

Bushfire Hazard Assessment

Leppington Civic Centre / Leppington Site A

173-183 Rickard Road, Leppington

SSD-99319962

Prepared for
Leppington (1) 88 Development Pty Ltd

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Document Tracking

Project Name:	173 & 183 Rickard Road, Leppington
Prepared by:	Corey Shackleton
Client Details:	Kim Tan Development Manager Aland PO Box 4081, Strathfield South, NSW 2136 Email: kim@aland.com.au
Project Address	173-183 Rickard Road, Leppington
Project Number	J3552

Name	Position	Contact No	Email
Corey Shackleton	Principal Bushfire & Resilience	0418 412 118	corey.shackleton@blackash.com.au

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Corey Shackleton | Principal Bushfire & Resilience
BlackAsh Bush fire Consulting
 B.Sc., Grad. Dip. (Design for Bushfire Prone Areas)
 Fire Protection Association of Australia BPAD Level 3 – 34603



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Executive Summary

This Bushfire Assessment has been prepared by Blackash Bushfire Consulting on behalf of Leppington (1) 88 Development Pty Ltd to accompany the State Significant Development Application (SSDA) for the Leppington Civic Centre / Leppington Site A mixed-use development at 173-183 Rickard Road, Leppington. The site is legally described as Lot 1 and Lot 2 DP812366.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for SSD-99319962. The SEARs require a bush fire assessment where development is on mapped bush fire prone land, or where a bush/grass fire threat is identified on or adjoining the site. This assessment details the proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection 2019*.

The site is only partly mapped as bush fire prone land. The mapped affectation is limited to the southeastern portion of the site, associated with the Category 2 vegetation and buffer from the isolated woodland hazard to the southeast. The majority of the proposed buildings, including the proposed hotel / tourist accommodation component and centre-based childcare facility, are not located on mapped bush fire prone land.

The key bushfire hazard remains the small, isolated pocket of Coastal Valley Grassy Woodland / Cumberland Plain Woodland to the southeast of the site. The previous final Bushfire Hazard Assessment and additional information response to the NSW Rural Fire Service remain relevant as background to the assessment and demonstrate that the southeast woodland hazard can be managed through a combination of separation, managed land, construction response and, where necessary, radiant heat modelling. Under the current design, the residential apartment components can achieve the required 12 metre APZ, while the hotel / tourist accommodation component is further separated from the hazard by the current perimeter road layout and intervening managed land.

The land to the south and west is not mapped as Category 3 vegetation and is properly characterised as low threat in the context of PBP 2019. Notwithstanding that position, temporary southern and western interface protection measures have been retained to address residual concerns associated with the current undeveloped condition of adjoining land. This report concludes that the proposed development is supportable from a bushfire perspective, subject to implementation of the following mitigation measures:

- maintenance of the required APZs and managed separation to the southeast woodland hazard;
- application of BAL construction requirements to buildings or parts of buildings located on mapped bush fire prone land and affected by Figure 7;
- retention of temporary southern and western interface construction measures only where building elements are within 10 metres of those boundaries;

- provision of compliant water supply, utilities, access, landscaping and emergency management arrangements.

I, Corey Shackleton, confirm this Bushfire Assessment Report addresses the requirements of SEARs Item 20 – Bush Fire Risk and relevant State and local legislation, policies and guidelines including *Planning for Bush Fire Protection 2019*, the *Environmental Planning and Assessment Act 1979* and the *Rural Fires Act 1997*. I further confirm that none of the information contained in this Bushfire Assessment Report is false or misleading.



Corey Shackleton | Principal Bushfire & Resilience
Blackash Bush fire Consulting
B.Sc., Grad. Dip. (Design for Bushfire Prone Areas)
Fire Protection Association of Australia BPAD Level 3 – 34603



1. Introduction

Blackash Bushfire Consulting has been engaged by Leppington (1) 88 Development Pty Ltd to assess the proposed Leppington Civic Centre / Leppington Site A development at 173-183 Rickard Road, Leppington, legally known as Lot 1 and Lot 2 DP812366 (see Figure 1).

1.1. Site Context

The site is in the suburb of Leppington within the Camden Local Government Area.

The site generally slopes from east to west away Rickard Road. The site is serviced by existing water, sewer, electricity, and telecommunication services, and has vehicular and pedestrian access from Rickard Road. The site is largely cleared; however, contains several mature native trees.

The site contains an existing dwelling with associated sheds, car parking, and landscaped areas.

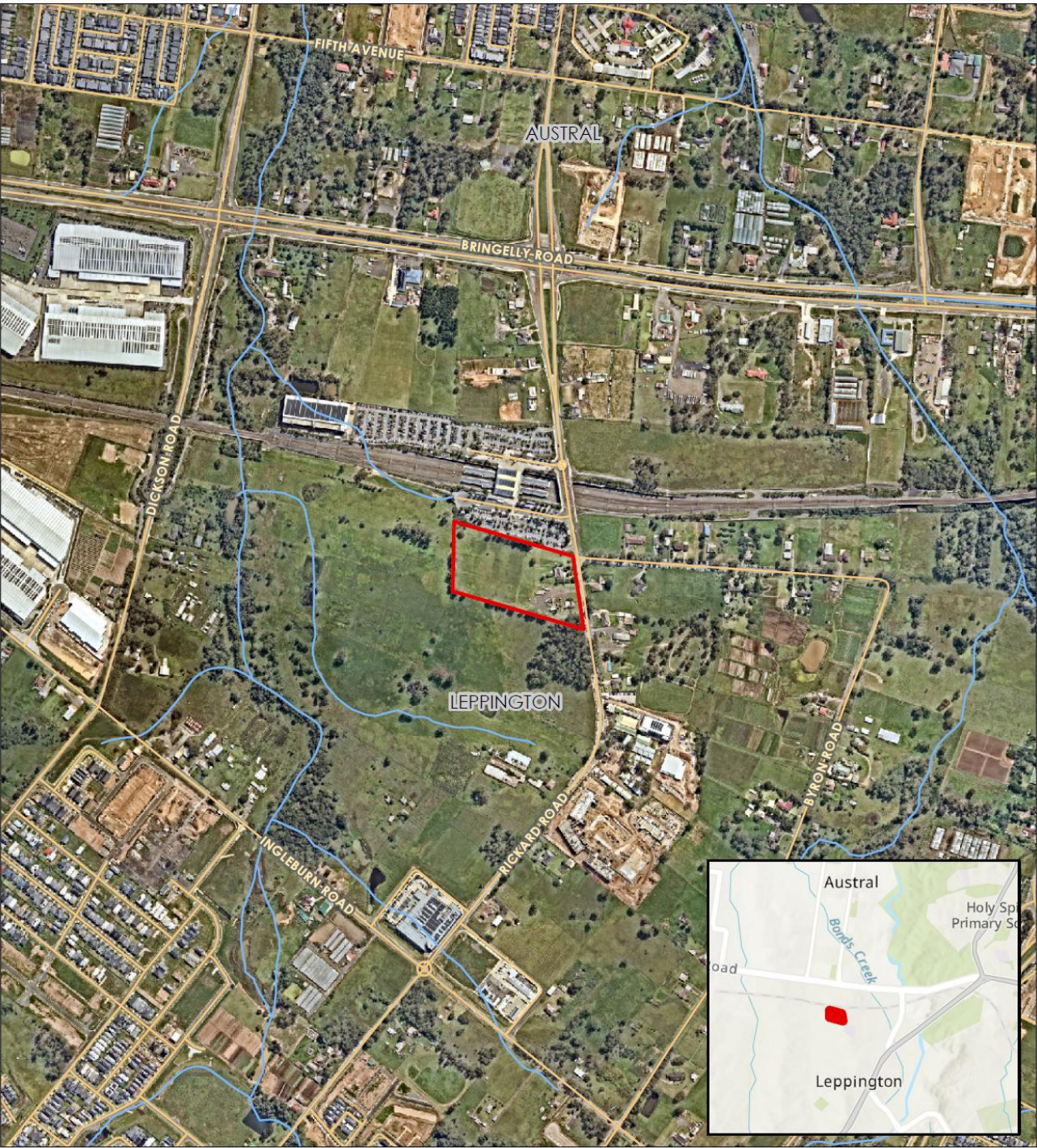
1.2. Proposed Development

The current application relates to a State Significant Development Application for the Leppington Civic Centre / Leppington Site A mixed-use development. The SSDA seeks detailed consent for demolition, site preparation, subdivision, civil infrastructure works, new roads, open space and construction of a mixed-use precinct comprising residential, hotel, commercial, retail and public domain uses.

Based on the current SSDA consultant brief and proposed land-use information, the development includes:

- eight residential buildings accommodating approximately 1,493 apartments, comprising build-to-sell, build-to-rent and affordable housing;
- a 156-key hotel with ancillary function spaces;
- approximately 40,500 square metres of non-residential gross floor area;
- centre-based childcare facility accommodating approximately 70 children;
- commercial and retail uses, including supermarket, discount department store, retail liquor store, food and beverage premises, pub, gym, indoor swim school, tyre and auto use and carwash;
- lower ground and basement-level loading, servicing and parking;
- new internal roads, road reserves and public domain works; and
- approximately 6,500 square metres of public open space, together with communal open space, street landscaping and tree planting.

The proposed development is supported by a concurrent rezoning application through the Housing Delivery Authority planning pathway. The bushfire assessment has been prepared having regard to the current SSDA scheme, the proposed land-use mix and the current architectural / masterplan information.



Legend

- Roads
- Watercourse
- Subject Land

N

DKGIS

Date: 24/04/2026
Prepared By: FMC

0 100 200
Meters

Coordinate System:
GDA2020 MGA Zone 56

Base Data: NSW Spatial Services 24/04/2026; Imagery: ©Nearmap 16/03/2026

Figure 1: Site Location

2. Land Use Classification for Bushfire Assessment

The proposed development includes a range of land uses which have different bushfire assessment considerations under *Planning for Bush Fire Protection 2019*.

The hotel / tourist accommodation component is treated as Special Fire Protection Purpose development for the purposes of applying the relevant bushfire protection outcomes, given the potential for occupants to be unfamiliar with the locality, emergency procedures and evacuation routes.

The proposed centre-based childcare facility is a Class 9b / SFPP-type use for bushfire assessment purposes. However, based on the current layout, the childcare facility is not located on the mapped bush fire prone portion of the site and is not affected by the BAL contours shown in Figure 7. Accordingly, no specific SFPP bushfire construction response is required for the childcare facility under the current layout. This position must be reviewed if the final tenancy location changes.

The residential apartment components, including build-to-sell, build-to-rent and affordable housing, are not SFPP development. These components are assessed as residential accommodation having regard to the relevant residential bushfire protection outcomes in PBP 2019, including APZs, BAL construction response, access, services and ongoing management.

The retail, commercial, pub, function, supermarket, discount department store, liquor store, food and beverage, gym, indoor swim school, tyre and auto, carwash and associated public domain uses are considered having regard to the "other development" provisions of PBP 2019. Where these uses involve larger occupant numbers or public assembly-style functions, the assessment has considered evacuation complexity and the need for emergency management procedures.

The assessment therefore does not treat the entire mixed-use development as SFPP or as bush fire affected. It applies a proportionate approach that recognises the limited extent of bush fire prone land mapping, the southeast woodland hazard, the BAL requirements shown in Figure 7, and the temporary southern / western interface measures retained in this report.

3. Legislative Framework

The proposal is being progressed as a State Significant Development (SSD-99319962). Consequently, the integrated development referral provisions under Division 4.8 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) do not apply. Specifically, the requirement to obtain a separate Bush Fire Safety Authority from the NSW Rural Fire Service under Section 100B of the *Rural Fires Act 1997* is exempt (switched off) pursuant to Section 4.41 of the EP&A Act.

Key bush fire risks are instead regulated holistically through the Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning, Housing and Infrastructure. The SEARs require a comprehensive bush fire assessment detailing proposed protection measures and demonstrating consistency with *Planning for Bush Fire Protection 2019* (PBP 2019) where development occurs on mapped bush fire prone land or where a threat is identified on or adjoining the site.

The site contains mapped bush fire prone land due to Category 2 vegetation and its associated buffer to the southeast. Accordingly, this assessment has been prepared in accordance with the SEARs, having regard to *PBP 2019*, the *Rural Fires Act 1997*, and the EP&A Act.

While the proposed hotel/tourist accommodation and centre-based childcare facility constitute Special Fire Protection Purpose (SFPP) uses by character, they are physically located outside the mapped bush fire prone land and sit entirely clear of the Bushfire Attack Level (BAL) contours (Figure 7). The residential apartments are assessed under residential accommodation frameworks, while the retail, commercial, recreation, pub/function, and non-residential components are assessed against the "other development" provisions of PBP 2019, prioritizing their specific occupancy and evacuation characteristics.

3.1. Bushfire Prone Land Mapping

The site is identified as 'bush fire prone land' (see Figure 3) for the purposes of Section 10.3 of the EPA Act and the legislative requirements for building on bush fire prone lands are applicable.

Bush fire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bush Fire prone land (BFPL) is land that has been identified by the council, which can support a bushfire or is subject to bushfire attack. Bush fire prone land maps are prepared by the local council and certified by the Commissioner of the NSW RFS.

The site is mapped as bushfire prone. The bushland to the southeast is mapped as Category 2 and the associated buffer extends into the southeastern portion of the site. See Figure 3.

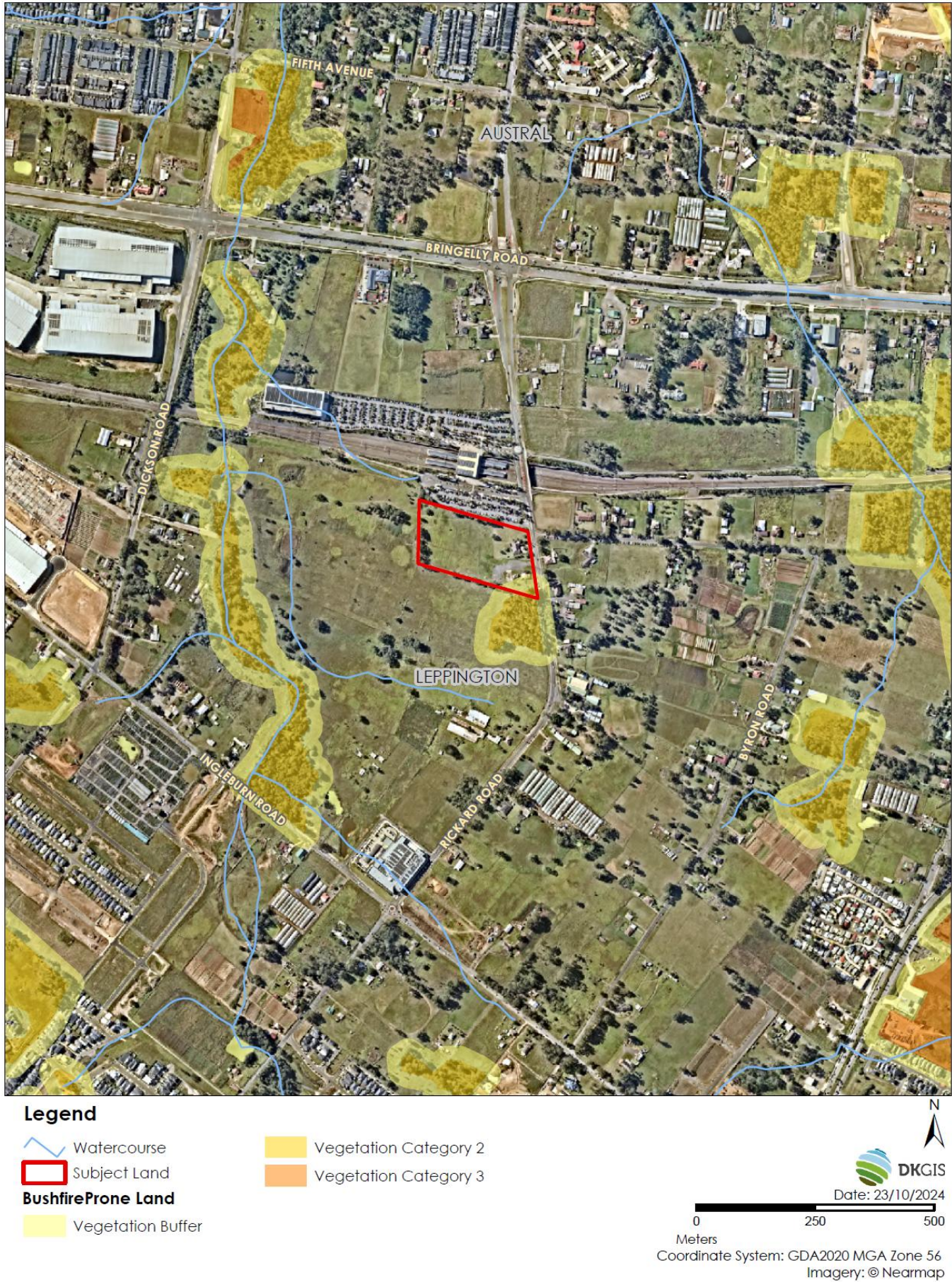


Figure 3: Bush Fire Prone Land Map

3.2. Extent of Bush Fire Prone Land Affection

The site is only partly mapped as bush fire prone land. The mapped affection is limited to the southeastern portion of the site, associated with the Category 2 vegetation and buffer extending from the isolated woodland hazard to the southeast.

The majority of the proposed development footprint, including the proposed hotel / tourist accommodation component, centre-based childcare facility and most residential, retail and commercial buildings, is not located on mapped bush fire prone land.

This is an important distinction for the assessment. The SSDA is required to address bush fire risk because part of the site is mapped as bush fire prone land and a bushfire hazard is present to the southeast. However, the bushfire protection measures recommended in this report are targeted to the parts of the development that are actually exposed to that hazard, as shown in Figure 6 and Figure 7.

Where buildings or parts of buildings are outside the mapped bush fire prone land affection, outside the BAL-affected area shown in Figure 7, and outside the temporary southern / western interface zone, no specific bushfire construction response is required beyond the general site-wide management, access, services and emergency management measures identified in this report.

3.3.Planning for Bushfire Protection 2019

NSW RFS PBP 2019 is the formal NSW guideline which provides development standards for planning, designing and building on bushfire prone lands in NSW. PBP 2019 details specific provisions for Special Fire Protection Purpose (SFPP) development considering site specific risk, occupant vulnerability and the appropriate suite of bushfire protection measures (BPMs).

PBP 2019 sets out an overall framework consisting of an aim and objectives, specific objectives for defined development types, types of BPMs which may be employed in a development or risk assessment, and performance criteria for each BPM.

3.3.1. General Objectives of Planning for Bushfire Protection

All development on BFPL must satisfy the aim and objectives of *PBP 2019*. The aim of *PBP 2019* is to provide for the protection of human life and minimise impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment. The objectives are to:

- I. afford buildings and their occupants protection from exposure to a bush fire;*
- II. provide for a defensible space to be located around buildings;*
- III. provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*

- IV. *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- V. *provide for ongoing management and maintenance of BPMs; and*
- VI. *ensure that utility services are adequate to meet the needs of firefighters.*

3.3.2. Specific Objectives for SFPP Development

The hotel / tourist accommodation component and proposed centre-based childcare facility are SFPP-type uses by land-use character. However, based on the current layout, these uses are not located on mapped bush fire prone land and are not shown as being affected by the BAL contours in Figure 7. No specific SFPP construction response is therefore required for those uses under the current layout, provided their final tenancy locations remain outside the mapped bush fire prone land affectation, the Figure 7 BAL-affected area and the temporary southern / western interface zone. Planning for Bushfire Protection states that:

"An SFPP development is one which is occupied by people who are identified as at-risk members of the community. In a bushfire event, these occupants may be more susceptible to the impacts of radiant heat and other bushfire effects. Evacuating at-risk members of the community is more challenging because they may be physically or psychologically less able to relocate themselves or are unfamiliar with their surroundings. Examples of SFPP developments are schools, hospitals, nursing homes and tourist accommodation."

The specific objectives within PBP 2019 for SFPP developments are to:

- I. *minimise levels of radiant heat, localised smoke and ember attack through increased APZ, building design and siting;*
- II. *provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;*
- III. *ensure the capacity of existing infrastructure (such as roads and utilities) can accommodate the increase in demand during emergencies as a result of the development; and*
- IV. *ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.*

3.3.3. Other Development

The residential apartment components are not SFPP development but are residential accommodation components that must be considered having regard to the relevant residential bushfire protection outcomes in PBP 2019, including appropriate separation, BAL construction response, access, services and ongoing management.

The retail, commercial, podium and public assembly components are considered having regard to the "other development" provisions of PBP 2019. Where those uses involve larger occupant numbers or public assembly floor space greater than 500 m², the assessment also considers evacuation complexity and adopts a conservative risk-based approach.

Given the low bushfire risk context, the strategic and emerging urban structure of the Leppington Town Centre, and the imminent development of surrounding land, it is not considered appropriate or reasonable to treat the entire mixed-use development as SFPP for assessment purposes. The assessment instead applies a proportionate and risk-based approach, while retaining conservative protection measures where they have been identified through previous consultation with the NSW RFS.

3.3.4. Specification 43 and Class 9 / SFPP Uses

NCC 2022 Specification 43 contains bushfire protection provisions for certain Class 9 buildings accommodating vulnerable occupants, including early childhood centres, health-care buildings, schools and residential care buildings. These provisions are relevant where the building is located in a designated bushfire prone area and the relevant NCC / PBP triggers apply.

The proposed centre-based childcare facility is a use that may ordinarily fall within the Class 9b / SFPP-type bushfire framework. However, based on the current site layout, the proposed childcare facility is not located on the mapped bush fire prone portion of the site and is not shown as being affected by the BAL contours in Figure 7. On that basis, Specification 43 is not triggered for the childcare facility by the current bushfire mapping or BAL assessment.

If the final architectural layout relocates the childcare facility into the mapped bush fire prone portion of the site, into the BAL-affected area shown in Figure 7, or into the temporary southern / western interface zone, the bushfire assessment must be reviewed to confirm whether any additional NCC Specification 43, PBP or temporary construction measures are required.

The same principle applies to other sensitive or high-occupancy uses. The bushfire construction response is to be applied where the building or relevant part of the building is affected by the mapped bushfire hazard, Figure 7 BAL requirements, or the temporary southern / western interface measures.

3.3.5. SEARs and Previous NSW RFS Consultation

The current report responds to the SEARs requirement for a bush fire assessment. It also has regard to the previous final Bushfire Hazard Assessment for the site, dated 22 July 2025, and the additional information response provided to the NSW RFS on 26 May 2025.

The previous RFS additional information request raised three key matters: additional slope transects within the remnant woodland vegetation to the south of the proposed hotel; further confirmation of the grassland management and hazard status to the south and west; and updated modelling to confirm radiant heat exposure to public assembly buildings greater than 500 m².

The additional response confirmed that the steepest additional slope transect was to the southwest, with a shorter fire run of 97 metres, and that the proposed 24 metre APZ produced a modelled radiant heat exposure of 8.96 kW/m². This was less than the original worst-case scenario and supported the continued application of the 24 metre APZ to the southeast.

The additional response also confirmed that the land to the south and west was not mapped as Category 3 vegetation on the recent certified Bush Fire Prone Land Maps and did not correspond to a Keith (2004) grassland vegetation formation. Notwithstanding that low-risk context, the final 2025 report adopted temporary protection measures to address residual NSW RFS concerns about the current undeveloped condition of land to the south and west.

4. Bushfire Threat Assessment

4.1. Methodology

PBP 2019 provides a methodology to determine the bushfire threat and commensurate size of any asset protection zone (APZ) that may be required to offset possible bushfire attack. These elements include the hazardous vegetation that may affect the site and the effective slope within that vegetation.

The assessment applies the relevant performance expectations of PBP 2019 having regard to the limited extent of bush fire prone land affectation, the southeast woodland hazard, the current building layout, the proposed perimeter road network and the land-use characteristics of the development.

This assessment has been prepared to address the bush fire risk requirements of the SEARs issued for SSD-99319962 and has regard to *Planning for Bush Fire Protection 2019*, the *Rural Fires Act 1997*, the *Environmental Planning and Assessment Act 1979*, the applicable bush fire prone land mapping and the current architectural information. Although a Bush Fire Safety Authority under section 100B of the *Rural Fires Act 1997* is not required for SSD, the SFPP and other development provisions of *Planning for Bush Fire Protection 2019* provide the appropriate technical framework for assessing bushfire risk and bushfire protection measures. This assessment is based on the following resources:

- Planning for Bush Fire Protection (NSW RFS, 2019);
- Camden Council Bushfire Prone Land Map;
- Aerial mapping;
- Secretary's Environmental Assessment Requirements for SSD-99319962;
- DKO Architecture architectural package for Leppington Site A, Project No. 13053;
- the previous final Bushfire Hazard Assessment for the site dated 22 July 2025;
- the previous Additional Information response to NSW RFS dated 26 May 2025; and
- Detailed GIS and Site analysis.

The methodology used in this assessment is in accordance with PBP 2019 and is outlined in the following sections.

4.2. Bushfire Hazard

An assessment of the Bushfire Prone Land is necessary to determine the application of bushfire protection measures such as APZ locations and future building construction levels. The vegetation formations (bushfire fuels) and the topography (effective slope) combine to create the bushfire threat that may affect bushfire behaviour at the site, and which determine the planning and building response of PBP 2019.

4.2.1. Fire Weather

The fire weather is dictated by PBP 2019 and assumes a credible worst-case scenario and an absence of any other mitigating factors relating to aspect or prevailing winds. The site has a Fire Danger Index (FDI) of 100 as per PBP 2019.

4.2.2. Vegetation Assessment

The Rural Fires Regulation requires a classification of the vegetation on and surrounding the property out to 140 metres from the boundaries of the property in accordance with the system for classification of vegetation contained in PBP 2019.

Predominant vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP 2019.

Vegetation to the southeast of the site is a small, isolated pocket of Coastal Valley Grassy Woodland / Cumberland Plain Woodland. Land to the north and east is managed or urbanised land and does not present a material bushfire hazard.

The grassed land to the south and west of the site was examined in the previous final report and additional RFS response. That assessment concluded that the land is not identified as Keith (2004) grassland vegetation, has not been mapped as Category 3 vegetation on the recent certified Bush Fire Prone Land Maps, and does not present as a bushfire hazard requiring full grassland APZ treatment under PBP 2019.

The grassed areas to the south and west comprise introduced pasture / kikuyu-type grasses associated with the current undeveloped condition of adjoining land. This land is regarded as low threat in the context of PBP 2019 due to its limited fuel load, low flammability and the strategic urban renewal context of the Leppington Town Centre.

Notwithstanding this conclusion, conservative temporary measures have been retained in this report to address residual concerns raised by the NSW RFS in relation to the current undeveloped condition of the adjoining land to the south and west. These measures are intended to be temporary and should be reviewed once the adjoining land is developed, managed or the temporary grass condition is otherwise removed. See Figure 4.

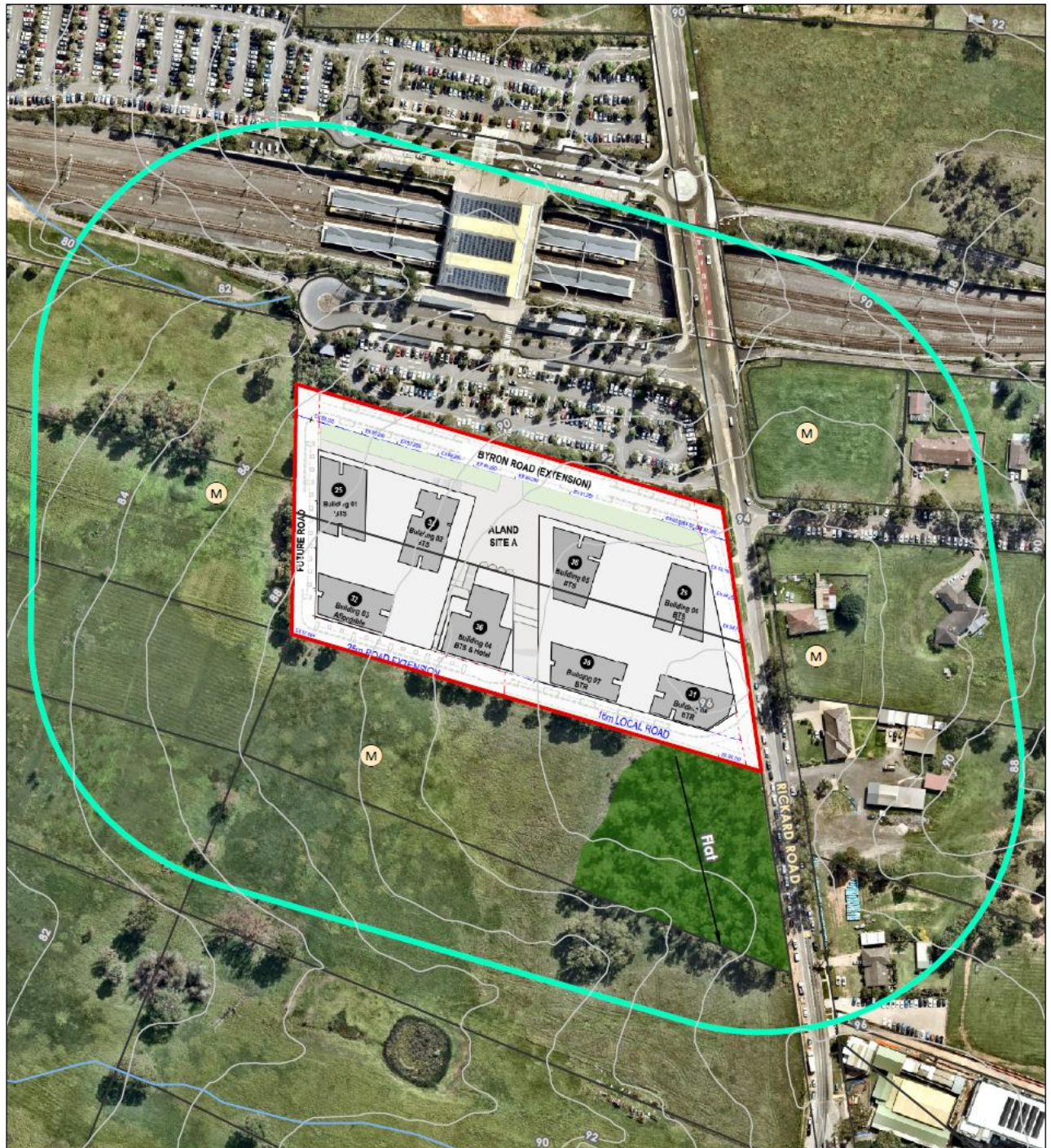
4.2.3. Slopes Influencing Bushfire Behaviour

The Rural Fires Regulation requires an assessment of the slope of the land on and surrounding the property, to 100 metres from the property boundaries or the proposed development footprint.

The effective slope influencing fire behaviour approaching the site has been assessed in accordance with the methodology specified within PBP 2019. The effective slope is the slope of

the ground under the hazard (vegetation). It is not the slope between the vegetation and the building (slope located between the asset and vegetation is the site slope).

The site and surrounds are all relatively flat, with effective slopes within the isolated forest to the southeast being level. See Figure 4.



Legend

- Watercourse
- Contour - 2m
- Subject Land
- Cadastre
- Vegetation Assessment Buffer
- Managed Land
- Vegetation Class**
- Coastal Valley Grassy Woodlands



Date: 26/05/2026

Prepared By: FMC

0 25 50

Meters

Coordinate System:
GDA2020 MGA Zone 56

Base Data: NSW Spatial Services 24/04/2026; Vegetation: SVTM Extant edited based on imagery; Contours: NSW Elevation and Depth Theme layers 24/04/2026; Imagery: ©Nearmap 16/03/2026

Figure 4: Vegetation and slope map.

5. Bushfire Protection Measures

PBP 2019 recognises that bushfire protection measures work in combination and should respond to the nature of the development, the hazard, site context and occupant profile. For this mixed-use development, the bushfire protection measures have been applied having regard to the hotel / tourist accommodation component, residential apartment components, retail/commercial uses and public assembly / high-occupancy areas.

The BPMs work in combination to provide a suite of measures that meet the aim and objective and Section 6 of *PBP 2019*. The BPMs are shown in Figure 5.

Appropriate combinations depend upon geographic location and site circumstances.

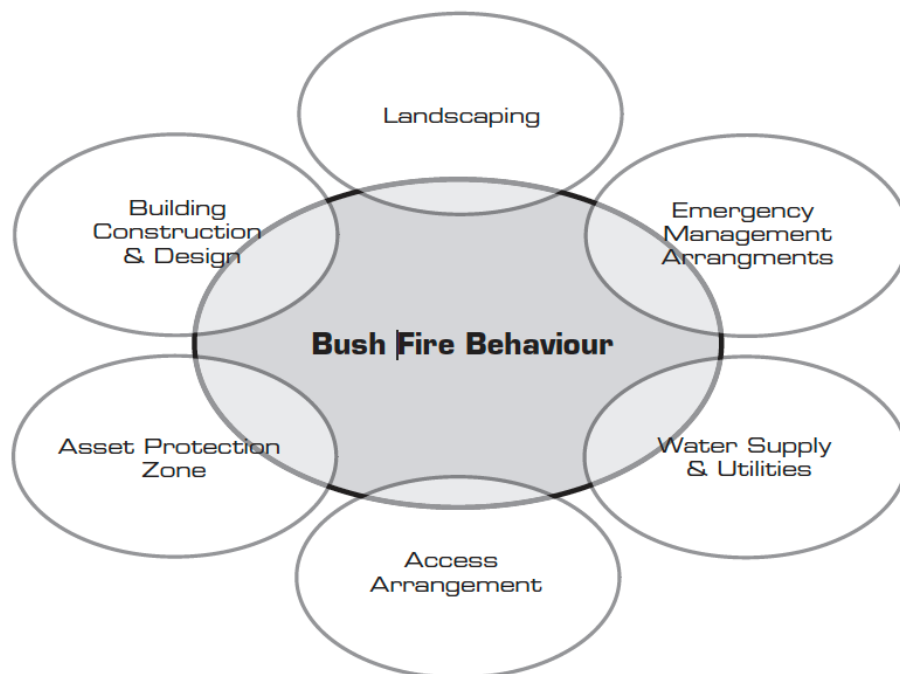


Figure 5: Bushfire Protection Measures in Combination (source *PBP 2019* p. 26).

5.1. Asset Protection Zones

The proposed development is located in a low bushfire risk area. The site is generally surrounded by managed land, future urban land or low threat vegetation. The enduring mapped bushfire hazard relevant to the site is the small, isolated pocket of Coastal Valley Grassy Woodland / Cumberland Plain Woodland to the southeast.

For the residential apartment components, the required APZ to the southeast woodland hazard is 12 metres. This separation can be achieved within the current layout through the proposed perimeter road network, managed site areas and building setbacks. As the 12 metre APZ can be achieved, no additional radiant heat modelling is required for the residential apartment components.

The hotel / tourist accommodation component is an SFPP-type use by land-use character; however, under the current layout it is not located on mapped bush fire prone land and is separated from the southeast woodland hazard by the perimeter road network and intervening managed land. The current scheme differs from the previous 2025 DA layout, with the hotel located further from the southeast woodland hazard and with the proposed perimeter road network providing additional managed separation. The relevant separation to the hotel is therefore achieved through the current site layout, including the perimeter roads and intervening managed land.

The centre-based childcare facility is a Class 9b / SFPP-type use. However, based on the current layout, it is not located on the mapped bush fire prone portion of the site and is not affected by the BAL contours shown in Figure 7. Accordingly, no specific APZ or BAL construction response is required for the childcare facility under the current layout. If the final tenancy location changes so that the childcare facility is located within mapped bush fire prone land, within the Figure 7 BAL-affected area, or within the temporary southern / western interface zone, the bushfire assessment must be reviewed.

Previous radiant heat modelling and the additional information response provided to the NSW RFS remain relevant as background to the assessment, particularly in demonstrating that the southeast woodland hazard can be addressed through a combination of separation, managed land and construction response. However, the current design should not be read as requiring a blanket 24 metre APZ to all components of the development.

The land to the south and west is not treated as a mapped grassland hazard requiring a full grassland APZ. The current layout provides a perimeter road and managed separation to the southern and western boundaries, with building elements generally located more than 10 metres from those interfaces. The 1.8 metre high Colorbond fence / radiant heat shield previously identified for the earlier design is therefore no longer required, provided the perimeter road and minimum 10 metre managed separation are retained.

Table 1 is a summary of the APZ requirements for the proposed development.

Table 1: APZ Assessment

Direction	Slope	Vegetation	Minimum APZ	APZ provided
North	NA	Managed Land	NA	NA
East	NA	Managed Land	NA	NA
Southeast	Level	Coastal Valley Grassy Woodlands	12 metres	>12 metres
Southwest	NA	Managed Land	NA	Temporary measures
West	NA	Managed Land	NA	Temporary measures



Figure 6: Minimum required Southeast APZ.

5.2. Bushfire Attack Levels

The Bushfire Attack Level (BAL) is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact. BAL ratings form the basis for establishing construction requirements to improve the protection of buildings from potential bushfire attack, as defined in AS 3959-2018.

Figure 7 identifies the modelled BAL exposure arising from the southeast woodland hazard. For the purposes of this assessment, BAL construction requirements are to be applied to buildings or parts of buildings located on mapped bush fire prone land and affected by the BAL contours shown in Figure 7.

Buildings and tenancies outside the mapped bush fire prone land affectation, including the proposed childcare facility and hotel / tourist accommodation component under the current layout, do not require a bushfire construction response for exposure from the southeast woodland hazard.

The BAL requirements shown in Figure 7 relate to exposure from the southeast woodland hazard only. They do not remove the separate temporary southern and western interface measures retained in this report to address the current undeveloped condition of adjoining land to the south and west.

Previous conservative modelling of the southern and western interfaces indicated that a 10 metre separation to the temporary grass condition would result in radiant heat levels below 29 kW/m². The current design provides a perimeter road and managed separation to those boundaries, with building elements generally located more than 10 metres from those interfaces. On that basis, the 1.8 metre high Colorbond fence / radiant heat shield previously identified for the earlier design is no longer required.

The following temporary construction measures are retained only where relevant and only until adjoining land to the south and west is developed, managed or the temporary grass condition is removed:

- southern and western elevations of relevant building / podium elements within 10 metres of the southern or western boundaries are to be constructed to BAL-29, unless equivalent performance is demonstrated; and
- any part of the Upper Ground and Level 1 building / podium elements within 10 metres of the southern or western boundaries is to be constructed with an FRL of at least 60/60/60 or otherwise protected by a BAL-FZ rated bushfire shutter / shield.



Legend

Watercourse

Contour - 2m

Subject Land

Cadastre

Vegetation Class

Coastal Valley Grassy Woodlands

Bushfire Attack Level (BAL)

BAL - Flame Zone

BAL - 40

BAL - 29

BAL - 19

BAL - 12.5



DKGIS

Date: 26/05/2026

Prepared By: FMC

0 10 20
Meters

Coordinate System:
GDA2020 MGA Zone 56

Imagery: ©Nearmap 16/03/2026

Base Data: NSW Spatial Services 24/04/2026; Vegetation: SVTM Extant edited based on imagery; Contours: NSW Elevation and Depth Theme layers 24/04/2026;

Figure 7: Bushfire Attack Levels.

5.3. Water Supplies

The site is serviced by the existing reticulated water supply, with hydrants located at regular intervals to comply with AS2419.1 and PBP 2019. The proposed Town Centre will be connected to the reticulated town water main. This complies with PBP 2019.

5.4. Gas and electrical supplies

The site is connected to the local mains electrical supply and therefore complies with PBP 2019. Any gas services are to be installed and maintained in accordance with *Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'* (Standards Australia 2008). This complies with PBP 2019.

5.5. Access

The proposed development has direct frontage to Rickard Road in the east and includes new internal and perimeter road infrastructure, including the Byron Road extension, the 25 metre road extension and the 16 metre local road shown on the current architectural drawings. Basement car parking and loading/service areas are also proposed.

The road network and public domain design are to be coordinated through the civil, traffic and fire engineering documentation to ensure safe operational access for emergency services and safe egress for occupants. Access to the identified bushfire hazard is available from Rickard Road and the broader public road network.

Subject to final detailed design demonstrating compliance with the relevant access provisions of PBP 2019, this complies with the intent of PBP 2019.

5.6. Landscaping

The proposed development includes landscaped areas, public domain areas, open space, street tree planting and communal open space. These areas are acceptable from a bushfire perspective, provided they are designed and maintained so they do not create a continuous fuel path between the bushfire hazard and the proposed buildings.

Landscaping within land relied upon as an APZ or managed land is to be consistent with the intent of an Inner Protection Area under Planning for Bush Fire Protection 2019 and the NSW RFS Standards for Asset Protection Zones. This does not prevent public domain landscaping, deep soil planting, street trees or open space, provided the final planting design does not materially assist fire spread towards buildings.

5.7. Emergency Management Arrangements

Given the low bushfire risk context, the proposed setbacks, the urbanising character of the locality and the proposed internal road network, a standalone Bush Fire Emergency Management and Evacuation Plan is not considered necessary at the SSDA assessment stage.

However, prior to occupation of the hotel / tourist accommodation component, centre-based childcare facility and relevant retail, commercial, pub/function, recreation and public assembly components, emergency management and evacuation procedures should be prepared having regard to the final built form, occupant profile, access arrangements and site operations. These procedures should address bushfire response where relevant and be integrated with the broader emergency management framework for the development.

6. Assessment Against the Aim and Objective of PBP

All development in Bushfire Prone Areas needs to comply with the aim and objectives of PBP.

Table 3 shows the compliance with PBP.

Table 3: Compliance with Aim & Objectives of PBP.

Aim	Comment	Meets Criteria
The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.	Landscaping, defensible space, access and egress, emergency risk management and construction standards are in accordance with the requirements of PBP and the aims of PBP have been achieved.	
Objectives	Comment	Meets Criteria
Afford occupants of any building adequate protection from exposure to a bushfire.	The development provides opportunity for all occupants to be shielded from any external bushfire. Construction material will comply with the relevant AS3959 requirements.	
Provide for a defensible space to be located around buildings.	Defensible space is provided around all buildings.	
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent the likely fire spread to buildings.	All buildings are separated from the vegetated areas and provide APZs and commensurate construction in accordance with AS3959.	
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	The site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate. The development provides for the movement of heavy articulated trucks about the site.	
Provide for ongoing management and maintenance of bushfire protection measures.	The site will be managed in perpetuity including all APZ and landscaping in accordance with PBP 2019.	
Ensure that utility services are adequate to meet the needs of firefighters.	Utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).	

The suite of bushfire protection measures provided for the proposed development satisfies the relevant aim and objectives of PBP 2019 for the current mixed-use development.

7. Assessment Against SEARs & Agency Advice

This report has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning, Housing and Infrastructure for SSD-99319962 on 15 December 2025. The relevant bushfire requirement is Item 20 - Bush Fire Risk, which requires a bush fire assessment where land is mapped as bush fire prone or where a bush/grass fire threat is identified on or adjoining the site.

The Department's cover letter confirms that the industry-specific SEARs, together with the additional assessment requirements identified by the Department following agency consultation and the Planning Focus Meeting, form the collective SEARs for the project. This bushfire assessment responds to the bush fire risk requirement and, where relevant, has considered agency advice insofar as it relates to operational access, public domain coordination, utilities and the maintenance of bushfire protection measures. Broader transport, public open space, SARP alignment, servicing and cumulative impact matters are addressed by others as part of the EIS package.

No new SSDA-specific bushfire agency advice from the NSW Rural Fire Service was identified in the SEARs agency advice package. The bushfire assessment has therefore had regard to the previous NSW RFS consultation on the earlier DA scheme, including the RFS request for additional slope transects, confirmation of the south/west grassland hazard status and updated radiant heat modelling for public assembly buildings greater than 500m². Other agency advice, including TfNSW and Camden Council comments, is relevant to this report only to the extent that final civil, traffic and public domain design must maintain safe operational access and egress consistent with *Planning for Bush Fire Protection 2019*.

Table 4: Compliance with SEARs & Agency Advice.

General Requirements	Comment	Complies
SEARs Item 20 - Bush Fire Risk: If the development is on mapped bush fire prone land, or a bush/grass fire threat is identified on or adjoining the site, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with <i>Planning for Bush Fire Protection</i> .	The site is only partly mapped as bush fire prone land, with the mapped affectation limited to the southeastern portion of the site. This report assesses the bushfire risk associated with that mapped affectation and the southeast woodland hazard, and identifies targeted APZ, BAL, access, services, emergency management and temporary interface measures.	
Demonstrate compliance with <i>Planning for Bush Fire Protection 2019</i> .	The assessment considers the proposal against the aim and objectives of PBP 2019 and identifies the recommendations required to achieve an acceptable bushfire outcome. Refer Section 6 and Section 8.	
Detail the proposed bush fire protection measures.	The assessment identifies the required APZs / managed separation to the southeast woodland hazard, including the 12 metre APZ for residential components, perimeter road separation to the hotel / tourist accommodation component, BAL construction requirements shown in Figure 7, temporary southern and western interface measures, water supply, utilities, access and emergency management measures.	

Relevant agency advice and previous NSW RFS consultation.	No new SSDA-specific bushfire agency advice from the NSW RFS was identified in the agency advice package. The report has therefore had regard to the previous NSW RFS RFI and additional information response for DA/2024/615/1, including slope transects, grassland hazard status and radiant heat modelling for public assembly buildings greater than 500 m ² . Refer Section 3.3.5 and Sections 4 to 5.	
Other agency advice relevant to access / public domain coordination.	TfNSW and Camden Council advice principally relates to the transport network, Byron Road extension, commuter car park interface, public domain and cumulative impacts. These matters are outside the technical scope of this bushfire assessment except to the extent that final road geometry and access arrangements must support safe operational access and egress. Refer Section 5.5.	
Bush Fire Emergency Management and Evacuation Plan.	A standalone Bush Fire Emergency Management and Evacuation Plan is not required at this stage of the SSDA assessment. However, emergency management and evacuation procedures, including bushfire response measures where relevant, are recommended prior to occupation of the hotel, centre-based childcare facility and relevant retail, commercial, pub/function, recreation and public assembly components. Refer Section 5.7 and Recommendation 9.	

8. Recommendations

The following recommendations are made to demonstrate that the proposed development can satisfy the SEARs bush fire risk requirement and the relevant provisions of *Planning for Bush Fire Protection 2019*:

Recommendation 1: The entire site must be designed and maintained as an Asset Protection Zone in accordance with the NSW RFS Standards for Asset Protection Zones and *Planning for Bush Fire Protection 2019*.

Recommendation 2: The current layout must maintain the required APZ / managed separation to the southeast woodland hazard, including a minimum 12 metre APZ to the residential apartment components and appropriate managed separation to the hotel / tourist accommodation component through the perimeter road network and intervening managed land. If the final detailed design materially reduces these separations, the bushfire assessment and BAL plan must be reviewed.

Recommendation 3: All proposed roads, accessways, loading areas and fire appliance access arrangements must comply with the relevant access provisions of *Planning for Bush Fire Protection 2019* and be coordinated with the civil, traffic and fire engineering documentation.

Recommendation 4: Water, electricity and gas supplies through the proposed development must comply with section 6.8.3 of *Planning for Bush Fire Protection 2019*.

Recommendation 5: Buildings or parts of buildings located on mapped bush fire prone land and affected by BAL exposure from the southeast woodland hazard are to be constructed in accordance with the BAL requirements shown in Figure 7, the National Construction Code, AS 3959-2018 *Construction of buildings in bushfire-prone areas* and/or the NASH Standard, and Section 7.5 of *Planning for Bush Fire Protection 2019*, as relevant.

Recommendation 6: The BAL requirements shown in Figure 7 are to be applied to the current architectural layout where buildings or parts of buildings are located on mapped bush fire prone land. If the final detailed design materially changes the building footprints, setbacks, perimeter road alignment, separation to the southeast woodland hazard, or the location of sensitive uses, the bushfire assessment and Figure 7 must be reviewed and updated.

Recommendation 7: In addition to any BAL requirements shown in Figure 7, and until such time as the adjoining land to the south and west is developed, managed or the temporary grass condition is removed, southern and western elevations of relevant building / podium elements within 10 metres of the southern or western boundaries are to be constructed to BAL-29, unless an equivalent performance solution is demonstrated.

Recommendation 8: In addition to any BAL requirements shown in Figure 7, and until such time as the adjoining land to the south and west is developed, managed or the temporary grass condition is removed, any part of the Upper Ground and Level 1 building / podium elements within 10 metres of the southern or western boundaries is to be constructed with an FRL of at least 60/60/60 or be entirely shielded/protected by a BAL-FZ rated bushfire shutter or equivalent radiant heat shield.

Recommendation 9: Prior to occupation of the hotel / tourist accommodation component, centre-based childcare facility and relevant retail, commercial, pub/function, recreation and public assembly components, emergency management and evacuation procedures are to be prepared having regard to the final built form, occupant profile, access arrangements and site operations. These procedures should include bushfire response measures where relevant and may be provided as a standalone Bush Fire Emergency Management and Evacuation Plan if required by the consent authority or NSW RFS.

9. Conclusion

This assessment has demonstrated that the proposed Leppington Civic Centre / Leppington Site A development can comply with *Planning for Bush Fire Protection 2019* and the SEARs requirement for bush fire risk assessment, subject to the recommendations in this report.

The key mapped bushfire hazard remains the isolated woodland hazard to the southeast. The previous final report and additional RFS response support the broader bushfire strategy for the southeast woodland hazard. Under the current design, the residential apartment components can achieve the required 12 metre APZ, while the hotel / tourist accommodation component benefits from additional separation provided by the perimeter road network and intervening managed land.

The key mapped bushfire hazard is the isolated woodland hazard to the southeast. The site is only partly mapped as bush fire prone land, and the bushfire protection measures are targeted to the parts of the development affected by that hazard. Under the current design, the residential apartment components can achieve the required 12 metre APZ, while the hotel / tourist accommodation component and centre-based childcare facility are not located on mapped bush fire prone land.

The land to the south and west is not mapped as Category 3 vegetation and is properly characterised as low threat in the context of PBP 2019. The current layout provides perimeter road separation to those interfaces. Temporary construction measures are retained only where relevant for building elements located within 10 metres of the southern or western boundaries.

In the author's professional opinion, the bushfire protection measures demonstrated in this report satisfy the aim and objectives of *Planning for Bush Fire Protection 2019* and provide an appropriate basis for assessment of the current State Significant Development application.



Corey Shackleton | Principal Bushfire & Resilience
Blackash Bushfire Consulting
B.Sc., Grad. Dip. (Design for Bushfire Prone Areas)
Fire Protection Association of Australia BPAD Level 3 - 34603



Appendix 1: References

Standards Australia (2021) AS 2419.1:2021 Fire hydrant installations – System design, installation and commissioning.

Standards Australia (2018) AS 3959:2018 Construction of buildings in bushfire-prone areas.

DKO Architecture (2026) - Leppington Site A architectural drawings, Project No. 13053.

Keith, David (2004) - Ocean Shores to Desert Dunes - The Native Vegetation of New South Wales and the ACT. The Department of Environment and Climate Change.

NSW Department of Planning, Housing and Infrastructure (2025) - Secretary's Environmental Assessment Requirements, SSD-99319962 Leppington Civic Centre - 173-183 Rickard Road.

NSW Rural Fire Service (2015) Guide for Bushfire Prone Land Mapping.

NSW Rural Fire Service (2019). *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.*

NSW Government (1979) *Environmental Planning and Assessment Act 1979*. NSW Government Printer.

Appendix 2: Radiant Heat Modelling

Forest/Woodland - FDF & SFR Calculation page:

Fire run specifics

Common and bushfire behaviour contributor inputs:

Predominant vegetation

Surface & Elevated Fuel Load tph Overall fuel load tph

Average Canopy Height Metres Fire weather district FDI

Average elevated fuel height Metres Flame temperature Kelvin

Distance to vegetation Metres Target elevation of receiver Metres

Effective slope Degrees Ambient temperature Kelvin

Site slope Degrees SFR fire run length Metres

DF nominal head width Metres

Outputs - Fully Developed Fire (FDF)	Outputs - Developing Fire Run (DFR)
Wind Speed 45 kph	Wind speed 30 kph
Default elevation of receiver 4.984 Metres	Default elevation of receiver 2.890 Metres
FDF Flame Angle 76 Degrees	SFR Flame Angle 81 Degrees
FDF Flame Length 9.97 Metres	SFR Flame Height 5.780 Metres
FDF Intensity 11203 kW/m	SFR Intensity 6200 kW/m
FDF FROS 1.2000 kph	SFR FROS 1.2000 kph
FDF Flame transmissivity 0.8314 kW/m	SFR Flame transmissivity 0.8295 kW/m
FDF View Factor 0.1965	SFR View Factor 0.1036
	Calculated SFR Head Width 54.905 Metres
	SFR fire run length 150 Metres
	Approx. SFR travel time 5:00 min/sec
FDF Radiant Heat 18.24 kW/m ²	SFR Radiant Heat 9.60 kW/m ²

Input cells Locked output cells

Glossary of abbreviations/terms:

tph = tonnes per hectare	m/h = metres per hour	K = Kelvin
kW/m = Kilowatts per metre	FROS = Forward rate of Spread	min = minutes
kW/m ² = Kilowatts per metre squared	kph = kilometres an hour	sec = seconds
HFD = Horizontal Flame Depth	FF = Flank Fire	min/sec = minutes and seconds
LRV - Low Risk Vegetation	SFR = Short Fire Run	