Low	Not applicable

4 Preparation of a bushfire management plan

A bushfire management plan is to be prepared by a professional who is a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation, including protection of biodiversity values, and is to:

a. have knowledge and experience in applying relevant legislation, plans, policies, standards and guidelines relating to bushfire hazard and fire ecology relating to Queensland requirements and South East Queensland conditions; or
b. have knowledge and experience in developing bushfire management plans in accordance with the methodology set out in section 5 of this planning scheme policy; or
c. be accredited practitioner (BPAD Level 2/3) under the Bushfire Planning and Design Accreditation Scheme from the Fire Protection Association of Australia; or
d. have qualifications and experience in the field of ecology, environmental management or similar to assess and protect site-based and strategic biodiversity values, preferably relating to South East Queensland.

4.1 Who should be consulted?

At a minimum the local government, responsible rural and/or urban fire brigade, and managers of adjacent parks or reserves should be consulted. It is also desirable to consult other agencies or individuals, such as previous owners of the site or neighbours, who may have local knowledge of the severity and nature of the bushfire hazard.

5 Requirements for a bushfire management plan

1. A bushfire management plan identifies the strategies a development is to implement for mitigating the impacts of bushfire on life, property and the environment. This includes identifying specific risk factors associated with the development, planning for the separation of at-risk elements and potential hazards, and providing access and treatments to facilitate an effective response to bushfire.
2. A bushfire management plan is to include the following information:
    a. A site specific bushfire hazard assessment using the methodology set out in section 3 of this planning scheme policy.
    b. An assessment of other site-specific factors that are important in devising suitable bushfire mitigation strategies, such as likely direction of bushfire attack, environmental values that may limit mitigation options, location of evacuation routes and safety zones and identification of the risks on site and from nearby sites.
    c. An assessment of the specific risk factors associated with the development including:
        i. the intended future population size and characteristics;
        ii. the likely usage patterns on the site;
        iii. the estimated traffic generation;
        iv. the nature of activities to be conducted on the site;
        v. the storage or handling of hazardous chemicals in quantities that would be equivalent to or exceed the threshold quantities set out in Table 8.2.5.3.D in the Bushfire overlay code;
        vi. the use of the site for emergency services or disaster response purposes;
        vii. particular warning or evacuation requirements;

viii. the total extent of clearing, revegetation and landscaping proposed for the site which is to be indicated on a site plan.

d. Mitigation measures identified for the development that address major factors in bushfire attack, including embers and burning debris, radiant heat, direct flame contact and wind. Smoke should also be addressed where it is relevant to mitigation measures for vulnerable uses, such as hospitals, aged-care facilities and facilities in which aged or disabled persons reside, or where resident populations are susceptible to respiratory disorders.

e. A plan for mitigating the bushfire risk identified in the bushfire hazard assessment. The plan is to recommend specific mitigation actions for the development including:

i. appropriate land uses;
ii. access, including road layout, accessways, driveways, evacuation routes, including an easement on site and on adjoining lands, access routes for two-wheel drive vehicles and fire-fighting appliances; and evacuation requirements;
iii. lot layout and orientation;
iv. site layout including identification of proposed locations of buildings or building protection zones;
v. the need and construction standards for fire maintenance trails;
vi. access requirements and access routes for two-wheel drive vehicles and fire-fighting appliances;
vii. warning and evacuation procedures, plans and routes including capacity of public roads especially perimeter roads and traffic management treatments, and responsibility for their maintenance;
viii. fire-fighting requirements including infrastructure and water supply;
ix. landscaping, including details of new vegetation or landscape treatments to be used on site, particularly in the building protection zone;
x. operational, design, construction or management measures for responding to particular requirements of some land uses, such as air quality management and design standards of tanks and fittings;
xi. any other specific measures such as external sprinkler systems which are only as an adjunct to other passive controls, and alarms;
xii. ongoing purchaser or resident education and awareness programs;
xiii. ongoing maintenance, management and response awareness programs, including tenure and community title arrangements. This should also include identification of specific responsibilities for actions required in the bushfire management plan for owners or occupiers of the development, the developer and Council.

6 Assumptions for assessing bushfire risk

For most types of development, bushfire risk is generally assessed based on the vegetation existing on and in proximity to the site. However, the potential impacts of future bushfire hazard must be assessed for any areas Council assumes are subject to revegetation or regrowth vegetation. The level of bushfire hazard should be assessed as if the vegetation in that area, including any areas designated for revegetation or regrowth vegetation, has reached its mature state. Potential impacts are identified through consideration of the following:

1. a development approval on the subject site;
2. either a development approval or a development application in the decision-making stage, on an adjoining site;

3. an overlay such as the Biodiversity areas and Waterway corridors overlays;
4. a neighbourhood plan;
5. an Infrastructure Agreement;
6. natural area parks and corridor link parks along vegetated waterways;
7. habitat Brisbane, revegetation and offset planting sites;
8. any other public lands that are not intended to be managed in a low threat state.

Where insufficient detail is available to determine fuel loads, pre-clear vegetation communities are to be assumed.

7 Requirements for essential community infrastructure

1. Essential community infrastructure provides services vital to the community and may be in public or private ownership. In some cases, these facilities are integral to the City's ability to respond to disaster events. This infrastructure must remain functional during and immediately after disaster events.
2. Assessment of essential community infrastructure will need to consider the role and function of the infrastructure, including during a natural hazard event and the potential impacts on the community should the infrastructure be operationally impaired by a natural hazard.
3. Not every part of every facility will be vital to the wellbeing of the community. For instance, training rooms may be less vital than control rooms or equipment storage areas. The bushfire management plan is to justify any prioritisation of functionality for different elements of the development based on their significance during a disaster event. The level of functionality achieved during a disaster should be sufficient to ensure continuity of essential service provision. However, there may not be full functionality for the whole facility. Availability of alternative access routes during a bushfire is to be addressed if access to the facility is required to maintain operations or service to its catchment.
4. Development, including elements of essential community infrastructure which are vital to the functionality of that infrastructure in a bushfire, should be located to avoid high and medium bushfire hazard areas.

8 Principles for siting buildings in high and medium bushfire hazard areas

1. The way a building is sited on land is a basic factor influencing survival. The following factors should be considered for maximising survival:
    a. Checking data about previous fires in the local district can help determine the possible direction a bushfire would travel.
    b. Most bushfires occur during dry conditions, particularly in times of hot temperatures and low humidity, and are often accompanied by strong winds.
    c. Fires accelerate going uphill and decrease in speed travelling downhill.
    d. Building out over the hazard will increase the risk (a pole house with timber decks will be much more exposed than one set into the slope).
    e. Siting the structures downhill from the hazard reduces the risk (setbacks are still necessary to avoid falling trees and debris rolling downhill).
    f. Buildings are not sited in higher risk areas, particularly locations with a combination of slope and certain aspects;
    g. Setbacks from hazardous vegetation are to be maximised.
2. On larger lots it may be possible to site buildings in areas subject to lower bushfire hazard. The site assessment will assist in locating buildings having regard to combinations of slope and aspect on the site.

Note—Figure a illustrates the relative bushfire safety of house site locations based on slope and aspect considerations (1 being the safest, 6 being the most hazardous).

3. The order of preference for siting buildings is a low flat site set into southerly or south-east slopes, a site at the bottom of more exposed west and north-west slopes. The most dangerous sites are on or at the top of west or north-west slopes. The head of gullies with westerly aspects are to be avoided because fire winds funnel up such sites. The preferable location of buildings will also depend on the location and area of vegetation.
4. Reducing bushfire hazard may involve managing the structure of vegetation and the fuel load. Requirements for the building protection zone may involve managing the structure of vegetation and therefore, the fuel load. The requirement for building protection zone can assist in the management of hazardous vegetation as it is in an area maintained to minimise fuel loads so that a fire path is not created between the bushfire hazard and the building.

Note—Clearing of some types of vegetation is controlled in Brisbane. Reference should be made to other codes in the planning scheme and to relevant local laws for requirements. The Bushfire overlay code provides requirements for separation from vegetation likely to pose a bushfire hazard, specifically vegetation scoring higher than 4 on Table 8.2.5.3.C in the Bushfire overlay code.

Note—For contemporary guidance on acceptable methodologies for determining separation distance requirements refer to Bushfire Resilient Communities and AS 3959 Construction of buildings in bushfire-prone areas.

9 Separation from sources of bushfire hazard

Topographical features of the site and design elements are used to maximise separation between sources of bushfire hazard and dwellings or buildings, and manage risk. These features include the following:

a. roads, particularly perimeter roads and roads separating building locations on lots from vegetation scoring higher than 4 as described in Table 8.2.5.3.C in the Bushfire overlay code;
b. fire maintenance trails where used;
c. parkland and other areas maintained with reduced fuel loads such as mown grass, sports ovals, golf courses and car parks;
d. water bodies and waterways;
e. landscaped areas;
f. easements and other reserves such as future road reserves and maintained overland flow paths.

Note—For contemporary guidance on calculating asset protection zones refer to Bushfire Resilient Communities.

10 Design and construction of building protection zones

1. Building protection zones are to be established for the protection of buildings from bushfire:
    a. The inner 10m of the building protection zone is to be maintained in a very low fuel state. This area is designed to prevent continuity of fuel, such as shrubs or build-up of leaf litter extending to the building through:
        i. paving, lawn or non-combustible mulch such as gravel;
        ii. tree retention only if there is a vertical and horizontal separation of 2m between plants to ensure the canopy is not continuous.
2. The outer 10m of the building protection zone is to be maintained in a reduced fuel state. This area is designed to reduce bushfire intensity and shield buildings from radiant heat, and

prevent flames transferring from ground fuels to the canopy. In the outer zone, trees may be retained or planted in small clumps, retaining vertical and horizontal separation between any other plants to ensure that canopy is not continuous.

3. In all areas of the building protection zone, trees should be a distance 1.5 times the mature canopy height away from buildings, and should not overhang buildings.

Note—Any bushfire management zone, asset protection zone or similarly defined area approved as part of a bushfire management plan and used for bushfire management purposes is considered to be a bushfire management footprint plan. A building protection zone can comprise both the development footprint plan and the bushfire management footprint plan.

11 Roads and fire maintenance trails

11.1 Design of public roads

1. When reconfiguring a lot involving the opening of a new road, a perimeter road is the preferred option to separate bushland from urban areas. The public road system in a bushfire-prone area is to provide alternative access or egress for firefighters and residents during a bushfire emergency if part of the road system is cut by fire. Roads should provide sufficient width to allow fire-fighting vehicle crews to work with fire-fighting equipment about the vehicle.
2. Figure b demonstrates the perimeter road network separating development from potential sources of bushfire hazard. New lots do not back directly onto hazardous vegetation. The perimeter road allows for fire-fighting access. If a perimeter road is not used to isolate a cul-de-sac from the hazardous vegetation, alternative formal access and egress are provided. Using public roads is preferable to using easements.

11.2 Property access

The dwelling house is located as close as possible to the public road to allow residents and emergency service personnel to evacuate safely. Long property access roads linking dwelling houses to public roads are to be minimised.

11.3 Fire maintenance trails

1. Fire maintenance trails are only effective in the context of a strategic advantage and access for hazard-reduction operations. Fire maintenance trails present difficulties and costs associated with maintaining fire maintenance trails on private land. Proposals for fire maintenance trails will need to demonstrate clear benefits over the use of a perimeter road. A perimeter fire trail cannot be imposed on the adjoining lands.
2. Fire maintenance trails are primarily used as access for firefighters. They are also used for fire control lines and maintenance of buffers protecting development. In non-urban areas, they may surround isolated dwellings or groups of dwellings. In suburban subdivisions, they may function as a strategic control line around the hazard side of the development, if they are connected to the public road system at frequent intervals.
3. Fire maintenance trails are to be designed and located in accordance with a bushfire management plan prepared in accordance with this planning scheme policy. The bushfire management plan is to demonstrate that the fire maintenance trails:
    a. are located, designed and constructed to buffer development from bushfire hazard and allow access for fire-fighting vehicles to strategic areas of the site for fire fighting;
    b. are designed in compliance with Table 8.2.5.3.C in the Bushfire overlay code;
    c. adjacent to Council parkland are to be on private land where no public road interface can be achieved;

d. ~~are unfenced and accessible at all times by fire-fighting vehicles;~~
e. ~~connect through to a road network or network of other fire maintenance trails;~~
f. ~~respond to site topography and bushfire characteristics of the site and surrounding area;~~
g. ~~are located, designed and constructed to protect firefighter safety and provide for movement, manoeuvring and access to water supplies for fire fighting.~~
h. ~~are designed so that dead ends are avoided; however if a dead end exists, a turnaround of sufficient radius for a full lock by a Category 1 fire tanker should be constructed (radius[3] 12m) and if there is insufficient space for such a turnaround due to the topography, provision should be made to allow a maximum three-point turn (radius[3] 10m);~~
i. ~~are designed and constructed to avoid adverse environmental impacts, including soil erosion, impacts on natural hydrological flows, or other land degradation;~~
j. ~~link to existing fire maintenance trails or roads at each end and at maximum intervals of 200m, having regard to site topography, firefighter safety and the need to regularly access water supplies;~~
k. ~~do not alter natural hydrological flows or expose acid sulfate soils;~~
l. ~~primary trails are maintained to provide safe four-wheel drive access by fire-fighting vehicles.~~

12 ~~Landscaping~~

1. ~~The preparation of a landscaping plan is to be guided by the bushfire management plan requirements and best practice. The design and species selection in the landscape plan:~~
   a. ~~prevent flame impingement on the dwelling;~~
   b. ~~provide space and access for property protection;~~
   c. ~~reduce fire spread;~~
   d. ~~deflect and filter embers;~~
   e. ~~provide shelter from radiant heat;~~
   f. ~~reduce wind speed;~~
   g. ~~meet the spacing requirements in the bushfire protection zone;~~
   h. ~~use site features including topography and driveways to manage hazards;~~
   i. ~~maximise separation distances between structures and sources of bushfire hazard;~~
   j. ~~identify the use of appropriate materials and species in landscaping to manage fuel loads.~~
2. ~~All vegetative material can burn under the influence of bushfire. Careful attention must be paid to species selection, their location relative to their flammability, avoidance of continuity of vegetation horizontally and vertically, and ongoing maintenance to readily remove flammable fuels such as leaf litter, twigs and debris. Selection of plant species is not to be relied upon as a primary measure to reduce bushfire risk.~~

13 ~~Useful references~~

~~Cuong Tran and SEQ Fire and Biodiversity Consortium (2002) Fire Management Operational Manual Guidelines for planning and conducting fuel reduction and ecological burns on your property.~~
~~Ramsay G.C. and Rudolph L. (2003) Landscape and building design for bushfire areas. CSIRO Publishing, Melbourne, Victoria, Australia.~~
~~SEQ Fire and Biodiversity Consortium (2002) Individual Property Fire Management Planning Kit~~
~~Balancing fire safety with conservation of bushland plants and animals.~~

State of Victoria (2010) Overall Fuel Assessment Guide, 4th Edition July 2010, Fire and Adaptive Management Report 82, Department of Sustainability and Environment.
Victorian Country Fire Authority (2011) Landscaping for bushfire: garden design and plant selection.

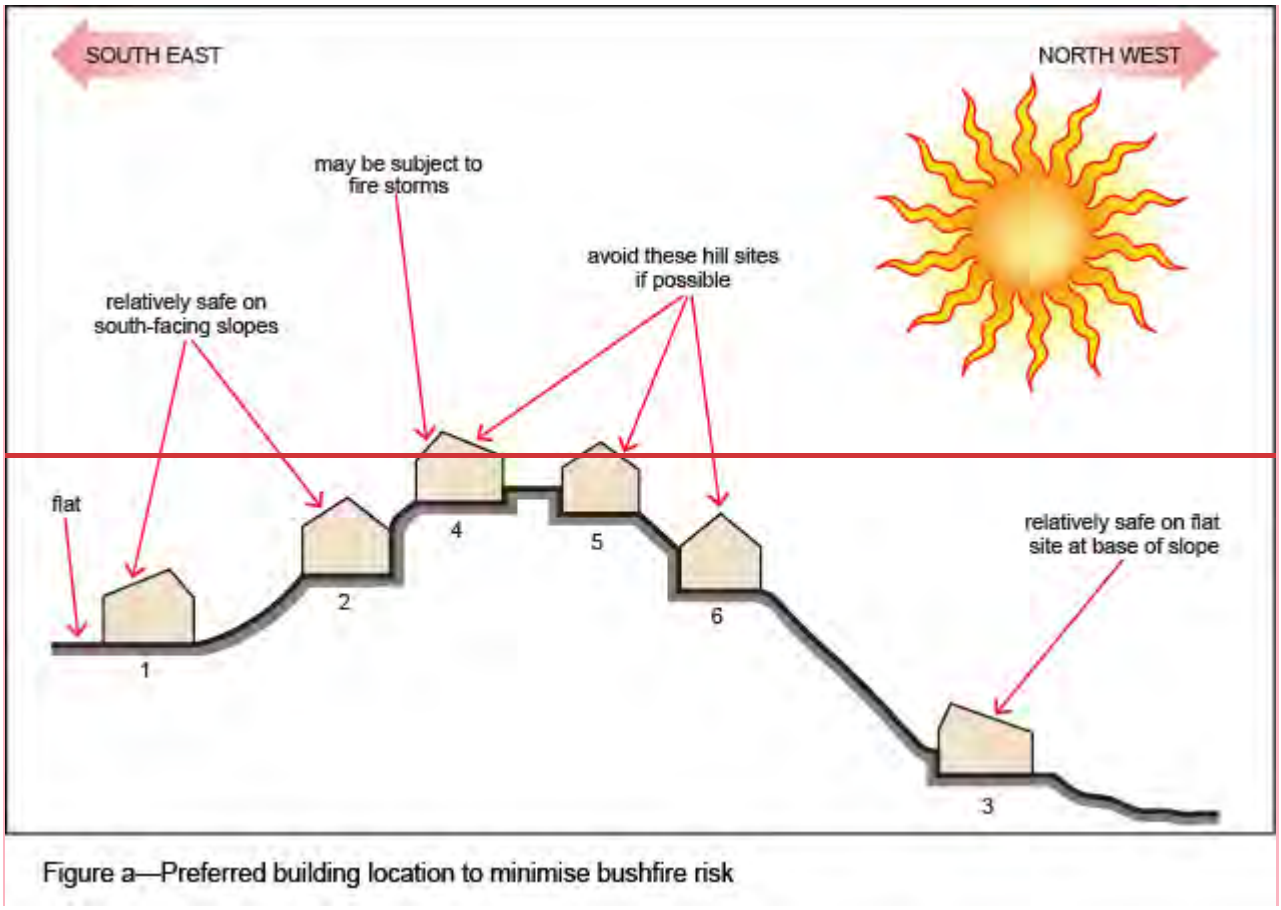

Figure a—Preferred building location to minimise bushfire risk

View the high resolution of Figure a- Preferred building location to minimise bushfire risk

Figure b—Preferred road network design to separate development from bushfire risk

~~View the high resolution of Figure b- preferred road network design to separate development from bushfire risk~~

Reason for change: Delete the existing content of the Bushfire planning scheme policy and replace with updated content to support and provide further information and guidance on the Bushfire overlay code. To integrate best practice approaches and methodology for undertaking bushfire hazard assessments and risk mitigation.

1 Introduction
- 1.1 Relationship to planning scheme
- 1.2 Purpose
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2.0 Suitably qualified professional
3.0 Bushfire prone areas
4.0 Undertaking a bushfire hazard assessment
- 4.1 Simple assessment of low threat vegetation and non-vegetated areas
- 4.2 Potential fireline intensity
- 4.3 Bushfire prone area mapping
- 4.4 Radiant heat flux

5.0 Guidelines for bushfire risk mitigation
- 5.1 Siting and design
- 5.2 Asset protection zones
- 5.3 Access and evacuation

5.4 Water supply
5.5 Landscape & vegetation management

1 Introduction

1.1 Relationship to planning scheme

This planning scheme policy provides:

a. information the Council may request for a development application;
b. guidance or advice about satisfying assessment benchmarks which identifies this planning scheme policy as providing guidance or advice.

1.2 Purpose

This planning scheme policy describes the need for, and preferred approach to, site-based bushfire hazard assessments and provides additional guidance on potential mitigation measures.

1.3 Terminology

In this planning scheme policy, unless the context or subject matter otherwise indicates or requires, a term has the following meaning:

hazardous vegetation (Queensland Fire Department (QFD) 'Bushfire Resilient Communities'): vegetation that contributes to fine fuels and results in a bushfire hazard when burnt. Areas that are mapped as either very high, high or medium potential bushfire intensity or hazard area include potentially hazardous vegetation that could support a significant bushfire. This vegetation is classified and mapped as having a vegetation hazard class.

2 Suitably qualified professional

1. A suitability qualified professional is to be engaged to undertake the bushfire hazard assessment and/or prepare bushfire management plans. Suitably qualified professionals include:
    a. persons with (AQF Level 8) qualifications in environmental science, environmental management (or an equivalent discipline);
    b. demonstrated experience in the assessment of bushfire hazard and risks.
2. A suitability qualified professional with demonstrated experience in botanical survey and spatial analysis methods, including use of geographic information systems (GIS) software, is preferred.

3 Bushfire prone areas

1. Bushfire prone areas in Queensland are identified, mapped and categorised as a function of potential fireline intensity, measured in kilowatts per metre (kW/m). Potential fireline intensity is a function of fire weather severity, landscape slope and fuel load based on classified vegetation communities.
2. Fireline intensity is a standardised measure of the rate that an advancing head fire would consume fuel energy per unit time per unit length fire front. The benefits of utilising fireline intensity as the principal measure of bushfire hazard, is that it can also be used to estimate the potential flame length and radiant heat flux based on distance from hazardous vegetation.
3. Areas of potential fireline intensity include potentially hazardous vegetation that could support a significant bushfire or be subject to significant bushfire attack. It includes potentially hazardous vegetation with a medium (4,000 – 20,000 kW/m), high (20,000 – 40,000 kW/m) or very high (>40,000 kW/m) potential bushfire intensity or hazard area. Bushfires in these areas have the potential for high to extreme levels of flame attack, radiant heat and ember attack.

4. Vegetated parts of the landscape which support fireline intensities of less than 4,000 kW/m are categorised as low hazard areas.
5. Land adjacent to bushfire prone areas is also at risk of significant bushfire attack from embers, flames or radiant heat. The latter are identified as potential impact buffer or hazard buffer areas and include all land within 100m of vegetation mapped as medium, high or very high potential bushfire intensity or hazard area. Together, the areas of potential fireline intensity, potential impact, hazard area, potential impact buffer and hazard buffer area form bushfire prone areas.

Editor's note—The mapped extent of the Very high potential bushfire, High potential bushfire or Medium potential bushfire intensity, potential impact buffer and potential impact sub-categories apply in Cedar Creek south precinct (Ferny Grove—Upper Kedron neighbourhood plan/NPP–001) in accordance with the Minister's conditions dated 28 May 2018. The Potential impact sub-category only applies in the Cedar Creek south precinct.

Note—Land located in the Cedar Creek south precinct (Ferny Grove—Upper Kedron neighbourhood plan/NPP–001) within 100m of the Very high potential bushfire, High potential bushfire or Medium potential bushfire intensity sub-categories may not be included in the mapping but is a designated bushfire prone area and assessed against the Bushfire overlay code.

4 Undertaking a bushfire hazard assessment

1. Where a development is proposed within the Bushfire overlay, evidence may be provided by an applicant to verify the actual extent and level of hazard to which a site is exposed, which may differ to what is shown on the Bushfire overlay map.
2. This may be appropriate where a detailed site assessment provides greater precision or there have been changes to the spatial extent or configuration of vegetation within the landscape. This may include circumstances where clearing or revegetation has occurred or is proposed.
3. The nature and complexity of this verification may depend on the circumstances of the site and the nature of the proposed development. However, all assessments should have regard to the classification of vegetation within 150m of the site, and the likely extent of existing hazard and ultimate hazard (i.e. post-development), including consideration of:
    a. existing vegetation and management regimes;
    b. development approvals;
    c. identified future revegetation.
4. Where there is no hazardous vegetation within 100m of the site, or low threat vegetation (in accordance with AS 3959 definition) or vegetation with a low hazard fireline intensity (i.e. < 4,000kW/m), the Bushfire overlay code remains an applicable assessment benchmark, but need only be addressed to the extent relevant.

4.1 Simple assessment of low threat vegetation and non-vegetated areas

1. A relatively simple assessment may be possible to determine there is no vegetation or only low threat vegetation in proximity to the development site. The criteria for determining this are set out below, which are consistent with AS 3959 Construction of buildings in bushfire-prone areas.
2. Bushfire hazard may also exist due to ember attack even where hazardous vegetation is external to the site or development area, but is less than 100m distant. The Bushfire overlay code remains applicable and relevant in these circumstances.
3. Evidence of the assessment of low threat and non-vegetated areas relevant to a development proposal should be provided as part of the application material provided to Council.

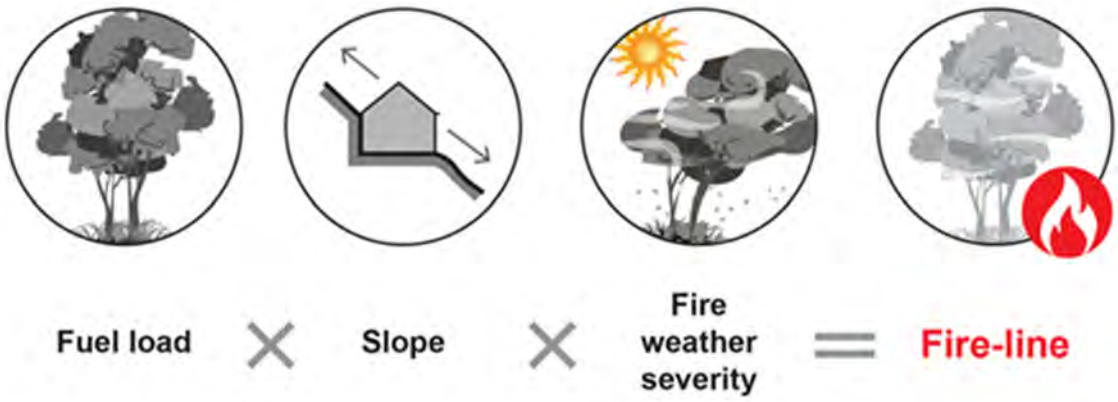
4.1.1 Low threat vegetation and non-vegetated areas

1. Where the vegetation is one or a combination of any of the following, the vegetation is considered to be low threat vegetation or non-vegetated:
    a. Vegetation of any type that is more than 100m from the site.
    b. Single areas of vegetation less than 1 ha in area and not within 100m of other areas of vegetation being classified.
    c. Multiple areas of vegetation less than 0.25ha in area and not within 20m of the site, or each other or other areas of vegetation being classified vegetation.
    d. Strips of vegetation less than 20m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m of the site or each other, or other areas of vegetation being classified vegetation.
    e. Non-vegetated areas, including open water bodies, waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
    f. Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, public reserves and parklands maintained in minimal fuel condition, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.
2. Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognisable as short-cropped grass for example, to a nominal height of 100mm).
3. Where vegetation exceeds this height, it is not considered low threat vegetation, and an appropriate vegetation hazard classification must be used.
4. An area can also be classified as a low hazard area by calculating the potential fireline intensity in accordance with the methodology outlined in section 4.2.

4.2 Potential fireline intensity

1. Potential fireline intensity used to identify, map and categorise bushfire prone areas in Queensland, can be calculated in accordance with the method described in Queensland Fire Department (QFD) publications ‘A new methodology for State-wide mapping of bushfire prone areas in Queensland’ and ‘Bushfire Resilient Communities’.
2. Bushfire hazard assessment consists of two parts:
    a. Calculate fireline intensity based on site-based assessment of the three main variables:
        i. potential fuel load based on vegetation hazard class;
        ii. maximum landscape slope;
        iii. fire weather severity.
    b. Separation and radiant heat exposure: using the site-specific assessment of factors, calculate defendable space width needed to achieve specific levels of radiant heat exposure (or radiant heat flux), expressed as kW/m^2.

Note—For a bushfire hazard assessment, maximum slope is the slope of the land within the landscape, not the localised slope of the land in relation to the site as this can result in an erroneous classification of ‘low hazard’ within a bushfire prone landscape.



View the high resolution of Figure a - Variables used to calculate potential fire-line intensity

3. Where development involves changes to the extent or configuration of vegetation, re-mapping of bushfire prone areas may be needed. Re-modelling, including 'patch and corridor filtering' (in accordance with section 4.3.1) may also be necessary where applicants propose to exclude areas of hazardous vegetation from being considered bushfire prone areas. Re-modelling requires access to skills in spatial analysis and modelling, including the use of geographic information system (GIS) software.
4. Modelling of potential fireline intensity should incorporate the effects of the proposed development on the extent and configuration of vegetation, including all necessary clearing to support the development and infrastructure, and all requirements for revegetation, landscaping or environmental offsets.

4.2.1 Vegetation and fuel load

1. Vegetation is the primary source of fuel which powers a bushfire. The availability of fuel is a function of the amount (composition and structure) of vegetation within the landscape, the characteristics of the vegetation which contribute to its combustibility under fire weather conditions and the configuration of the vegetation within the landscape.
2. Vegetation structure and composition are described according to vegetation hazard classes (VHC) for the purposes of bushfire hazard assessment. Potential fuel load represents the ambient fuel load for a VHC that contributes to the available fuel load that is combustible under severe weather conditions. It is calculated as the sum of surface fuel load, near-surface fuel load, elevated fuel load and assumed bark fuel. The potential fuel load represents the 80th percentile fuel load for each fuel category within a VHC, based on the long-term unburnt condition. The vegetation hazard classes which occur in Brisbane are listed in Table 2.
3. Applicants may propose an alternative VHC where the results of a reliability assessment or site-specific botanical survey demonstrate differences between the observed classification or extent of VHCs and those indicated by the State-wide mapping of VHCs.
4. Where alternative VHCs are proposed, applicants must undertake ground-truthing of vegetation communities according to broad vegetation groups. Site-based assessment of VHCs should be carried out by a suitably qualified professional with experience in botanical survey methods. Ground-truthing may be supported by other forms of evidence including:
    a. air photo interpretation using current, high-resolution aerial photography;
    b. Queensland Herbarium mapping of regional ecosystems.

5. Unless all land within 100m of the site meets the definition of low threat vegetation or is shown to have a potential fireline intensity <4,000kW/m, applicants should, at minimum, create a post development vegetation hazard class map, which incorporates the effects of the proposed development on the extent and configuration of vegetation within the assessment area including all necessary clearing to support the development and infrastructure or to meet requirements for revegetation, landscaping or environmental offsets.
6. When assessing VHCs, applicants may also need to consider the effects of:
    a. vegetation restoration and revegetation;
    b. regrowth and other non-remnant vegetation;
    c. heterogeneous patches.

4.2.1.1 Vegetation restoration and revegetation

1. Where vegetation restoration, revegetation or environmental offsets are necessary as part of a development application or required by a development approval, applicants must include these areas as part of their post-development map of VHCs.
2. Applicants should also consider where revegetation is envisaged by:
    a. a development approval on the subject site or an adjoining site;
    b. an infrastructure agreement;
    c. Council-led revegetation and environmental offset programs; or
    d. any other identified public or private/commercial revegetation activities.
3. In any of these circumstances, the vegetation is to be mapped according to the approved or proposed revegetation extent and then classified as though the vegetation had reached its remnant state (that is, its long-term unburnt condition), including rules for patches and corridors of vegetation. Where insufficient detail is available to determine VHCs, pre-clearing regional ecosystems or broad vegetation community status are to be assumed.
4. In some cases, revegetation planned by Council for areas of strategic biodiversity value may differ from the pre-clearing regional ecosystems or broad vegetation community. Applicants may wish to contact Council to confirm intentions for specific areas. Where such planning has not occurred, the pre-clearing vegetation community is to be assumed.

4.2.1.2 Regrowth and other non-remnant vegetation

Regrowth and other non-remnant vegetation should be classified according to VHC and prescribed a fuel load in accordance with Table 2.

4.2.1.3 Heterogeneous patches

In some cases, it is not possible, nor useful from a modelling perspective, to discretely map each individual vegetation community, particularly at scales less than 1:10,000. In circumstances where the VHC is found to be heterogeneous, the potential fuel load is the sum of the proportions of the potential fuel load for each observed VHC. Applicants will need to determine the relative proportion of each VHC and calculate the total potential fuel load according to the sum of the proportions of potential fuel load of each VHC type.

4.2.2 Slopes

1. The slope of the land within the landscape is a major determinant of fire behaviour, particularly the slope of the land under vegetation which contributes to bushfire hazard.
2. To assess slope, it is recommended that applicants use the 25m state-wide map of maximum landscape slope, representing the maximum potential slope of the landscape which could influence the rate of bushfire spread and fireline intensity. Alternatively, applicants may utilise topographic data to create an alternative map of landscape slope from:

a. a contour map available from Queensland spatial catalogue; or
b. a survey prepared by a Surveyors Board Queensland-registered survey; or
c. digital terrain model or LiDAR data available from Queensland spatial catalogue.

3. The maximum recommended gridded resolution of alternative landscape slope maps is 10m.

4.2.3 Fire weather severity

1. Fire behaviour and intensity is influenced by a range of weather variables such as wind speed, relative humidity, temperature and atmospheric conditions, as well as preceding drought conditions. These variables are summarised as an index value which can be used by proxy to estimate and predict fire behaviour and fire weather severity.
2. When assessing site-specific bushfire hazard, applicants should adopt the site-specific Forest Fire Danger Index (FFDI) (5% AEP) index value for hazard assessment and modelling purposes. The FFDI value of 40 adopted in Method 1 of AS 3959 should not be used as it fails to consider regional differences in weather severity that might be expected for the 5% AEP weather event. The adoption of locally applicable FFDI (5% AEP) values does not conflict with AS 3959 which explicitly allows for refinement of FFDI values where sufficient climate data and modelling is available.
3. The fire weather severity values for different parts of Brisbane are available from the QFD website using the Bushfire Resilient Communities MapViewer.

4.3 Bushfire prone area mapping

The following information must be provided on fully dimensioned and scaled plans at minimum, as failure to do so will likely result in the bushfire assessment not being accepted:

1. proposed development;
2. vegetation hazard classes (in accordance with QFD ‘Bushfire Resilient Communities’);
3. potential fireline intensity (symbology by hazard class) and potential impact buffers;
4. where any patch and corridor rules are applied, relevant width or areas measurements are required as well as, 25m x 25m grid, relevant identification of continuous/discontinuous vegetation, vegetation hazard classes and any effective fuel loads that have been amended.

4.3.1 Patch and corridor rules

Hazardous vegetation within rural and urban landscapes is frequently fragmented, giving rise to smaller patches and narrow corridors of vegetation that are likely to have lower fireline intensities than larger expanses of continuous vegetation. The spatial context of these patches and corridors of vegetation has a major influence on the likelihood of fire arrival, the severity of a fire at the boundary of the patch, and the behaviour of a fire within the patch. As part of re-modelling of bushfire hazard, applicants may undertake patch and corridor filtering in accordance with QFD ‘Bushfire Resilient Communities’.

4.3.2 Non-GIS based patch and corridor rule

1. Simple filtering of small patches and corridors which are unlikely to represent a bushfire risk may also be undertaken by applicants to more accurately identify the extent of bushfire hazard.
2. This assessment must consider intended revegetation as outlined in section 4.2.1.
3. Evidence of the filtering undertaken must be provided as part of the application material provided to Council.

4.3.3 Simple patch and corridor filtering

1. Where not conducting GIS-based assessment in accordance with sections 4.2.6 and 6.2(8) of ‘Bushfire Resilient Communities’, prepare a ground-truthed VHC map of all mapped

vegetation within 150m of the site and apply the following patch and corridor filtering rules in sequence:

a. If less than 1ha of continuous fuel and more than 100m from other continuous fuel >2ha in size = non-bushfire prone area (or low hazard).
b. Patches greater than 1ha and less than 2 ha in size and >100m from any other continuous fuel vegetation >2ha in size have 50% decrease in effective fuel load.
c. Remove corridors of continuous vegetation less than 50m in width.

2. Following the application of the above steps for the ground-truthed VHC map, prepare potential bushfire intensity and potential impact buffer maps.

4.4 Radiant heat flux

1. Calculation of radiant heat flux is required to demonstrate compliance with assessment benchmarks relating to separation of building envelope plans.
2. QFD 'Bushfire Resilient Communities' describes two suitable methodologies for assessing radiant heat flux. Applicants are to use either:
   a. QFD Bushfire Asset Protection Zone Width Calculator (refer also to 'Bushfire Resilient Communities') – which is preferred by Council; or
   b. Method 2 of AS 3959 subject to adoption of site-specific values for slope, fire weather severity (or FFDI) and potential fuel load classified according to VHCs, according to the process described in section 4.2 and the parameters described below.
3. Both methods utilise the view factor method for calculation of radiant heat flux, however Method 2 assessment allows for alternative fuel loads associated with heterogeneous patches to be utilised – a feature not yet included as part of the Bushfire Asset Protection Zone Width Calculator.

4.4.1 Asset Protection Zone Width Calculator

The Bushfire Asset Protection Zone Width Calculator is available from the Queensland Fire Department website. QFD 'Bushfire Resilient Communities' provides guidance on the use of the calculator.

4.4.2 Method 2 calculations using fixed parameters

Table 1 sets out the parameters to be adopted where applicants choose to utilise Method 2 of AS 3959. Alternative parameter values are not supported unless the patch size meets the definition of a small patch and the effective fuel load differs from the fixed parameters.

Table 1—Method 2 parameters

Input	**Fixed parameter**
Potential fuel load (tonnes/ha)	Site specific VHCs, including their 'remnant' status, and their associated potential fuel loads in accordance with section 4.2 and Table 2.
Surface fuel (tonnes/ha)	The sum of surface and near-surface fuel according to classified VHC determined in accordance with section 4.2 and Table 2.
Forest Fire Danger Index (FFDI)	Site-specific fire weather severity for the 5% AEP fire weather event determined from the QFD website.
Effective slope (degrees)	The slope of the land under hazardous vegetation which most influences the bushfire attack (refer to C2.2.5 of AS 3959).

	It may be necessary to consider the slope under the classified vegetation for distances greater than 100m in order to determine the effective slope for that vegetation classification in accordance with AS 3959. Slope is limited to values of between 1 and 20 degrees, even in circumstances where actual slope values may exceed these limits. All upslopes and flat land must use a slope value of 0 degrees. In circumstances where slope values exceed 20 degrees for downslope, the maximum value shall be used.
Site slope (degrees)	Slope of the land between hazardous vegetation and the closest edge of the building envelope or lot boundary.
Ambient temperature	308K (35C)
Heat of combustion	18,600kJ/kg
Flame temperature	1,200K
Flame width	100m
Flame emissivity	0.95
Wind speed	45km/hr (for shrub and heath VHCs only)
Vegetation height	8m (for shrub and heath VHCs only).

5 Guidelines for bushfire risk mitigation

1. Where development is proposed within bushfire prone areas, a bushfire management plan is likely to be required to meet various provisions of the Bushfire overlay code. The bushfire hazard assessment and bushfire management plan can be submitted as a single document (e.g. bushfire hazard assessment and management plan).
2. A bushfire management plan may be required to demonstrate compliance with a number of assessment benchmarks. The Bushfire overlay code sets out a number of requirements for management and mitigation of bushfire risk. These include:
    a. siting of development and building envelope plans;
    b. separation between buildings and hazardous vegetation;
    c. areas for firefighting access and operation (often referred to as asset protection zones);
    d. all weather emergency access and vehicular evacuation routes;
    e. evacuation plans;
    f. provision of an adequate water supply;
    g. management of vegetation and landscaping.
3. Bushfire risk mitigation measures which can be achieved by development are designed to complement measures such as bushfire resilient building construction and emergency response. Bushfire resilient building construction and emergency response are not a substitute for achieving the requirements of the code. Construction of buildings to withstand bushfire attack and emergency response are complementary measures which sit outside the planning scheme.

4. Applicants may refer to guidance on measures that assist in bushfire resilient design in QFD 'Bushfire Resilient Communities' and in 'Bushfire Resilient Building Guidance for Queensland Homes'.
5. Additional general guidance is provided below. Note that the following do not purport to change or override the assessment benchmarks in any way.

5.1 Siting and design

Design measures which may assist to achieve the assessment benchmarks include:

a. Locating new buildings as close as possible to property entrances to facilitate safe and rapid evacuation during a bushfire event.
b. Providing clear access to public roads with capacity to function before, during and after a bushfire event for both evacuation and emergency services.
c. Providing safe, alternative 'all weather' evacuation routes where one route may become blocked in the event of a bushfire.
d. Providing opportunities for evacuation to a 'neighbourhood safer place', such as a designated public area well away from bushfire prone areas.
e. Ensuring evacuation routes and exits are available which avoid bushfire hazard areas and are protected or shielded from bushfire attack.
f. Ensuring evacuation routes, both internal and external to the development, likely to be used in the event of a bushfire have sufficient capacity for the evacuating population.
g. Avoiding complex subdivision shapes such as hourglass patterns which give rise to access bottlenecks and have an increased area of the development exposed to bushfire hazard.
h. Avoiding ribbons/strips of development surrounded by hazardous vegetation, particularly on ridgelines, saddles or crests.
i. Minimising the length or perimeter of development adjacent to bushfire prone areas.

5.2 Asset protection zones

1. Evidence demonstrates that increasing the distance between buildings and hazardous vegetation and fuels is critical to reducing vulnerability to bushfire attack, direct flame contact, radiant heat and ember attack. Separation areas reduce vulnerability to bushfire attack by establishing a 'low fuel' buffer between development and bushfire prone areas which:
    a. reduces the viability of wind-borne embers - the main attack vector responsible for ignition of homes;
    b. diminishes the effect of bushfire radiant heat on structures and smoke on occupants;
    c. enables access for emergency services to suppress fires and protect property during critical event conditions;
    d. provides opportunities to establish control lines from which to conduct hazard reduction or back-burning operations.
2. Providing additional building-to-building separation reduces the likelihood of adjacent buildings igniting in the event that a neighbouring building is ignited.
3. In addition, separation distances must be practical - vegetation and landscaping must be suitable to implement and maintain as part of development permit condition. As such, all necessary clearing and vegetation management must be contained within the boundary of the lot (or within a subsequent stage of the same development). An assessment must not rely on clearing by third parties or on land which is not included as part of the development application or not controlled by the applicant.
4. In addition, management arrangements must be provided in a way that minimises the ongoing risk of bushfires on the site and in the surrounding area, including:
    a. nominating procedures for vegetation management on the land;
    b. assigning responsibility for ongoing vegetation management;

c. including mechanisms to ensure that vegetation management is carried out in accordance with the nominated procedures e.g. via a covenant under the *Land Titles Act 1994 (Qld).*

5.3 Access and evacuation

1. Safe and efficient access to property is necessary before, during and after a bushfire event for evacuation of occupants as well as for emergency services.
2. Well-designed and located access to and from sites which are at risk of bushfire attack reduces vulnerability and enhances community resilience by:
   a. providing efficient, easy and safe movement away from any encroaching fire for both occupants and emergency services;
   b. providing emergency services with easy access to a safe working area close to dwellings and water supply to suppress fires and protect property;
   c. providing alternative safe access and evacuation routes should access in one direction be blocked in the event of a bushfire;
   d. providing opportunities to establish control lines from which to conduct hazard reduction or back-burning operations.
3. The number and standard of evacuation routes may depend on such considerations as:
   a. the number and arrangement of egress routes in relation to each other and the bushfire hazard;
   b. the length of a single access route before connecting with the wider public road network;
   c. the design capacity of the road network, including intersections, having regard to the number of households and properties served and road performance under peak evacuation conditions;
   d. the existence of bottlenecks or constriction points in the road network within the development or relied on as an evacuation route;
   e. whether the evacuation routes traverse the flame zone (medium, high and very high bushfire hazard areas) rather than ember attack zone.
4. Provision of a safe and efficient evacuation routes should not be reliant on concurrent or future stages of development to connect to an existing public road network.
5. Alternative egress routes may be required in consideration of potential bushfire scenarios and the scale, arrangement and location of hazardous vegetation in the surrounding area;
6. Where an early warning system or evacuation plan is required, consideration should be given to:
   a. the identification of fire weather severity (e.g. severe, extreme or catastrophic fire weather) and corresponding emergency management actions;
   b. the nature of the development and the number and capabilities of likely occupants, employees or visitors;
   c. suitable assembly points and procedures for accounting for occupants, employees or visitors;
   d. the transport options available and their capacity;
   e. evacuation routes available and identification of a safe refuge;
   f. training, warning and administrative procedures.
7. Where a fire trail is proposed, consideration should be given to:
   a. Fire trails are only effective in the context of a strategic advantage and access for hazard-reduction operations. Fire trails present difficulties and costs associated with maintaining fire trails on private land. Proposals for fire trails will need to demonstrate

clear benefits over the use of a perimeter road. A perimeter fire trail cannot be imposed on the adjoining lands.

b. Fire trails are primarily used as access for firefighters. They are also used for fire control lines and maintenance of buffers protecting development. In non-urban areas, they may surround isolated dwellings or groups of dwellings. In suburban subdivisions, they may function as a strategic control line around the hazard side of the development, if they are connected to the public road system at frequent intervals.

c. Fire trails are to be designed and located in accordance with a bushfire management plan prepared in accordance with this planning scheme policy. The bushfire management plan is to demonstrate that the fire trails:

i. are located, designed and constructed to buffer development from bushfire hazard and allow access for emergency services vehicles to strategic areas of the site for fire fighting or fire fuel reduction activities;
ii. are designed in compliance with Table 8.2.5.3.C in the Bushfire overlay code;
iii. adjacent to Council parkland are to be on private land where no public road interface can be achieved;
iv. are unfenced and accessible at all times by emergency services vehicles;
v. are connect through to a road network or network of other fire trails;
vi. are not reliant on concurrent or future stages of development to connect to a public road or existing network;
vii. are equipped with adequate drainage to prevent soil erosion and minimise ongoing trail maintenance;
viii. respond to site topography and bushfire characteristics of the site and surrounding area;
ix. are located, designed and constructed to protect firefighter safety and provide for vehicle movement, manoeuvring and access to water supplies for emergency services;
x. are designed so that dead ends are avoided; however if a dead end exists, a turnaround of sufficient radius for a full lock by a Category 1 fire tanker should be constructed (radius[3] 12m) and if there is insufficient space for such a turnaround due to the topography, provision should be made to allow a maximum three-point turn (radius[3] 10m);
xi. are designed and constructed to require minimal maintenance and avoid adverse environmental impacts, including soil erosion, impacts on natural hydrological flows, or other land degradation;
xii. are located outside of land mapped in the Biodiversity areas overlay or where not possible, within existing disturbed, degraded or cleared areas;
xiii. link to existing fire trails or roads at each end and at maximum intervals of 200m, having regard to site topography, firefighter safety and the need to regularly access water supplies;
xiv. do not alter natural hydrological flows or expose acid sulfate soils;
xv. are maintained to provide safe four-wheel drive access by fire-fighting vehicles.

5.4 Water supply

1. Access to an adequate reticulated or dedicated, static water supply for firefighting purposes is an essential element of bushfire safety planning. Reticulated hydrant systems should be installed wherever possible.

2. Where hydrants are not available, a dedicated static supply is to be provided. The fire-fighting supply must be dedicated to ensure that it is available at all times for the intended use. Due to regular drought events, swimming pools, farm dams and ponds are not considerable reliable sources of dedicated static supply in Queensland.

5.5 Landscape & vegetation management

1. Landscape design and management is concerned with avoiding or minimising opportunities for ignition of landscaping features and providing a reduced fuel area which is compatible with the maintenance of the asset protection zone.
2. Examples of landscape design and vegetation management measures include the following:
    a. Establishing a low fuel zone around buildings. Flammable materials should not be touching or be close to vulnerable parts of buildings such as windows, decks and eaves. Such fuel includes:
        i. flammable shrubs and trees;
        ii. flammable mulches or fences;
        iii. trees where the canopy overhangs the building;
        iv. climbing plants or vines in contact with external timber fascia, pergolas, posts, beams and/or trellis.
    b. Establishing non-flammable features such as tennis courts, swimming pools, dams, maintained lawns, driveways or paths within separation areas between the development and bushfire prone areas. Paths and driveways should use non-combustible materials such as clay, concrete, gravel and pebbles.
    c. Ensuring potential hazardous features are sited well away from the development and, preferably, sufficiently separated from bushfire prone areas or shielded from bushfire attack by other buildings such that they are not consumed and contribute to hazard.
    d. Ensuring the layout of garden beds, lawns and driveways or paths are configured to break-up the continuity of fuel loads within separation areas. Continuous vegetation within separation areas assists the spread of fire – separating garden beds and clumps of trees or shrubs with areas of low fuel in between breaks up fuel continuity; reducing potential rate of spread and fire intensity. Examples include placing maintained lawns, pathways or ponds between clumps of trees or shrubs and garden beds.
    e. Creating gaps in canopy trees through selective clearing of existing vegetation or planting layout; ensuring tree canopies do not overlap or by creating large gaps between groups or clumps of trees.
    f. Provided that reliable and sufficient water is available, installation of irrigation and sprinkler systems to create a well-watered landscape.
3. Effective landscape design can also reduce or limit bushfire attack risks by providing barriers which limit the impact of direct flame contact, radiant heat, embers attack, and wind. Examples of landscape barrier measures include:
    a. Selection of trees and shrubs with good barrier-forming attributes;
    b. Non-combustible fences and retaining walls (e.g., stone walls);
    c. Locating non-combustible water tanks to act as radiant heat barriers;
    d. Locating barrier planting where they are likely to be most effective.
4. The benefits of these barrier measures should not be relied on as an alternative to achieving adequate separation in accordance with the outcomes sought by the Bushfire overlay code. Landscape barrier measures should only be used to supplement other landscape design measures targeting vegetation and fuel management.

5. Physical barriers such as fences and walls may provide shielding from radiant heat in certain circumstances; however, should not be used in circumstances where they would limit or impede emergency services response e.g. reduce visibility or limit emergency services access or suppression. Radiant heat shields such as non-combustible fencing and walls may also be used to reduce radiant heat exposure, however they cannot be relied upon to make otherwise intolerable development (i.e. >29kW/m2) tolerable (i.e. <29kW/m2).

Table 2—Vegetation hazard classes and fuel loads for Brisbane

VHC Code	Vegetation hazard class	Potential fuel load (t/ha)						Prone type[1]		Fuel continuity[2]	
		Surface	Near-surface	Elevated	Bark	Total (Remnant)	Total (Non-remnant)	Remnant	Non-remnant	Remnant	Non-remnant
2.1	Complex to simple, semi-deciduous mesophyll to notophyll vine forest	3.5	0.0	0.0	0.0	3.5	12.0	3	1	2	1
4.1	Notophyll and notophyll palm or vine forest	4.5	0.0	0.0	0.0	4.5	12.0	3	1	2	1
5.1	Notophyll to microphyll vine forests	3.9	0.0	0.0	0.0	3.9	12.0	3	1	2	1
7.1	Semi-evergreen to deciduous microphyll vine forest	6.0	0.0	0.0	0.0	6.0	12.0	3	1	2	1
8.1	Wet eucalypt tall open forest	28.0	3.0	2.0	2.0	35.0	35.0	1	1	1	1
9.1	Moist to dry eucalypt open forests on coastal lowlands and ranges	17.5	3.5	2.2	1.0	24.2	24.2	1	1	1	1
9.2	Moist to dry eucalypt woodland on coastal lowlands and ranges	11.4	3.5	1.3	1.0	17.2	17.2	1	1	1	1
9.3	Shrubland within moist to dry eucalypt on coastal lowlands and ranges	7.8	3.0	1.9	0.0	12.7	12.7	1	1	1	1
10.1	Spotted gum dominated open forests	16.3	3.0	1.5	0.0	20.8	20.8	1	1	1	1

10.2	Spotted gum dominated woodlands	14.0	3.0	1.0	0.0	18.0	18.0	1	1	1	1
11.2	Moist to dry eucalypt woodlands on basalt areas	7.5	4.0	0.5	1.0	13.0	13.0	1	1	1	1
12.1	Dry eucalypt open forest on sandstone and shallow soils	15.0	3.5	1.5	1.0	21.0	21.0	1	1	1	1
12.2	Dry eucalypt woodlands on sandstone and shallow soils	12.0	2.6	1.8	1.0	17.4	17.4	1	1	1	1
13.1	Dry to moist eucalypt open forests on undulating metamorphics and granite	15.9	3.5	1.4	1.0	21.8	21.8	1	1	1	1
13.2	Dry to moist eucalypt woodlands on undulating metamorphics and granite	9.4	3.4	0.6	1.0	14.4	14.4	1	1	1	1
16.1	Eucalyptus dominated forest on drainage lines and alluvial plains	10.0	3.8	1.2	1.0	16.0	16.0	1	1	1	1
16.2	Eucalyptus dominated woodland on drainage lines and alluvial plains	7.5	3.6	0.5	0.0	11.6	11.6	1	1	1	1
16.3	Shrubland associated with eucalyptus woodlands on drainage lines	5.8	2.7	0.1	0.0	8.6	8.6	1	1	1	1
16.6	Sparsely vegetated areas associated with eucalyptus woodlands on drainage lines	1.2	2.0	0.0	0.0	3.2	3.2	3	3	2	2
17.2	Dry woodlands dominated by poplar box, silver-leaved ironbark or White's ironbark on sand or depositional plains	6.0	3.0	0.6	0.0	9.6	9.6	1	1	1	1

18.2	Dry eucalypt woodlands on sand or depositional plains	7.1	3.3	0.6	0.0	11.0	11.0	1	1	1	1
21.1	Melaleuca dry open forest on sandplains or depositional plains	7.8	3.7	1.4	2.0	14.9	14.9	1	1	1	1
21.2	Melaleuca dry woodlands on sandplains or depositional plains	3.7	3.4	0.6	1.0	8.7	8.7	1	1	1	1
22.1	Melaleuca open forests on seasonally inundated lowland coastal swamps	15.4	8.0	3.0	2.0	28.4	28.4	1	1	1	1
28.1	Open forests in coastal locations with species such as she-oak or swamp box	22.2	2.7	2.0	0.0	26.9	26.9	1	1	1	1
28.2	Woodlands in coastal locations with species such as she-oak and swamp box	13.8	3.2	1.3	0.0	18.3	18.3	1	1	1	1
28.4	Grassland associated with woodlands in coastal locations	8.0	2.4	2.0	0.0	12.4	12.4	1	1	1	1
29.6	Sparsely vegetated areas associated with heathlands, scrubs and shrublands	0.0	2.1	0.5	0.0	2.6	2.6	3	3	2	2
34.5	Sedgeland dominated wetlands	3.0	5.0	5.0	0.0	13.0	13.0	1	1	1	1
35.3	Shrubland associated with mangroves and tidal saltmarshes	0.0	0.0	0.0	0.0	0.0	0.0	3	3	2	2
35.4	Tidal saltmarshes	1.0	2.9	0.2	0.0	4.1	4.1	2	2	1	1

36.1	Exotic and hardwood plantation	22.3	1.5	1.2	1.0	26.0	26.0	1	1	1	1
37.1	Hoop plantations	3.0	2.0	0.0	0.0	5.0	5.0	3	3	2	2
38.4	Continuous dryland cropping and horticulture	0.8	3.0	0.0	0.0	3.8	3.8	2	2	1	1
38.5	Discontinuous irrigated cropping and horticulture	0.5	1.0	0.5	0.0	2.0	2.0	3	3	2	2
39.2	Low to moderate tree cover in built-up areas	2.0	3.0	2.0	1.0	8.0	8.0	3	3	2	2
40.4	Continuous low grass or tree cover	0.5	4.0	0.5	0.0	5.0	5.0	2	2	1	1
41.4	Discontinuous low grass or tree cover	0.5	2.0	0.5	0.0	3.0	3.0	3	3	2	2
42.6	Nil to very low vegetation cover	1.0	1.0	0.0	0.0	2.0	2.0	3	3	2	2
43.6	Water bodies or very low vegetation cover	0.0	0.0	0.0	0.0	0.0	0.0	3	3	2	2

Notes applying to Table 3—
(1) Prone type: 1 = Bushfire prone, 2 = Grass fire prone, 3 = Low hazard
(2) Fuel continuity: 1 = Continuous, 2 = Discontinuous

Schedule 6 Planning scheme policies \ SC6.16 Infrastructure design planning scheme policy \ Chapter 1 Introduction

Table 1.1.4.A—Standard drawings

Reason for change: Update or add a Brisbane Standard Drawing.

BSD-2022	Vehicle crossing (driveway) – – Single dwelling (>10m street frontage) – Sheet 1 of 2	~~E~~F	xx 2026
	Vehicle crossing (driveway) – Single dwelling – Narrow and shared driveways – Sheet 2 of 2	F	xx 2026

Schedule 6 Planning scheme policies \ SC6.17 Landscape design planning scheme policy

Reason for change: Change to provide additional guidance and requirements for calculating green plot ratio.

Contents

1 Introduction
    1.1 Relationship to planning scheme
    1.2 Purpose
    1.3 Terminology
2 Climatic factors
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3 Growing media
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4 Plant selection
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    6.1 Irrigation rates
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    6.3 Sizing of water tanks and cisterns
    6.4 Irrigation design
7 Landscaping containment
8 Structural considerations
9 Drainage and waterproofing
10 Landscape maintenance
11 Green plot ratio

11 Green plot ratio

11 Green plot ratio

1. A green plot ratio (GPR) provides a quantitative measure for determining the amount of green infrastructure proposed through new development. The measure can be used as a tool for practitioners to optimise the design and maximise the ecosystem services that landscaping and green infrastructure can provide. Assessment benchmarks may also nominate a minimum requirement for GPR to achieve the desired outcomes.
2. GPR is the proportion of the site that is used for green infrastructure areas, expressed as a percentage. GPR can be determined through the following equation:
   GPR = total of all green infrastructure area ÷ total site area x 100

Note—Where a development includes land to be dedicated as public land, the total site area is to be reduced by the area of land to be dedicated.

11.1 Green infrastructure area

11.1 Green infrastructure area

1. Green infrastructure area is the area of the development which is vegetated landscaped area, including:
    a. deep planting;
    b. green walls;
    c. green facades;
    d. extensive green roofs;
    e. intensive green roofs;
    f. planting at podium;
    g. other planting areas, including containerised planting;
    h. turf, where located in communal open space and where it can be access for maintenance purposes.
2. Green infrastructure areas do not include:
    a. hard landscaping; or
    b. areas within private open space that are equal to or less than the minimum private open space requirements in the Multiple dwelling code; or;
    c. areas to be dedicated for public land.

Schedule 6 Planning scheme policies \ SC6.31 Transport, access, parking and servicing planning scheme policy

Reason for change: Change to provide additional guidance and requirements to support provision of active transport infrastructure and green mobility.

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1 Introduction
- 1.1 Relationship to planning scheme
- 1.2 Relationship to planning scheme policies and other documents
- 1.3 Terminology

2 Transport impact assessment
- 2.1 Guideline for a transport impact assessment report
- 2.2 Purpose and content of transport impact assessment report

3 Design service vehicle standards
- 3.1 Design service vehicle selection
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  - 3.2.1 Occasional access for service vehicle – Table 1 Column 2
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7.8.1 Widths of standard parking spaces
7.8.2 Standard length of parking spaces
7.8.3 Fully enclosed garages
7.8.4 Clearance around parking spaces
7.9 Standard provisions for vehicle occupants with a disability
7.10 Standard car park layouts
8 Standard design vehicles and vehicle turning templates
8.1 Design vehicles
8.1.1 Cars
8.1.2 Service vehicles
8.2 Standard vehicle turning templates
8.2.1 Cars
8.2.2 Service vehicles
9 Heavy vehicle standards
10 Pedestrian facilities
11 Cyclist facilities
12 Sustainable mobility

12 Sustainable mobility

12 Sustainable mobility

1. Sustainable mobility refers to transport and travel practices that minimise environmental, social and economic impacts. Sustainable mobility can address transport issues such as traffic congestion, pollution and energy consumption, and lead to a more efficient, effective and sustainable transport network. Sustainable mobility:
    a. reduces the need for private motor vehicle ownership;
    b. promotes low emission transport options such as public transport, cycling and walking;
    c. improves the quality and accessibility of information about alternative travel options;
    d. enhances the health and well-being of residents and the community.
2. A sustainable travel plan is implemented to encourage and support building occupants and visitors to choose sustainable travel options including active travel, car share and/or public transport for more of their daily trips.
3. This section provides guidance about satisfying an assessment benchmark which identifies a requirement for a sustainable travel plan.

12.1 Guideline for a sustainable travel plan

12.1 Guideline for a sustainable travel plan

The requirements and content of a sustainable travel plan are outlined below.

12.1.1 Preparation

12.1.1 Preparation

A sustainable travel plan is to be prepared to a standard that will achieve the intended purpose of the sustainable travel plan.

12.1.2 Purpose

12.1.2 Purpose

1. The purpose of the sustainable travel plan is to:
    a. describe the site-specific measures that a development will implement on an ongoing basis to promote a high proportion of trips being made by sustainable modes of travel, reducing the need for and environmental impact of private motor vehicles;
    b. encourage and support residents, tenants, visitors and other occupants of the development to travel to and from the development by walking, cycling, public transport, car sharing and other sustainable mobility options.
2. The purpose of the sustainable travel plan is achieved by:
    a. innovative building design;
    b. carefully considered integration with and impacts to the transport network, streetscapes and street interfaces;

c. a range of actions, promotional campaigns and incentives.

12.1.3 Content

12.1.3 Content

At a minimum a sustainable travel plan includes:

a. a statement describing the scope and aims of the plan;
b. a statement describing the conditions and context for the sustainable travel plan, including:
    i. site location and land use;
    ii. a summary of existing options for sustainable modes of transport;
    iii. a summary of proposed building occupants and their expected travel habits;
c. a statement describing targets that are achievable, measurable and stretching. It is recommended that the targets are expressed as a percentage of building occupants (staff and residents) trips undertaken by private motor vehicle;
d. a statement describing the actions and initiatives that will be implemented to achieve the targets (refer to section 12.1.4), including an action to communicate information to building occupants (refer to section 12.1.5);
e. a statement describing the monitoring and reporting process (refer to section 12.1.6);
f. a statement which indicates the entity responsible for implementing the sustainable travel plan (refer to section 12.1.7).

12.1.4 Actions and initiatives

12.1.4 Actions and initiatives

A sustainable travel plan is to implement a range of actions and initiatives to deliver a holistic and integrated response that achieves reduced reliance on private motor vehicle use, promotes the take-up of public and active transport options and increased use of supporting infrastructure, and considers emerging technologies. The sustainable travel plan is to specify the entity responsible for implementing each action and initiative and the timeframe that they are to be implemented by.

12.1.5 Information for building occupants

12.1.5 Information for building occupants

1. A sustainable travel plan is to include an action about communicating information to building occupants. For example, new resident and tenant information packages and options for digital availability such as QR codes, on an ongoing basis.
2. The information includes, but is not limited to:
    a. the sustainable travel plan, actions and initiatives;
    b. access to local services and facilities, in particular:
        i. public and active travel options;
        ii. public and active transport route options to key destinations including maps.

12.1.6 Monitor and review

12.1.6 Monitor and review

A sustainable travel plan is to be monitored, reviewed and updated in order to continue to encourage behavioural shift towards sustainable transport for the life of the development. The sustainable travel plan is to be reviewed, and revised as required, annually at a minimum.

Editor's note—To effectively evaluate the impact of the sustainable travel plan, a travel survey should be conducted after the use commences. This survey will establish a baseline against which future reviews can be compared. Best practice sustainable travel plans evolve over time, adapting to new trends and availability of data.

12.1.7 Responsibility for implementation

12.1.7 Responsibility for implementation

A sustainable travel plan is to specify an entity (such as role, position or body) that will be responsible for the implementation, monitoring and updating functions of the plan. In the case that responsibility for implementation, monitoring and updating the plan is transferred to another entity the plan should clearly specify who the responsible entity is shifting from and to.

Appendix 2 Table of amendments

Table AP2.1—Table of amendments

Reason for change: Reflects details of this package of planning scheme policy amendments to the planning scheme.

XX Month Year (adoption) and XX Month Year (effective)	vXX.00/XXXX	Planning scheme policy amendment	Amendment to planning scheme policy (Chapter 3, Part 1 of *MGR*). Refer to Amendment vXX.00/XXXX for further detail.

Schedule 1 – Amendments to Brisbane standard drawing to revise drawings

Brisbane standard drawings (BSD) number	Title	Status	Description of change
2000 Series – Road corridor			
BSD-2022	Vehicle crossing (driveway) — Single dwelling (>10m street frontage) – Sheet 1 of 2	Revision	Add additional guidance for buttress trees and an additional sheet to provide detail on narrow and shared crossovers.
	Vehicle crossing (driveway) – Single dwelling – Narrow and shared driveways – Sheet 2 of 2	Revision	Add additional guidance for buttress trees and an additional sheet to provide detail on narrow and shared crossovers.